THE MARKET RISK AND FINANCIAL PERFORMANCE OF SELECTED COMMERCIAL BANKS IN UGANDA

A Thesis

Presented to the

School of post graduate studies

In partial fulfillment for the award of degree of Masters of Business Administration of Kampala International University

BY: BYAMUKAMA ELIAB. K. MPORA

REG NO. MBA-PT-2004-04

OCTOBER 2006

DECLARATION

I, **ELIAB BYAMUKAMA**, declare that this research report / dissertation is truly my original work, as a result of my independent research and has not been submitted to any other institution for any other award. Where work of others has been used, the acknowledgement has been made, and I take responsibility for any errors and inconsistencies made.

Signature:.....

Date: 09-11-2006.....

APPROVAL

This dissertation is submitted for examination with my approval as work-based supervisor.

Signed:.....

WORK-BASED SUPERVISOR

DEDICATION

To my dear parents who worked selflessly to see me advance in my education.

ACKNOWLEDGEMENT

During the conduct and production of this manuscript, many people availed their valuable time and contributed to its success.

First and foremost, I thank God the provider of life and strength who "enabled me through" a challenging but interesting course.

Candidly, I wish to extend my special thanks to my supervisor, Dr.Alex Thomas Ijjo and assistant supervisor Dr. Kayongo, for their critical supervision and guidance.

I am equally grateful to all my lecturers; especially Professor J.P.Opio, for their support during the hard times and Madam Imelda for the parental advice she rendered to us.

I sincerely thank Mr. Hassan Basajja, who gave me financial support, and my fiancée Janet who gave me Spiritual, physical, intellectual and moral support. She played a big role while I was away at the university by taking care of the home and representing me on many occasions during my absence.

Byamukama Eliab. K. Mpora.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

ROE: Return on Equity

ROC: Return on Capital

RAROC: Risk Adjusted Return on Capital

CA: Capital Adequacy

BOU: Bank of Uganda

VAR: Value at Risk

ERS: Expected rate of return on share.

RM: Market rate of return

RF: Risk free rate of return

UBOS: Uganda Bureau of Statistics

ICPAU: Institute of Certified public Accounts of Uganda.

ABSTRACT

This study was carried out to examine the relationship between interest rates, inflation rate, exchange rate, income distribution and financial performance, in relation to customer loans within commercial banks in Uganda. The researcher focused on the savings mobilization by commercial banks in Uganda and the impact of macro-economic factors on customer's demand and deposits.

A longitudinal design was developed to compile secondary data from; Bank of Uganda reports, Uganda Bureau of Statistics, World bank annual reports, Uganda Institute of Bankers' library, and Ministry of finance Publications, among others from 2001 – 2005. The data was analyzed using the SPSS package and Pearson's correlation Co-efficient, which measured the strengths and direction between the independent and dependent variables

The findings showed that due to the high risks commercial banks encounter in extending loans to the private sector, there was a decline in retaliation of their assets over the five years. The results showed a positive significant relationship between exchange rate, interest rate, access to finance, and loans availed to customers between 2001 and 2005. The results also showed a high relationship between the risks and financial performance of the commercial banks.

The study concluded that high interest rates, exchange rates, lack of collateral securities and inflation have a significant role in accessing loans. Commercial banks should concentrate on these variables and other incentives to woe customer access to credit for long term financing.

The study therefore recommended that for banks to avail credit facilities to their customers, the banks should ensure that the customers have fixed assets and equity securities.

CHAPTER ONE

1.0 INTRODUCTION

The adoption of financial liberalization as an economic policy by many sub Saharan African countries, has made private sector investment crucial in propelling economic growth. In Uganda, the Ministry of Finance, Planning and Economic Development considers the private sector as the engine of growth and its immediate objective is to support the private sector to become a powerful engine of economic growth. To attain this objective, private sector projects require financing for both acquisition of fixed assets and working capital. Therefore the domestic recycling of funds otherwise known as "financial intermediation" is important for sustainable growth.

Following the trend of the banking sector, the total deposits base grew up by Shs. 339 billion or 23% from Ushs. 1,483 billion as at 31st December 2001 to 1,822 billion as at 21st December 2002. This compares with an increase of 11.8% in December 2001 compared to December 2002 where BOU portrayed that growth in total deposits had been positive over the last years. Since the institution of economic reforms this growth in deposits was mainly reflected in demand deposits. Demand and call deposits increased by Ushs 215 billions or 22% from Ushs 960 billions in 2001 to Ushs 1,175 billion as at the end of the year 2002.

Demand deposits also increased strongly by 9.9% from Ushs 672.8 billion to Ushs 739.6 billions. With such an increasing trend or growth in demand deposits and a decline in the term deposits, commercial banks find themselves in an unfavorable investment and lending climate and prefer short term to long term lending if they are to instantly meet liquidity requirements of their demand customers (BOU research, 2004).

Commercial banks' total lending to the private sector amounted to 937.9 billions as at November 2003. Of this however, trade and commerce which is highly short term,

accounted for 56% manufacturing, 23.8% agriculture, 9% transport, 6.8% electricity and water, and construction remained low at 3.2% (BOU, 2003).

Sustainable economic growth in Uganda, like in many other countries, can be achieved through savings mobilization. There are many players, but commercial banks remain one of the most important formal financial intermediaries because they accept, safeguard and lend surplus funds of their customers, while permitting the withdrawal of these funds, or their transfer from one account to another (Bagonza, 2001).

Capital formation is one of the most important and strategic factors in the process of economic development, since many economically desirable objectives like price stability, full employment and high rate of economic growth are closely bound to the saving-investment process (Aryeetey & Poker, 1992).

There are several macro-economic factors that influence the decision to borrow, save and lend and they majorly include; exchange rate, interest rate, inflation rate, and income distribution.

Lending by any form depends on the degree of monetization of the economy and more so on the interest rate risk, return, convenience, flexibility and liquidity as a alternative investment opportunities.

In times of low disposable incomes, high inflation rates, households and investors would prefer disposal of physical assets to monetary savings and borrowing to avoid high interest rates (Rukyera).

Commercial banks ensure an efficient credit mechanism extend credit to a balanced range of viable investment projects. Having a good credit mechanism without saving, only results in an inflationary struggle for more real resources than exist. This is because when

transactors spend in excess of current receipts, they acquire more commodities from community than they contribute.

As has been mentioned in previous discussions, a major objective of financial institution management is to increase the financial institutions' returns for its owners .This often comes, however, at the cost of increased risk. There is need to overview the various types of risks which include, Market risk, off- balance sheet risk, foreign exchange risk, technology risk, and operational risk. However, the researcher put much of his concern on market risk and concentrated on its measures.

Commercial banks lending to the private sector, reflected by the loans to deposit liabilities ratio, declined from 73% in 1993 to 54% in 2001. Banks were mainly liquid and had overall liquid assets to deposit ratio of 81.9% as at the end of March 2001. This ratio is relatively low as compared to over 75% deposit liabilities ratio of countries in sub-Saharan African that are almost at the same level of development as Uganda.

In conducting their lending functions they also have to consider changes in the environment that impacts on banking industry these majorly include; interest rate, inflation rate, foreign exchange rate and income distribution.

1.2 Problem Statement

Banks performances are threatened because they operate in volatile environments and measures are not taken to limit the unexpected losses to a level that can be absorbed.

Commercial banks act as the main formal intermediaries between the surplus spending units and deficit spending units in the economy.

In the execution of this intermediary function, they are faced with various forms of risks such as; liquidity risks, credit risks and environmental / market risks. They have to borrow from savers and maintain enough liquidity to meet the saver's cash demands and at the same time lend to investors / borrowers) at a margin, to cover their costs of borrowing (interest on deposits) intermediation costs, default risk premium and also make a profit.

Despite the increase and innovations in Commercial bank activities, the financial performance of the banking sector is not adequate. This problem needs to be examined if the commercial banks are to effectively lend to the private sector, reduce market risk and thus make profit.

1.3 Purpose of the Study.

The study sought to analyze the impact of risks on lending to the private sector and financial performance of selected commercial banks in Uganda.

1.4 Research objectives.

The study was aimed at achieving the following objectives in line with its intended purpose;

1. To establish the categories of risks faced by commercial banks.
2. To establish the strategies banks adopt to hedge against the risks.
3. To establish the cause of high interest rate charges on loans.
4. To establish the effect of credit availability to the business sector.

1.5 Research questions.

- What are the categories of risk faced by commercial banks?
- What strategies are banks adopting to hedge against the risks?
- Why do commercial banks charge high interest rates on loans?
- How does the climate of risk affect credit availability to the business sector?
- How is the market risk of commercial banks based on Value at risk and risk adjusted return on capital related?

1.6 Scope of Study.

Subject Scope

This research was limited on risks using the Value at Risk and the Risk Adjusted Return on Capital Models of commercial banks in Uganda.

Time Scope

The study covered a period of five years (2001– 2005) depending on the availability of the data.

Geographical Scope

The study covered only selected commercial banks in Uganda, some of which were local and others, international.

Organization of the study

The study is organized in five chapters. The introductory chapter one features the background of the study, the problem statement, the purpose and objectives of the study, the conceptual framework and the scope covered by the study.

Chapter two is about a review of the related literature according to what is already in place, Chapter three brings the methodology employed in carrying out the research. It includes the research design, study population, measurement of variables, data source, data analysis, ethical considerations and limitations encountered.

Chapter four expresses the analysis and the presentation of the findings with the use of the data in put in Microsoft excel and statistical package for social scientists.

Chapter five talks about the conclusions and the recommendations based on the findings as laid out in chapter four.

1.7 Significance of the study

(a) The study will help the policy makers to make meaningful and useful conclusions based on facts, pertaining to the risks of financial intermediaries.

(b) The study will also be useful to the partners and stake holders in the finance industry to increase the profitability of their projects as the result of increased risk awareness.

(c) The study may attract more researchers in the area of market risk in Uganda to reduce the eventualities.

(d) It may provide an opportunity for bankers to calculate the risk and return on investment by reducing risk exposure and thus improving banker's performance.

(e) The study would also assist the government in the formulation of macro economic policies aimed at fostering a domestic or internal problem rather than focusing on the external causes.

(f) The study will help academicians to develop more areas of research.

1.8 Conceptual Framework.

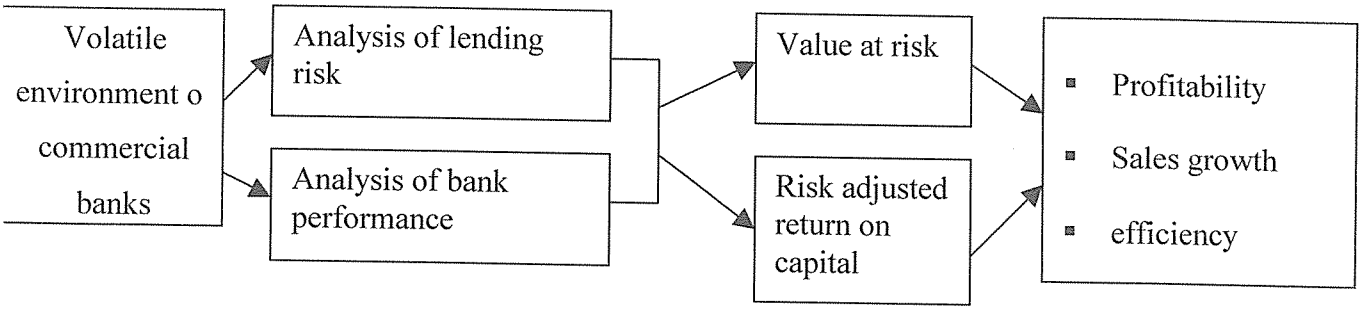
The model explains the relationship between the variables under the study .It describes lending risks as the independent variable and financial performance as the dependent variable.

The financial performance has been conceptualized as a multi dimensional construct consisting of profitability, efficiency and capital adequacy as shown below.

Analysis of lending l

Figure 1.Conceptual framework

Lending risks **Financial performance**



The volatile environment of the commercial banks will lead to the analysis of lending risks and the analysis of bank performance. These will lead to value at risk and risk adjusted return on capital. These will then lead to profitability, sales growth and efficiency of the commercial banks.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

The reviewed literature is along the following themes: Market Risk, Value at Risk (VAR), Risk Adjusted Return on Capital (RAROC) and the Performance of selected Commercial Banks.

The condition and performance of all financial institutions in Uganda is evaluated in relation to their capital adequacy, asset quality, earnings, liquidity, management and foreign exchange operations (www.bou.or.ug/BSAnnualReport_1999).

This is obtained mainly from studies carried out in developed countries in relation to its applicability in Uganda.
Commercial banks are financial intermediaries that are licensed and mandated by the central bank to carry out the business of acceptance of call, demand, saving and time deposit, withdrawable by cheque or otherwise and provision of overdraft and loans to customers among others (FIA, March 2004).

Furness (1975) reveals that financial intermediaries face the problem of mobilizing an adequate flow of savings, ensuring an efficient credit mechanism and to ensure that they extend credit to a balanced range of viable investment projects.

Bank of Uganda regards the maintaining of adequate level of bank liquidity level, along with solvency an essential aspect of overall bank soundness.

It maintains that banks maintain at all times liquid assets as defined I section 15 of the statute to equal or exceed the sum of 20% of demand liabilities plus 15% of time deposits, with later including all saving deposits.

Banks that fail to meet the above requirements are subject to financial penalty as specified in section 15 (4) of the statute, the implication of this is that commercial banks must match their contractual and maturity profiles of its deposits (liabilities) and its assets and investment to come up with a mix that puts them in a solvent situation.

Banks also have a risk and a task of balancing their volatile demand liabilities and the need to mobilize funds for long term financing yet keep solvent.

Commercial banks play a central role of financing intermediation by attracting deposits through their various customer deposits facilitating and channeling them out to investors and deficit units at a fee. However, the concentration of these deposits is questionable with a large chunk of them unworthy for long term lending due to their highly volatile and nature.

Commercial banks have also expanded into non-traditional activities. They are part of the and ever changing system of financial markets and agents (Smith, 1991).

The speed of change and innovation in the financial markets presents a real change for banks and for authorities responsible for financial stability (Cliementi, 2001). Banks make their profit through lending but incur costs that depend upon their scales and also that of other banks.

Deregulation of international financial systems over the 1980's was accompanied by a period of high price volatility in the prices of financial instruments and other financial assets opened new opportunities for financial institutions from the trading of those instruments, while banks market related exposures remained relatively, small and actual loses minimal.
The Managing Director of Uganda Commercial Bank in 1993, Mr.Seruma, said that Uganda's economy and especially financial sector in part faced a number of challenges during this period resulting from previous period, which intended to run away inflation and myriad of controls.

Bank owners are, wealth constrained and raise funds in form of deposits, which is costly outside equity. Since bank investments are not contractible, there is conflict of interest between the bank owners and other claimants.

The growth in the market related exposures began to accelerate especially over the half of the 1980's. The nature of the bank's exposures also changed. Traditional risks associated with large holdings of fixed assets securities remained but were supplemented by additional risk associated with growth in off balance sheet and derivative markets. (Weston & Gary, 1994)

Monetary control act requires the banks to recover their costs of providing services overtime including a normal return of capital that is the same after tax return on equity a private firm would require (Thomson 2002).
Commercial banks in Uganda invest environments where market factors such as interest rates, foreign exchange rates and prices are not stable.

2.2 Market Risk.

This is a risk where a bank may experience a loss due to unfavorable movements in financial market prices. It exposes the bank to market risk, exchange rate risk and commodity price risk. The risk arises from movement in t he market due to supply and demand.

Market risk factors refer to anything that affects the value of the portfolio. Under portfolio concepts, financial managers should not make decision in isolation; they should focus mainly on broad perspective of effects on date of holding.

Heffernan (1996) pointed out that the financial sectors of developing countries are inhibited by poor pay, political interference in management decisions and regulatory systems which limit banks to prescribed activities. In some cases, there are also limits on the rate of financial innovation. He further argued that the absence of explicit documented lending policies, it is more difficult to manage risk and senior managers are less able to

exercise close control over lending by junior managers. This can lead to an excessive concentration of risk, poor selection of borrowers and speculative lending.

The increasing exposure of banks to market risk is due to the trend of business diversification from the traditional intermediation function towards market making and proprietary trading activities where by banks set aside "risk capital" for deliberate risk taking activities.

Market risk is the potential adverse effect that external market forces could have on the value of financial institution's assets, liabilities and off the balance sheet positions in market table instruments which arises from movements in the markets (Bank of Uganda, 2003)

The stake holders of banks should know market risk exposure. The techniques for quantifying and monitoring it have changed from simply out right exposure to more sophisticated risk measures based on derivates price sensitivity to interest rates and price volatility. The commonly used solution to measure risk is called Value at Risk and a measure of profitability that takes into account the risk level of capital used to produce the profit is called Risk Adjusted Return on Capital (RAROC).

The revolution in information technology has fostered development of sophisticated techniques of measurement and management of market and credit risk, use of those techniques has become vital both for market players and financial intermediaries.

The market risk approach covers general market risk and the risk of open positions in currencies, debt and equity securities.

Assets are assigned a risk according to the amount of capital deemed to be necessary to support them. According to (KU, 2001) deregulations and competition increases the volatility of energy prices. The more volatile an energy market is the riskier it is for firms doing business in the market.

Energy traders call this market risk and some quantity. It is using measures based original ores for example Value at Risk (VAR)

The measures of market risk quantify the loss that a commercial bank is likely to incur out its asset portfolio, which includes investment in treasury bills and government securities.

2.3 Value at Risk (VAR)

Value at Risk as defined by Larent and Scaillet (2000) explains how a value of a portfolio could decline over a given period with a probability range. Value at Risk has become a key tool for risk managers and most financial institutions today use it as a tool that provides quantitative and synthetic measure of risk that allow to take into account various kinds of cross dependence between assets return and default risk

Value at Risk is a modeling technique that typically measures a bank's aggregate market risk exposure and given a probability level, estimates the amount a bank would loose it were to hold specific assets for a certain period of time.

Value at Risk simply states how likely it is that the Value at Risk figure will be exceeded. Most Value at Risk model are designed to measure risk (Value at Risk) is derived using the following formula: -

VAR = Expected profit (loss – any short fall) worst case at – 98% CI

The Value at Risk relates to the economic capital that share holders should invest in the firm with a pre determined level basing on the limit the probability of default.

Therefore, the Value at Risk is for measuring market risk and some financial managers use it for managing purposes.

The importance of Value at Risk is derived from its applicability by stake holders of the banks. This is because the banks use Value at Risk to manage the portfolio risk since it informs the decision makers about purchasing insurance and hedging strategies.

Hoadley (2004), once again said that Value at Risk approach aims at consolidating in an accurate way the risks inherent in a portfolio of various classes of financial investments.

The potential loss is quantified using the specified holding period and the desired statistical confidence interval. The purpose of VAR analysis is to provide quantitative guidelines for setting reserve amounts or capital requirements in phase with potential adverse changes in prices. Typical values for the loss probability range from 1% to 5%, depending on the time horizon. It is a reserve amount such that the global position (portfolio plus reserve) only suffers a loss for a given small probability over a fixed period of time. Therefore VAR is the amount that the portfolio losses are not expected to exceed with a specified degree of statistical confidence over a specified period of time.

Banks use VAR to mange the portfolio risk because it informs the decision makers about purchasing insurance and hedging strategies. The importance of Value at risk is derived from its applicability by stakeholders of the banks. (Cassidy & Gizyeki 1997)

2.4 Importance of VAR

VAR is for managing as well as measuring market risk. It is a powerful approach and it has far reaching uses which include:-

- It can be used to measure risk-adjusted performance and therefore used to discourage risk taking that does not add value from the shareholder's perspective.
- The risks taken by the business line can be monitored using limits set in terms of VAR so that banks do not take more than the expected risk.
- It provides a common, consistent and integrated measure of market risk across market factors, instruments and assets leading to greater risk transparency and consistent treatment of risk across the firm.
- It provides an aggregate measure of risk, which can then be easily translated into capital requirement

- It is an internal and external reporting tool, communicated to regulators and has become a basis for calculating regulatory capital.
- It allows managers to assess the benefits from portfolio diversification (Daily revenue volatility they expect from any trading area).

VAR approach to risk as asserted by Hoadley (2004) aims at consolidating in a consistent way the risks inherent in a portfolio of various classes of financial instruments. The results are expressed in a single number that is a VAR in terms of the maximum expected loss.

Rees (2000) argued that the traditional buy-side risk management tool, tracking error should be put to the sword and replaced by Value at risk. VAR is conventionally quoted as a monetary amount rather than a percentage. VAR answers better the question of how much a business can lose which most fund managers really mean by risk. The Value at risk model determines the economic capital required to reduce on the losses. However the economic capital invested should generate a return. This is determined by the Risk adjusted return on capital model.

2.5 Risk Adjusted Return on Capital (RAROC)

This is the risk adjusted return on economic capital. Economic capital is attributed on the basis of market risk, credit risk and operational risk. The risk-based capital strengthens the risk management discipline by quantifying the level of risk and achieving return commensurate with the risk taken. Market risk, is the risk incurred in trading assets and liabilities due to changes in interest rates, exchange rates and other asset prices. Credit risk is the risk that the promised cash flows from loans and securities held by financial Institutions may not be paid in full. Operational risk the risk that existing technology or support systems may malfunction or break down. It controls the risks across projects or investments and is a thorough decision that allocates capital to investments according to their risk RAROC was initiated to measure risk and amount of capital necessary to limit the exposure to a specified probability of loss (Thomson 2001). .

A separate issue arises in allocation of capital to different services. Capital budgeting theory suggests that firms should use a different hurdle for each distinct type of activity according to its risks. Single hurdle rate of capital could be used for all services if capital is allocated to each service according to its risk. This is the rationale behind the use of RAROC in the bank lending decisions and the spirit behind the Federal Reserve's economic capital. Further the recently announced Basel capital accords should require the Federal Reserve to fundamentally rethink its approach for assigning capital to its payments services (Thomson, 2001).

Crouchy, et al. (2001), RAROC reveals how much economic capital the bank requires and how these requirements create the total return on capital produced by the firm. Further, RAROC provides economic basis from which to measure all relevant risks and risk positions consistently. Since RAROC promotes consistent, fair and reasonable risk adjusted performance measure, it provides mangers with information required to trade off between risks and rewards more effectively. Banks must mange their lending activity like objective investors and adopt a risk adjusted return approach to the loan portfolio. As investors in loans, banks must earn a sufficiently high economic return on the capital that supports the loan portfolio; if not the bank should shift the capital to some other business. It would not be justifiable to allocate the banks' capital in asset portfolios that do not generate high returns.

RAROC systems allocate capital for risk management so as to determine the bank's optimal capital structure and for performance evaluation to determine risk adjusted rate return. The RAROC would be ascertained and quantified in ratio form.

The Risk Return on Capital is calculated thus

$$\text{RAROC} = \frac{\text{Risk Adjusted Return}}{\text{Risk adjusted capital}}$$

Guthoff (2000) calculated RAROC using risk adjusted profit and risk capital and the criterion for motivation is when RAROC is greater than zero. Risk adjusted capital

measures the capital required to absorb the unexpected loss (Market risk). As return on capital replaces asset growth as a favorite performance measurement for loan portfolios; bank management is placing increasing emphasis on risk adjusted performance measurement .He further asserts that banks are turning their attention to incorporating a risk perspective in attributing capital and measuring performance on risk adjusted basis. RAROC is justified as being a guide to bank state holders. .

According to Ranson (2003), RAROC is not an end in its self, its advantages are more in a way that ensures that risk and reward remain linked and in consistency of decision thinking that it enforces. Its critics tend to focus on what it does not do. It remains a good idea but like any model, it needs intelligent users.

Bank of Uganda introduced risk based supervision to financial institutions supervision. The new methodology of supervision has been implemented in all on site examinations conducted in the year 2003. The approach involves assessment of the financial institution's profile and risk management systems in order to identify, measure, monitor and control the various risks. Bank of Uganda issued risk management guidelines to financial institutions and required them to develop their worn risk management programs (BOU, 2003). Numerous approaches exist for determining how much risk-based capital should hold. Banks provides some basic information about the probability of default for loans in their portfolio and using this information, the bank's regulator suggests a capital ratio commensurate with the bank's risk exposure. The loss on the asset portfolios of the bank will be reflected in its capital levels and ability to utilize the assets to generate the income.

2.6 Financial Performance of Commercial Banks

The bank's financial performance is determined by its profitability, efficiency and capital adequacy. Chirwa (2002) asserted that in portfolio choice models, banks seek to maximized profits defined by feasible set of assets and liabilities with interest rates set by

the bank and per unit of costs incurred by the bank of providing each component of assets and liabilities.

As regards the financial performance of banking sector, total deposits base grew up Shs. 339 billion or 23% from Ushs 1,483 billion as at 31st December 2001 to 1,822 billions as at 21st December 2002. This compares with an increase of 11.8% in December 2001 compared to December 2002 BOU where it is portrayed that growth in total deposits had been positive over the last years. Since the institution of economic reforms this growth in deposits was mainly reflected in demand deposits. Demand and call deposits increased by Ushs 215 billions or 22% from Ushs 960 billions in 2001 to Ushs 1,175 billion as at the end of the year 2002(BoU annual reports)

Profitability

Profitability implies the ability of the bank to earn a return from its investments. The return is normally a margin of sales, proportion of capital invested and proportion of assets used. According to Chirwa (2001), most bank studies, emphasis is placed on measuring profitability in terms of return on equity (ROE) and return on assets (ROA). Profitability as a measure of performance is widely accepted and used by bankers, financial institutions, management, company owners and other creditors as they are interested in knowing whether or not the firm earns substantially more than it pays by way of interest. The bank uses the return on investment ratio to determine profitability of a bank with an expression:

$$\textbf{Return on equity} = \frac{\textbf{Earnings after tax}}{\textbf{Equity}}$$

This implies that continued viability and good performance of a bank depends on its ability to earn an adequate return on assets and capital. Pandey (1996) asserted that return on shareholders' equity is calculated to see the profitability of owners' investment. It indicates how well the firm has used the resources of owners. The ratio is one of the most important relationships in financial analysis and a satisfactory return is the most desirable

objective of the business. The ratio reveals the relative performance and strength of the company in attracting future investments.

Return on equity links income to the level of investment and viability of a bank depends on its ability to earn its assets and equally. Satisfactory earnings performance enables a bank to fund its expansion, remain competitive in the market and replenish and/or increase its capital base (BOU, 2003). The return from an investment consists of income, the benefits received by owning the assets and the capital gains made when the assets are sold.

Efficiency

This is the ability to generate revenue or income from the available resources. In general when assets are well utilized, the banks rate of return will be high. According to Barr, et al (2002), quantitative models are used to calculate efficiency of banks because they result in an objectively determined quantitative measure of relative performance. There are significant differences in bank performance measures between more efficient banks and less efficient banks. Specifically more efficient banks should have higher levels of profitability, few loan problems and stronger bank examiner ratings.

Harrop (1999) asserted that many banks seek to become more efficient and maintain profitability. The efficiency ratio is commonly used to measure how the organization is utilizing its assets and it is calculated thus:

$$\frac{\text{Non interest Expense}}{\text{Net Interest Income + Non interest income}}$$

Efficiency of banks can be obtained as a maximum ratio of weighted outputs to weighted inputs as below

$$\frac{\text{Net interest income +Non interest income}}{\text{Non-interest expense}}$$

This is all about measures of costs, inputs, output, revenues, and profits to impute efficiency relative to best practice institutions. The above efficiency ratio gives the revenue or income earned in a business and the higher the bank's ratio the more competent it is in the utilizing of its assets. It is important when studying inefficiencies to account for differences across the markets in which banks are operating. An understanding of a bank's relative efficiency is important for analysts, practitioners and policymakers. It was found that foreign owned banks are on average most efficient, that the new banks were more efficient than the old ones, and that smaller banks were globally efficient but large banks appeared to be efficient when variable returns to scale are allowed.

Foreign owned banks were expected to be relatively efficient and family owned or state owned banks were relatively inefficient. The incentives for mangers to efficiently allocate resources differ under foreign and state owned banks. Failure to monitor bank activities will increase subsequent costs. Allen & Rai (1996) asserted that universal banking countries permit functional integration of commercial and investment banking. As domestic markets becomes more competitive, current differences in costs and productive efficiency among banking industries will determine the country's banking structure and future competitive variability.

There does not seem to be many cost efficiency gains made from third banks changing their sizes, and these results are much like those obtained using the U.S.A. samples. A simple correlation and regression correlation and regression results indicate that inefficient banks in the district tend to be younger. There is no evidence that larger banks are more efficient than smaller banks. Inefficient banks have a higher percentage of loans in construction and land development and loans to individuals. Therefore inefficient banks have more fear from efficient producers than from banks producing particular value (Mester, 1993)

Capital adequacy

Capital adequacy is a determination of the minimum amount of capital needed to satisfy a specified economic capital constraint. This is the bank's Capital in relation to its risk-adjusted assets.

Khanker, Khalily and khan (1995) citing on evaluation by the World Bank in 1975 of credit programmes sponsored by it and other agencies revealed that most financing institutions were unable to break even. They argued that a credit program, if it is to maintain its capital holdings, must generate sufficient revenue over a given period of time to meet its operating costs. Revenue is received from borrowers' interest payments and cost arises from raising loan- able funds, organizing, administering loans and covering bad debts.

A high level of capital is necessary to control the incentive to take on excessive risk and to absorb a reasonable amount of losses. The risk management concept requires that the concept of financial organization be sufficient to protect it from on and off the balance sheet risk. The Banks monitor their adequacy of its capital using established ratio by the Bank for International Settlement (BIS). These ratios measure capital adequacy by comparing the Bank's eligible capital with its balance sheet assets, off the balance sheet commitments and market and other positions at a weighted amount to reflect their relative risk.

Large banks have greater capacity to hedge risk at low cost than small banks. Large banks with diversified portfolios of firms have an advantage over small banks in providing insulation against aggregate shocks as well. Banks hold capital in excess of the reserve requirements to provide a buffer against future, unexpected losses. Such loses are brought about by credit, market and operational risks inherent in the business of lending money. Problems created by an insolvent bank are important enough that bank regulators enforce minimum capital standards on banks in an effort to safe guard depositors and ensure the ongoing viability of the financial system. However from a bank's perspective holding idle capital is an expensive safeguard against risk because the bank's shareholders demand a

return on their investment and idle capital provides no such return. For this reason, bankers and regulators can have divergent opinions about the amount of capital a bank should hold, making the problem of determining a bank's risk based capital a complex and important question. (Berlin & Mester 1997).

Acharya (2003) alleges that lack of a complementary variation between minimum bank capital requirements and regulatory forbearance leads to spillover from more forbearing to less forbearing economies and reduces the competitive advantage of banks in less forbearing economies. Linking the central bank's forbearance to its alignment with domestic bank owners, it is shown that in equilibrium, a regression toward the worst closure policy may result.

Bertrand (2002) observes that capital requirements can reduce the less moral hazard incentives by forcing bank share holders to absorb a large part of the losses, there by reducing the value of deposit insurance put in option. Benink (2001) argues that the New Basel Accord provides incentives for banks to develop new way to evade the intended consequences because supervision alone cannot prevent banks from gaming and manipulation of risk weights based on internal ratings. Therefore, as banks operate in markets with unstable prices and interest rates their financial performance and opposition are affected.

2.7 Market risk exposure and Financial Performance

Anderson (1994) warned that banks must be capable of evaluating the riskiness of the projects they finance, if they are to achieve the goal of allocating capital efficiently.

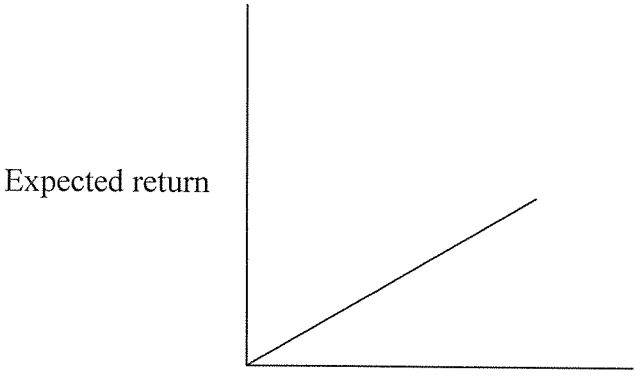
Banks hold capital to provide a cushion against unexpected losses therefore the amount of capital a bank needs is a function of the riskiness of its portfolio. The determination of economic capital using RAROC and its allocation to various bank units is a strategic decision process that affects the risk/return performance of the whole bank. The economic profit measures the return generated in excess of the bank's cost of equity capital. When

the returns do not exceed the cost of equality capital, then the shareholder's wealth is diminished and more effective deployment of that capital will be sought (Smith & Merritt, 2004).

The higher the capital adequacy measures the lower the level of risk to the bank. Reduction of market risk may reduce the expected costs of financial distress and therefore increasing expected cash flows and the firm's value. The nature, components and features of capital provide important information about the banks ability to absorb financial losses. Expected return and risk are inter dependent therefore if the bank chooses a risk level, it should fix expected profit (Raatikainen, 2003). Banks market risk taking increased further with the introduction of risk-based capital which further reduces charter values for banks. Synthetic universal banks have significantly positive excess returns with lower market risk exposures and higher expected returns than securities firms (Allen & Jagtiani, 1996).

Relationship between risk and Return

The relationship between risk and return in form of a line graph is shown below.



The above graph shows that investors increase their required rate of return as perceived risk (Uncertainty) increases. The line that reflects the combination of risk and return available on alternative investments of referred to as the security market line (SML). Investors place alternative investments somewhere along the SML based on their perceptions of risk of the investment. If the investment's risk changes due to a change in one of its risk sources, it will move a long the SML. If the firm increases its financial risk by selling of a large bond issue that increases its financial leverage, investors will perceive

its common stock as riskier and the stock will move up the SML to a higher risk position. Investors will then require a higher rate of return. Financial theory suggests a positive relationship between risk and return and it is ultimately bank managerial action that sets the level of risk-based capital. Presumably the bank would like to set its risk-based capital in accordance with the risks the bank is facing and commensurate with the returns that shareholders demand. In fact, the revised Basel Accord, which provides guidance on the issue of capital adequacy, encourages bank to develop internal capital allocation models that more accurately reflect their lending risks and personal situation and practices (Stokes, 2002). The loss on the value of asset portfolios can be reduced by investing in different markets.

Diversification is paramount to achieving risk/return efficiency particularly in a debt portfolio where little or no upside for asset concentration exists. Relating return and risk has been one of the most important problems in finance. The most broadly accepted theoretical approach for addressing this issue is the capital asset pricing model (CAPM) or its more generalized version called the Arbitrate pricing Theory (APT). It states that share holders will require a return in excess of the risk-free rate to compensate them for un-diversifiable risk (. Risk reduction is an important contributor to increased share holder value which explains why risk management is an important concern to executives. There is a strong link that exists between risk and organizational performance generally showing that more profitable companies have lower risk. This link was established by poor strategic risks such as failures and crises which have direct costs and divert management attention so that return falls. Portfolio selection is based on the trade off between expected return and risk and requires a choice for the risk measure to be implemented. Usually the risk is evaluated by volatility. He concludes that as banks of the more forbearing regime take greater risk, the profit margins earned by the banks on the less bearing regime erode further, which further reduced their charter (Achary 2003).

Relationship between risk, Capital and Efficiency

It is asserted that capital levels are inversely related to risks and that inefficient banks hold lower levels of capital, possibly indicating regulators' preference for capital as a mean of

restricting risk-taking activities. It was suggested that European banks did not have an incentive to take on more risk. The risk management systems are actively designed to take on risk, to sustain a certain level of loss and to communicate that loss while reassuring investors and shareholders that the Organization's long-term direction remains unaltered (Scott, 2002). According to Henderson (2002) executives trade the market portfolio to adjust exposure to market risk and are able to examine the effect of market risk and correlation between the stock and the market, on the value to the executive and incentives. There is a negative relationship between the risk and value if volatility is fixed, however the value may increase or decrease with the firm-specific risk.

To Mester (1993), there was negative relationship between inefficiency and capital asset ratio indicating that capital may prevent moral hazard. If capital is relatively expensive, the forced reductions in the leverage diminish the bank's expected returns. As a consequence, the bank's owners may choose a higher point on the efficiency frontier, with higher return and risk. In some cases, the increase in the bank's risk over compensates the increase in capital and leads to higher default probability.

Banking should carry out Stress tests while managing their risk. Stress testing is the identifying events of influences that may result in loss that is having a negative impact on the bank's capital position. Stress tests should be both quantitative and qualitative in nature. Quantitative criteria should identify plausible stress scenarios that could occur in a bank's specific market environment. Quantitative criteria should focus on evaluating the bank's capacity to absorb potentially large losses and identification measures that the bank can take to reduce risk and conserve capital (Greuning, 2001). The quality of the banks assets is a critical element in the banking business but if not well managed, they could negatively impact on the profitability and capital.

(Stokes (2002) argues that given a loss distribution, risk-based capital can be determined by selecting the percentile of the simulated loss distribution with the bank's target level of insolvency probability. This helps in determining the amount of capital to hold against each type of risk. The broadening of risks taken on by banks and the need for appropriate

risk management also raise a question of the adequacy of the current banking regulations for addressing.

A related question is the potential role of corporate governance and markets in disciplining financial intermediaries.

CHAPTER THREE

3.0 METHODOLOGY.

3.1 Introduction.

This chapter presents the research methodology used to carry out the study. It covers research design, survey population, sample size, Sampling procedures, sources of data, methods of data collection, measurement of variables, data analysis, limitations of the study and contingency measures used.

3.2 Research Design.

The study was conducted as a quantitative survey. Secondary data was utilized for a period of five years ranging from 2001 to 2005 from Bank of Uganda regarding the performance of the selected commercial banks.

Descriptive research design was used to ascertain the market risk of commercial banks and their financial performance while analytical research design examined the relationship between market risk and financial performance of commercial banks.

3.3 Survey Population.

The survey population consisted of 15 commercial banks in Uganda, six of which were local and 9 were international commercial banks.

3.4 Sample size and sampling procedure.

Purposive selection method was used where the banks were purposively selected. These could either be local or International banks for the purposes of getting enough and accurate information. The banks included A, B, C and D.

The sample size of 15 was proportionately stratified into 6 local and 9 international commercial banks.

Purposely sampling was to select the 6 banks with available and complete data. Among the 15 commercial banks, 9 had incomplete annual reports. Among the 6 commercial banks which had complete and audited annual reports, 4 were accessible by the researcher, composing of 2 local and 2 international commercial banks.

Table 1: Sample Size

Category of Banks	**Population**	**Sample size**
Local	6	2
International	9	2
Total	**15**	**4**

3.5 Source of Data.

Secondary data was mainly used, obtained from published annual reports in Bank of Uganda library, Uganda Bureau of Statistics, Uganda Institute of Banker's library, World Bank Library, Professional Publications and Relevant database.

3.6 Methods of Data Collection.

The method of data collection was documentary review approach by abstracting from published commercial bank's reports that were not prepared specifically for this study scope.

Data was obtained from annual and quarterly reports covering the period of five years from 2001 to 2005.

3.7 Data Quality Control.

The introduction letters from Kampala International University enabled me to access complete, relevant and audited annual reports of commercial banks signed by their external auditors. The study was concentrated on the financial statements which were all prepared in accordance to the accounting and financial reporting standards enabling comparability among the banks.

3.8 Measurement of Variables.

The study of variables was measured using Value at Risk, Risk Adjusted Return on equity, profitability efficiency and capital adequacy ratios and equations.

Market Risk

The independent variable was market risks such as interest rates, foreign exchange rate, measured and qualified using Value at Risk (VAR) and Risk Adjusted Return on Capital (RAROC). Value at Risk (VAR) was calculated using expected profit/loss from income generating assets less worst – case loss at 99% confidence interval. Risk Adjusted Return on Capital (RAROC) was computed using the Risk Adjusted Return over Risk Adjusted Capital (Crouchy Etal, 2001).

Financial Performance

The dependent variable was financial performance measured using profitability, efficiency and capital adequacy. Profitability was measured using return on equity ratio expressed as earning after tax over equity

Efficiency was measured using efficiency ration expressed in terms of output /input as net interest income plus non – interest income over non – interest expense

Capital adequacy was computed as core capital/risk weighted assets (Bank of Uganda, 2003)

3.9 Data Processing Analysis.

Data collected was analyzed statistically using Microsoft Excel and statistical package for social scientists (SPSS)

The results of the analysis were presented in form of tables, graphs and charts for interpretation. Data used included bank, annual financial reports, Bank of Uganda Orient Bank, annual reports. Microsoft Excel analysis was used to compute the Value at Risk (RAROC) and ratio analysis, which was used to determine the financial performance of banks. That's is profitability efficiency and capital adequacy

Correlation coefficient analysis

Pearson's correlation coefficient was used to measure the strength and direction between the independent (Value at Risk, Expected proof, Risk Adjusted Return and dependent and cost va.riables (profitability, efficiency and capital adequacy.

3.10 Limitations of the study

Availability of data was indeed a big problem, considering the time scope that was stretching 5 years from 2001 – 2005. Availability of data access to resource libraries was not very easy since bank financial information is treated as confidential.

CHAPTER FOUR

4.0 PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS:

4.1 Introduction:

This chapter presents findings in relation to the information extracted from annual financial reports regarding the commercial banks surveyed. The findings are summarized from secondary data, presented in tables, charts and graphs. The relationship between variables was ascertained by correlation and regression analysis. These findings were later interpreted in relation to the research objectives and questions to make useful conclusions.

Sample Features:

The surveyed commercial banks were either international or local. Four banks were contacted.

Table 2: Categories of the banks

Category of bank	Number of banks
Local	2
International	2
Total	4

4.2 MARKET RISK OF COMMERCIAL BANKS.

The market risk, which results from changes in market factors like interest rates, foreign exchange rates, prices of equity instruments and commodity prices, is the potential adverse effect that external market forces could have on the value of the commercial banks' assets. The market risk is measured by value at risk and risk adjusted return on capital. The value at risk was presented in billion of Uganda shillings, risk adjusted return on capital was exhibited in ratio form while the base year of the study was 2001.

VALUE AT RISK

The value at risk was derived from the annual expected profit of the commercial banks at 99%, confidence interval.

The value at risk indicates how much commercial banks best by holding income generating assets like treasury bills or government securities, loans and advances and deposits with other banks or financial institutions. The surveyed banks had different aggregate market risk exposure as shown by the value at risk figures below.

Table 3: Value at risk (VAR) of Commercial banks

	Value at risk of banks(thousands of Uganda shillings)				
Years	2001	2002	2003	2004	2005
Bank					
A	6,397,455	9,756,489	13,921,554	17,869,521	19,654,895
B	3.952.121	3,235,468	6,654,872	6,258,945	6,589,754
C	21,335,689	2,492,598	21,948,975	29,584,587	39,628,915
D	18,963,456	3,190,025	33,569,842	32,568,945	48,568,759

From the table, there was an increase of the actual value at risk for all the surveyed banks; over the years 2001-2005.

The above values at risk were expressed as percentages of the current value of income

	Years				
Banks	**2001**	**2002**	**2003**	**2004**	**2005**
A	21.7	18.1	19.9	16.8	19.7
B	17.2	9.9	12.1	12.9	13.5
C	13.1	8.7	12.2	12.7	12.8
D	9.3	7.6	8.7	10.1	7.9

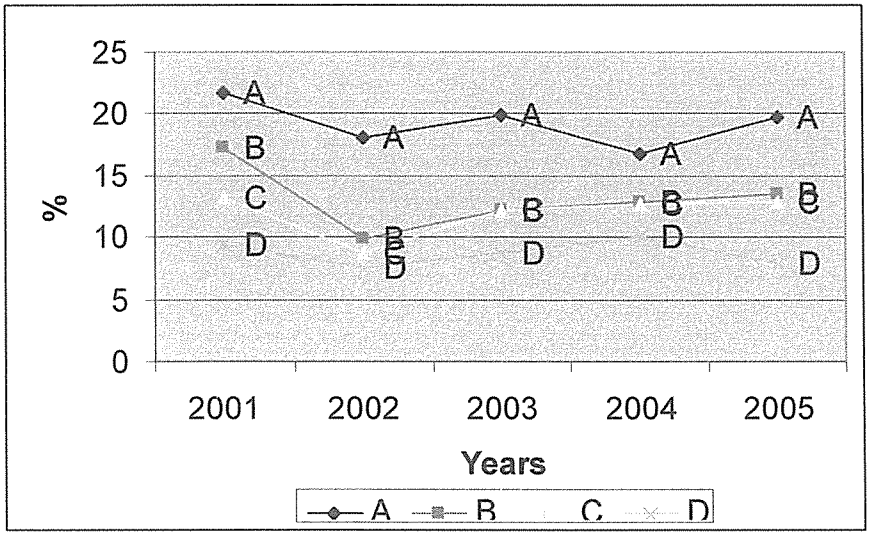
generating asset portfolios. This ascertained the proportion of the income generating assets that are likely to be lost as banks operate in sophisticated market environments as shown below:

Table 4: Value at Risk as % age of current value of Assets (%)

Source: secondary data.

From the table, bank A lost more percentage of the income generating assets compared to other banks. It lost 21.7% in 2001, which reduced to 18.1% in 2002, and finally 19.7 in 2005.Bank D lost 9.3% of its income generating assets in 2001, which increased to 10.1% in 2004, and finally 7.9% in 2005.The local banks A and B lost a higher percentage of their income generating assets compared to the International banks C and D. It can be shown that the local banks were exposed to high value at risk, while the International banks were exposed to low value at risk.

Figure1: Value at Risk of Commercial Banks



Source: secondary data

The figure above shows that there was a general upward trend for banks A, B, C and D. However the value at risk reduced between the years 2001and 2002 , and then increased in the year 2003.The figure further reveals that banks A and B were exposed to more risk than banks C and D. The local banks A and B operate in a market with a common regulatory system and therefore more volatile hence the high value at risk. The International banks C and D managed their risk better than the local banks A and B since their operations are diversified in various markets with different regulatory systems. The banks are likely to incur losses while investing in financial assets because of the volatility in foreign exchange, interest rates, equity prices and prices of commodity instruments.

RISK ADJUSTED RETURN ON CAPITAL:

This provides economic basis to measure the market work by examining how much economic capital is required by the bank to limit the exposure to a specified probability loss and the total return on that capital. The risk based capital strengthens the risk management

discipline by quantifying the level of risk and achieving return commensurate with the risk as shown below.

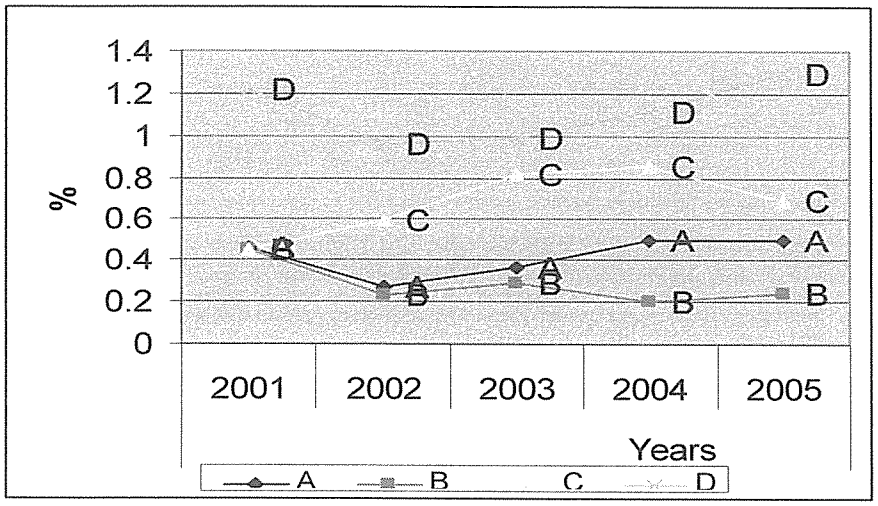
Table 5: Risk Adjusted Return on Capital (RAROC) of Commercial Banks.

	Years				
Banks	**2001**	**2002**	**2003**	**2004**	**2005**
A	0.4568	0.2689	0.3689	0.4998	0.5001
B	0.4468	0.2256	0.2890	0.2015	0.2445
C	0.4536	0.5986	0.8141	0.8577	0.6897
D	1.215	0.9561	0.9888	1.1114	1.2968

Source: Secondary data

From the table above , bank D had the highest return on risk adjusted capital of 1.215 in the year 2001 and 1.2968 in the year 2005.As of bank C , the risk adjusted return on capital was 0.4536 in 2001 but increased in the years to 0.8577 in 2004.It later reduced to 0.6897 in 2005.Bank A's risk adjusted return was 0.4568 in the year 2001 which also reduced to 0.2689 in 2002.This later increased to 0.5001 in 2005.Bank B had the lowest Risk Adjusted Return on Capital of 0.4468 in 2001 which later reduced to 0.2445 in 2005.In a general comparison , banks C and D had high risk adjusted return on capital over the years compared to A and B.

Figure 2: Risk Adjusted Return on capital (RAROC) of commercial Banks.



A general downward trend in risk adjusted return on capital is shown for banks A,B, C and D in the years 2001 to 2005 with an up rise in 2003.Bank D had the highest risk adjusted return on capital across the years, followed by bank C , then A while bank B had the lowest. The International banks C and D had higher risk compared to the local banks A and B. This implies that the international banks had a better return on the risk adjusted capital and more capital to absorb the unexpected losses hence less market risk compared to the local banks which had low risk adjusted return on capital and less capital to absorb the unexpected losses.

4.3 FINANCIAL PERFORMANCE OF COMMERCIAL BANKS

The financial performance of the banks was indicated by profitability, efficiency and capital adequacy values. These were all presented in ratio form and the base year was 2001.

PROFITABILITY:

The commercial bank's profitability is determined by return on equity (share holders investments).

The continued viability and good financial performance of the bank depends on its ability to earn an adequate return on its equity. This was desired from the annual shareholders equity and profit after tax.

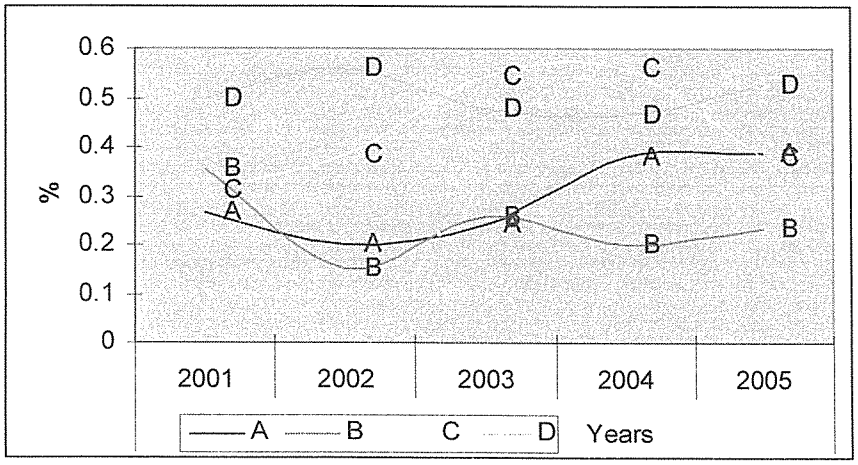
Table 6: Return on equity of commercial banks.

	Years				
Banks	**2001**	**2002**	**2003**	**2004**	**2005**
A	0.2668	0.1989	0.2389	0.3798	0.3891
B	0.3562	0.1490	0.2590	0.2015	0.2345
C	0.3106	0.3841	0.5441	0.5611	0.3812
D	0.4985	0.5583	0.4783	0.4635	0.5245

Source: Secondary data

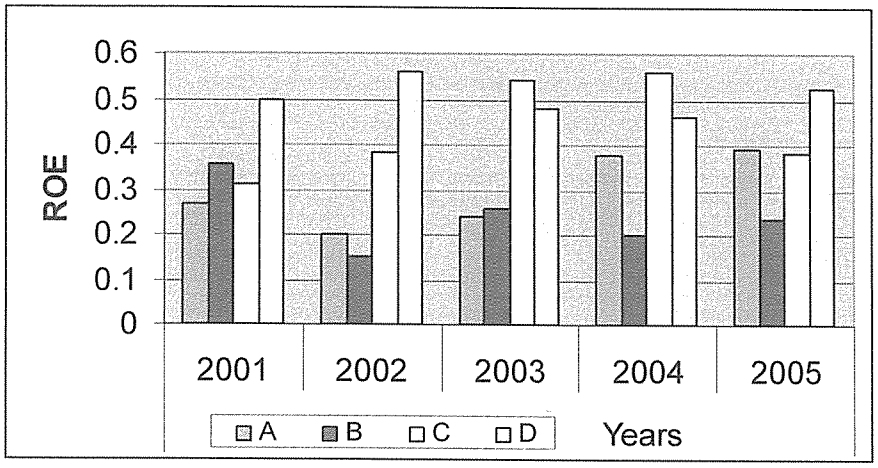
The table above shows that there is a decrease in the Return on Equity of the banks. Bank A had a return of 0.2668 in 2001, reducing in 2002 to 0.1989 and finally increasing to 0.3891 in 2005.Bank B had a return of 0.3562 in 2001, which finally reduced to 0.2345 in the year 2005.Bank C's return, was 0.3106 in 2001, increased to 0.5611 in 2004, which later reduced to 0.3812 in 2005. The return of bank D was 0.4985 in 2001, and later became 0.5245 in 2005.

Figure 3: Return on Equity graph



The profitability of the banks generally had a fluctuating trend. The return on equity was not stable over the years 2001 to 2005.It can be shown that the international banks C and D had more profits because they used the share holders money better to obtain higher returns than the local banks A and B. The high profitability attracts investors.

Figure 4: Return On Equity chart



Comparing the banks, international banks had the highest return on Equity over the years 2001 to 2005.

EFFICIENCY:

Efficiency indicates how the commercial banks utilize their assets to generate income. This was used to measure the output (income) and input (expenses) relationship. This output obtained from managing the banks assets determines the financial performance. The efficiency ratios using annual incomes and expenses are summarized as below:-

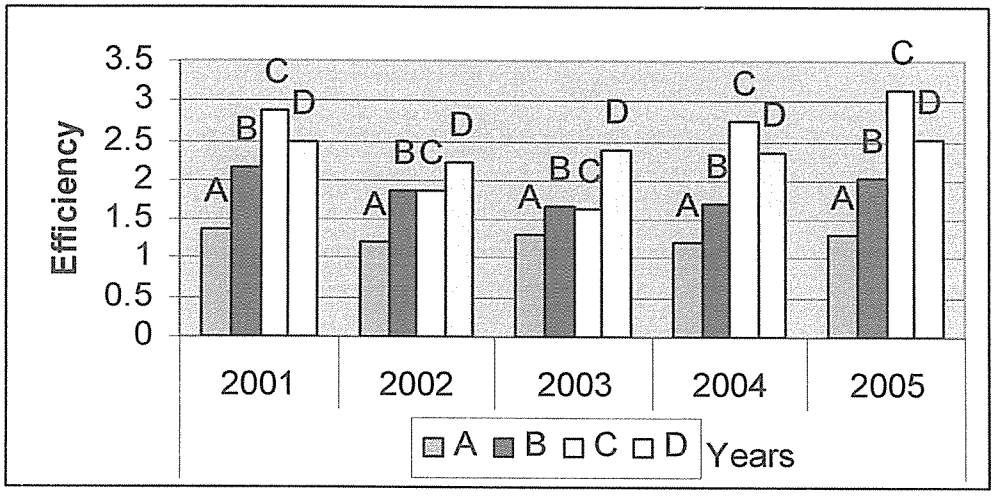
Table 7: Efficiency of Commercial Banks (output/input).

	Years				
Banks	**2001**	**2002**	**2003**	**2004**	**2005**
A	1.3668	1.1989	1.3089	1.2079	1.3191
B	2.1562	1.8490	1.6590	1.6915	2.0345
C	2.8906	1.8541	1.6441	2.7611	3.1381
D	2.4985	2.2383	2.3783	2.3463	2.5245

From the table, it was revealed that Bank C had a high efficiency than the other banks in the year 2001 .In the years 2002 and 2003, bank D was the best performing, and finally again bank C led throughout the years 2004 and 2005.

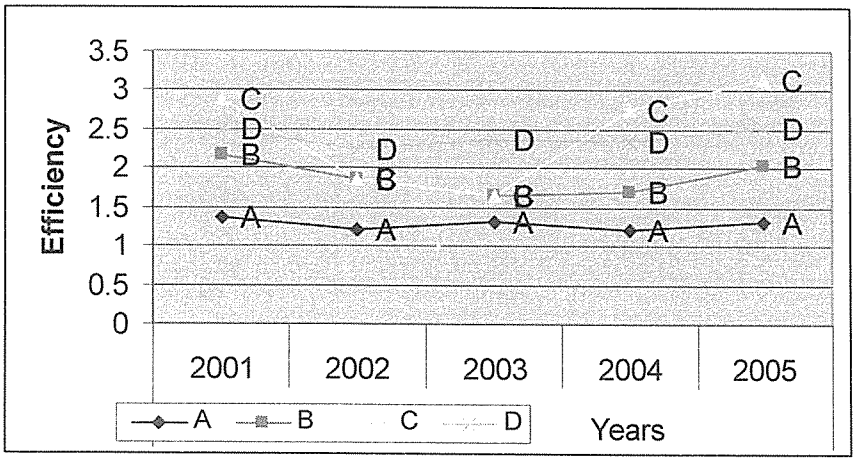
Figure: Efficiency of Banks. Generally, International banks C and D performed better than the local banks A and B.

Figure 5: Efficiency chart.



The chart shows that the international banks were more efficient than the local banks.

Figure 6: Efficiency graph.



There was a general upward trend in the efficiency of the banks across the years 2001 to 2005.

CAPITAL ADEQUACY:

Capital Adequacy was measured in relation to the relative risk weights assigned to different category of assets. The banks should have a minimum capital as required by Bank of Uganda. These ratios help the bank to monitor adequate risk bearing capital that acts as buffer against unexpected losses as summarized below:

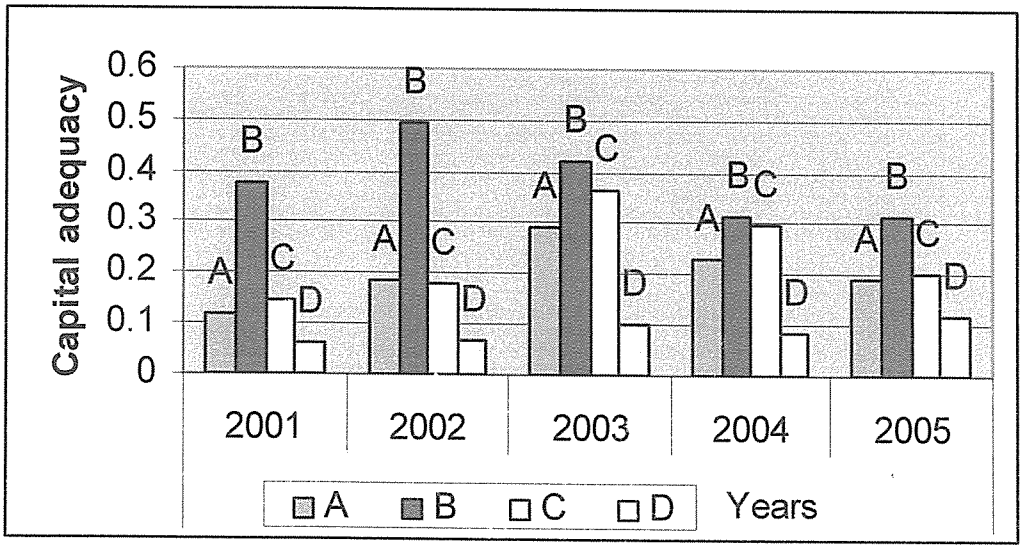
Table 8: Capital adequacy of the Banks

	Years				
Banks	**2001**	**2002**	**2003**	**2004**	**2005**
A	0.1168	0.1875	0.2889	0.2298	0.1901
B	0.3768	0.4956	0.4190	0.3115	0.3145
C	0.1445	0.1786	0.3641	0.2977	0.1997
D	0.0636	0.0661	0.0988	0.0865	0.1152

Source: Secondary data.

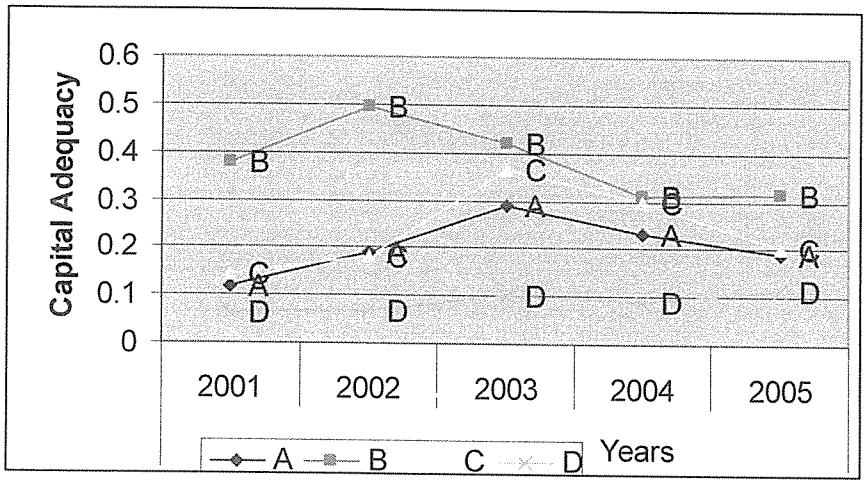
The table above shows that Bank B had the highest capital adequacy in the years 2001 to 2005.This was followed by bank C and A. Bank D had the lowest capital adequacy as shown above.

Figure 7: Capital adequacy of the Banks.



The above figure shows that Bank A had the highest bank adequacy, followed by B, C and finally D.

Figure 8: Capital adequacy of the Banks.



The graph indicates that there was a high upward trend in the capital adequacy for banks A, B, C in the years 2001 and 2002 and a downward trend in the years 2003 to 2005. Bank D had a low upward trend over the years 2001 to 2005. This implies that the commercial banks had the minimum core and supplementary capital. The banks complied the regulatory requirement of the central bank.

4.3 RELATIONSHIP BETWEEN MARKET RISK AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS.

The degree of relationship was determined by Pearson correlation to efficient and the predictability of performance of banks was determined through regression analysis.

The relationship between market risk and financial performance was established by running independent variable against the dependent variable (that is Value at Risk, RAROC represented Risk Adjusted Return on Capital ROG represented Return on Equity. EF represented efficiency and CA represented Capital Adequacy.

The relationship between market risk and financial performance was analyzed and presented at three levels that are banks in general, international and local.

Table 9: Correlation matrix of market risk and financial performance of commercial banks

	VAR	RAROC
ROE	0.7123	0.433
Sig(2 tailed)	0.003	0.047
EF	0.1785	0.999
Sig(2 tailed)	0.453	0.000
CA	-0.398	-0.136
Sig(2 tailed)	0.059	0.566

There was a strong positive significant relationship between the value at risk and the return on equity of the banks. (r= 0.7123, p-value =0.003). This indicates that as market risk increased, profitability increased. Further more the banks had a weak positive relationship between value at risk and efficiency(r=0.1785, p-value =0.453).This means that an increase in market risk made the bank inefficient.

The relationship between risk adjusted return on capital and return on equity was positively significant(r=0.433, p- value =0.047.) .Profitability increased as market risk increased. The significance of the relationship between risk adjusted return on capital and efficiency, r=1.000, shows that efficiency increased as risk adjusted return on capital increased. A weak negative relationship between risk adjusted return on capital and capital adequacy shows that the capital adequacy reduced as risk adjusted return on capital increased.

REGRESSION ANALYSIS:

This revealed the extent to which market risk predicted the financial performance of commercial banks as shown on the table below;

Table 10: Regression of market risk on financial performance of commercial banks

Model	Un standardized Coeff.						
	B	Std Error	Beta	T	Sig	R^2	R^2Adjust
Constant	0.272	0.037		7.393	0.000	0.611	0.345
Market Risk	4.225E-09	0.000	0.639	3.524	0.002		

From the table above, it is shown that market risk predicted 34.5 % of the financial performance of Commercial banks. It was further revealed that a change in value at risk would cause 0.611 changes in financial performance of commercial banks.

T-TESTS

The t-tests were used to compare the differences or variability of value at risk, profitability (Return on Equity). Efficiency, Capital adequacy and Risk Adjusted return on capital in the banking industry.

Table 11: T-test for market risk and financial performance of commercial banks

	T	Df	Sig(2tailed)	Mean Difference
VAR	2.258	19	0.000	2354765
ROE	12.522	19	0.000	0.36154
EF	13.546	19	0.000	1.89967
CA	8.224	19	0.000	0.32452
RAROC	13.443	19	0.000	1.95874

The T-test above shows high significance in difference between financial performance and market risk from one bank to another in the banking industry.

RELATIONSHIP BETWEEN MARKET RISK AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS

There was a negative relationship between market risk and financial performance in banks (local)

Table 12: Correlation of matrix of risk and financial performance in local banks

	VAR	RAROC
ROE Sig(2 tailed)	-0.068 0.794	0.775 0.002
EF Sig(2 tailed)	-0.681 0.042	-0.407 0.241
CA Sig(2 tailed)	-0.563 0.113	-0.592 0.134

The local banks had a weak negative relationship between value at risk and return on equity (r= -0.068, p= 0.794) implying that as local banks took on more risk, their profitability reduced. Value at risk and efficiency had a strong negative significance implying that an increase in market risk led to inefficiency in utilization of the banks assets. Value at risk and capital adequacy had a moderate negative significance, r= 0.563, implying that risk increased as the banks capital adequacy reduced.

Risk adjusted return on capital and return on equity were significant, r= 0.775 implying that as market risk increased, return on equity increased. The relationship between Risk adjusted return on capital and efficiency coupled with capital adequacy was negative; implying that increase in market risk led to the banks' inefficiency and reduced the banks' capital adequacy.

Relationship between market risk and financial performance of international commercial banks

The relationship between market risk and financial performance of international commercial banks was positive and better than the local commercial banks.

Table 13: Correlation matrix of market risk and financial performance of international commercial banks

	VAR	RAROC
ROE	0.342	0.655
Sig(2 tailed)	0.489	0.038
EF	-0.710	-0.046
Sig(2 tailed)	0.008	0.857
CA	-0.054	-0.936
Sig(2 tailed)	0.973	0.000

The relationship between value at risk and return on equity was weak, r= 0.342.p- value =0.489.This means that an increase in market risk slightly reduces the profitability of the international banks.

There was a strong significant relationship between risk adjusted return on capital and return on equity of the International banks(r = 0.655, p- value = 0.038) implying that as market risk increased, the banks' profitability increased. Other relationships were not significant.

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS:

5.1 INTRODUCTION.

In this chapter, the discussion, conclusion and the recommendation arising out of the research findings were presented and areas for further research suggested.

Findings were generated of which are in line with existing Literature and previous research findings.

5.2 DISCUSSION OF FINDINGS:

Reflecting the light of research objectives, the findings were discussed thus:
Regarding the establishment of the market risk in commercial banks using value at risk and risk adjusted return on capital; it was observed that local banks lost more as a percentage of their income generating assets as compared to international banks. There was a general report trend of value at risk for all the commercial banks. These findings are in agreement with Guth and Sepety (2001) who asserted that value at risk measures how much the value of financial assets will drop if affected by market reversal.

They further reveal that international banks had a highest risk adjusted return on capital which local banks had a lower risk adjusted return on capital. There was a downward trend in risk-adjusted return on capital for the international and local banks. Therefore the banks with higher risk adjusted capital were able to absorb the market risk than others. This is in agreement with Guthoff (2000) who argued that risk adjusted capital measures the capital required to absorb the unexpected loss (market risk).

To assess of the degree to which financial performance of the commercial banks, the findings show the general downward frustration in the profitability of the banks. However international banks had higher return on equity as compared to the local banks. The international banks were more profitable than the local banks. These result are supported by Paddy (1996) ascertain that return on equity reveals the relative performance and strength of a fine in attracting investments.

The findings on banks efficiency reveal a decline in retaliation of their assets over the five years. However international banks utilized their resources better than the local banks. The international bank managers had better capacity to efficiently allocate resources, therefore minimized on the subsequent costs.

There was a significant relationship between market risk and financial performance of selected commercial banks;
r = 0.7123 and P – value 0.003. However all the selected banks had a low level of capital to buffer their losses. This is in agreement with Altumbas (2003) who stated that when risks increase, financialists can hedge against this by bond issue to increase its financial leverage. Therefore a higher rate of return will be required by the investors. The findings further revealed that increase in market risk does not improve the banks efficiency and it further reduces the capital adequacy.
Local banks had negative relationship between market risks and financial performance r = -o. 681, P – value = 0.042). The relationship between value at risk and efficiency was strong and negative. There was a decline in the capital adequacy of local banks and therefore not able to absorb its unexpected losses (market risk). The local banks were inefficient and their capital base declined as a result of being exposed to more market risk. As a result of this, potential investors are discouraged and the banks would not absorb their unexpected losses due to the low levels of capital.

The finding goes hand in hand with the analysis by Altunbas et al (2003) that capital levels are inversely related to risks and that efficient banks hold lower levels of capital.

International banks had a more positive relationship between the market risk and financial performance r = 0.342 P value 0.489.

There resulted a strong negative significant relationship between value at risk and efficiency which should inefficiency of management in utilizing resources. This is in agreement with Altunbas (2003) who had a finding that the positive relationship between risks on the level of capital indicates regulations preference for capital as a means of restricting risk-taking

activities. Profitable organization have lower risk which poor strategic risks divert management attention so the retain falls.

5.3 CONCLUSION:

Owing to the findings of the study, it was concluded that, commercial banks in their exposure to the losses due to unstable interest rates and forex rates, operate in very volatile and unfriendly market situation.

The international banks manage their risks better than the local banks that are close to their markets. There is a high likelihood for the banks close to their markets to lose a high proportion of incase generating assets compared to those operating in diversified markets.

Considering the profitability of the commercial banks, there is a tendency to decline, reducing the capital adequacy which leads to incompetence in utilization of their assets. The capital reduces as banks venture in many activities makes them unable to absorb all the losses.

The increase of investments and trading of the banks has not matched with financial performance this reduces the expected return because investments are exposed to volatility in market environment and in the end makes the banks inefficient and lowers their capital.

Stable capital base, better financial performances are essential if the uncertainties of outcomes from banks' investment are to be managed.

5.4 RECOMMENDATIONS:

Owing to the findings of the study, the following are the recommendations.

The banks should measure and quantify their market risk using value at risk and risk adjusted return on capital techniques to ascertain the potential financial loss on and to determine the banks optimal capital structure. This will aid them in comparing different portfolios so as to invest their resources and money efficiently.

The supervisory bodies like the bank of Uganda should ensure that the banks maintain risk adjusted capital that is above their market risk so as to absorb the unexpected losses.

The adverse movements in market variables can be reduced by diversification and yielding enhancing strategies on a risk return basis. Diversification is paramount to achieving risk return efficiency. Return on risk management investments can be optimized by linking risk management investments processes and risk transfer strategies. Management can also improve effectiveness in achieving the organization's risk objectives as well as improve efficiency in terms of achieving those objectives at the lowest cost.

There should be an ability to test stress and identify events or influences that may result into loss that is events that have a negative impact on the bank's capital position will be minimized and the bank will ascertain its capacity to absorb potentially large losses and identify measures to reduce risk and conserve capital.

The banks should develop risk management framework, which clearly specifies the strategies, organization structure, infrastructure and process. This should involve all resource persons including the chief executive officer because the entire organization can collapse if risk management is not done right. The establishment of an integrated risk management framework will enable banks to measure and manage all aspects of risk.

Domestic firms should emphasize the use of currency risk transfer strategies through hedging, insuring, and diversification of foreign exchange risk. These are the most commonly recognized currency risk management strategies

5.5 AREAS FOR FURTHER RESEARCH

More work should be carried out on credit institutions and insurance companies as component of financial institutions.

There is need to look into the credit, liquidity, compliance, reputation, insurance related risks of the different financial institutions.

BIBLIOGRAPHY

Abuka C A. and Sajjahi D.M (1990) "The importance of Domestic and External Factors in the Appreciation of the real exchange Rate in Uganda" Bank of Uganda Internal Research Paper.

Background to the Budget (1999-2005), Ministry of Finance Planning and Economic Development, Uganda.

Bibangambah, J. (1995) "Towards Optimum Utilization of Credit in Uganda" The Ugandan Journal, Volume 3 No.1.

Brownbridge, M. and Harvey, C. (1998) "Banking in Africa: The impact of Financial sector reform since independence", Trenton: Africa world press.

Acharya, V. (2003). Is International Convergence of Capital Adequacy Regulation Desirable? Journal of Finance, Vol LVIII, No.6, 1-5

Bank of Uganda (2001). Annual Report 2002/2003, Kampala.

Bank of Uganda (2002). Annual Report 2004/2005, Kampala.

Bank of Uganda (2004). The Annual Supervision Report, Issue No.5, Kampala.

Bank of Uganda, Quarterly Economic report, Volume 02/2003, Kampala.

Bank of Uganda (2005). Economic and Financial Indicators, Monthly economic Report, Kampala.

Bank of Uganda (2005). The Annual Supervision Report, Bank supervision function, Kampala.

Berlin, M., & Mester, L. J. (1997). On Profitability and Cost of Relationship Lending, Financial Institutions Centre. USA.

Bertrand, R. (2000). Capital Requirements and Bank Behaviour Empirical Evidence for Switzerland, Swiss National Bank.

Blanco, C. (2001). Calculating and using value at Risk, Risk Management Journal, Global Energy Business pages 13-15

Cassidy, C., Gizyeki, & M. (1997). Measuring Traded Market Risk: Value At Risk and Back Testing Techniques.

Chirwa, E.W.T. (2001). Market Structure, Liberalization and Performance in the Malawian Banking Industry, AER Research Paper 108 African Economic Research Consortium, Nairobi.

Clementi, D. (2001). Financial Markets: Implications for Financial Stability Bank of England.

Furness E. L (1975) "Money and credit in Developing Africa" Heinneman Educational Books Ltd

Greuning, H., & Brajovic, S. (2001). Analyzing and Managing Banking Risk, the World Bank Research.

Guthoff, A. (2002). Selling Hurdle Rates for Risk Capital, Karlsruher okanometric – Workshop.

Harrop, D. (1999). Improving Efficiency: The Effect on Community Bank Earning RSM McGladrey, Inc.

Henderson, V. (2002). Stock based Compensation: Firm Specific Risk Efficiency and Incentives. Working Paper Series from Oxford Financial Research Centre.

Hoadley, P. (2004). Value at Risk Excel add in, Options Strategy Analysis tools.

Kasekende L A and Atieng – Ego M (1999) "Impact of Liberalization on Key markets in Sub- Saharan Africa" The case study of Uganda. Unpublished.

Kmenta Jan (1971) "Elements of Econometrics" Macmillan Publishing Company.

Ku, A. (2001). Value at Risk: Variations on the Theme. Risk Management Journal, Global Energy Business, pp 12.

Lindgren, J. Garg A.G and Saal, M. I."Bank soundness and Macro- Economic Policy" IMF staff papers, Washington D.C.

Mester, L. (1993). Efficiency of Banks in the Third Federal Reserve District, Centre for Financial Institutions working paper, University of Pennsylvania.

Morgan, J. P. (1996). Analysis of the concept of VAR and Applications in risk Management, Working Paper.

Ranson, B. (2003). Credit Risk Management – The Thomson Corporation and sheshunoff.

Rees, S. (2000). VAR for Fund Managers. Risk Journal pages 67 – 74.

Reilly, K., & Brown, K. (2003). Investment Analysis and Portfolio Management. (7^{th} ed.), Thomas South Western.

Shadrack, F. C " Resolving Problem Bank Situation – In the Basic elements of Bank Supervision", World Bank , Washington D.C.

Smith, G. (1991). Money, Banking and Financial Intermediation. D.C. Health and Company, Canada.

Stokes, J. R. (2002). Using simulation to determine Bank Capital Adequacy. Financial Engineering News.

Thomson, J. B. (2001). Private Sector Adjustment Factor, Economic Capital and the New Basel Accord. Federal Reserve Bank of Cleveland Working Paper.

http://www.bou.or.ug/BSAnnualReport_1999.