THE EFFECTS OF LIBERALIZING INTEREST RATES ON DEPOSITS AND ADVANCES IN KENYA

By

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DECLARATION

I MULLEI J. M, hereby certify that this Management Project is my original work and has not been submitted for a degree in any other university.

Signed .....

Date 20:10:2008

I OTIENO ODHIAMBO LUTHER, hereby confirm that this Management Project was carried out by the candidate under my supervision.

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DEDICATION

To my beloved brother and country

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LIST OF ABBREVIATIONS:

BLR - Basic Lending Rate

CBK - Central Bank of Kenya

IMF - International Monetary fund

LDCs - Less Developed Countries

DEFINITION OF TERMS

a) **Credit rationing:** Non- price restriction on loans. This takes place when lenders will not make loans to all applicants willing to pay interest rate demanded even though they satisfy all collateral requirements and other tests of credi

b) t worthiness.

c) **Financial Deregulation:** The process which removes regulations which limit activities of financial institutions. Hardwick p. (1994)

d) **Financial Repression:** The imposition of liquidity controls through allocation of loans by administrative means rather than use of market. Financial repression may be adopted through a desire to influence the distribution of investments in the economy or to facilitate extortion by those responsible for allocating funds.

e) **Financial sector:** The part of economy concerned with lending and borrowing. These include, banks, non bank financial institution, e.g. building societies, saving and credit loan associations as well as merchant banks, insurance companies, pension funds and a range of financial managers and advisors

f) **Liberalization:** A program of change in direction moving towards free market economy. This normally includes the removal of direct controls on both internal and external transactions and shift towards relying on the price mechanism to coordinate market activities.

g) **Monetary policy:** A Reserve Banks policy to control the money and influence interest rates and exchange rates.

h) **Regulation:** Direct controls on both internal and external transactions by authorities other than relying on price mechanism in the free market economy.

ABSTRACT

Until June 1991, the government maintained control on interest rates and was instrumental to setting the maximum nominal interest rates on loans and minimum interest rates on savings, mandatory credit ceiling, compulsory reserves requirements for the bank and controls over allocation of credit. The study was geared towards establishing the effects of interest rates on deposits and advances as well as coming up with a trend for interest rates for the period before and after liberalization.

The data was obtained from statistical bulletins published by the CBK for the period 1987-2007. It was subjected to linear and non-linear regression procedures to determine the relationship and effects of deposits, advances and the risk free rate on the deposit and lending rate.

It was established that for both regimes a positive correlation existed between deposits, risk free rate, advances and the deposit and lending interest rates that is as one rises the other rises too. However for the period before liberalization there was a more significant relationship as opposed to the period after.

It was recommended that adopting the regulatory regime in Kenya will have more impact in pursuing the objective of increasing deposits and advances in real terms. This was supported by the strong positive correlation for the period before liberalization.

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1.0 INTRODUCTION

1. 1 BACKGROUND INFORMATION

Before introduction of deregulation in the developing countries most market were controlled and regulated by the government .Prices, interest rates and credit rationing were determined by the regulatory authorities rather than the market forces. The aim of government intervention was to protect customers, ensure financial systems stability and to channel funds to the various priority sectors of the economy such as manufacturing agriculture and small enterprises. This intervention by government is referred to as financial repression.

Mckinnon and show [1973] argue that an economy which is under financial repression regime has its development interfered with. The reason being that financial intermediaries that collect saving do not allocate them efficiently among competing users. Besides the savings 'vehicle' tend to be under developed with return to saving being negative or unstable .Under such systems firms are discouraged from investing because poor financial policies reduce the return on investment or alternatively make them excessively unstable. Consequently rate of capital accumulation is limited as negative real deposit rate and high lending rate adversely affect development hence accumulation of wealth in the financial firm is discouraged . The primary objective of the deregulation process is to improve economic growth through encouraged competitive efficiency in financial market which indirectly benefit non-financial sector of the economy.

Some of the countries which had adopted this approach have raised doubts about the repression hypothesis. Countries such as Argentina, Chile, Uruguay and Indonesia have been cited among failures. Some of the reasons given for those which have failed include [a] chronically unstable macroeconomic condition [b] improper speed and sequence of reform; and [c] high financial deficits.

However, under the conviction of both the theoretical arguments and influence of the rapidly growing economies, many developing countries began to deregulate their financial markets in the 1980s and doing away with these types of controls. Nganda, Situma (1997).

Among the many economic indicators in an economy, interest rates arouse a great deal of public attention. Changes in their general pattern have widespread consequences on individuals, business and governments. Interest rate changes affect individual's decision to save and spend. Business decisions whether to buy equipment or build a new factory depend on the relationship between the rate of interest and expected return on project. Similarly, government's decision about part of its budget deficit to be financed by borrowing is affected by interest rates. Hardwick P. (1994). Interest rates also affect other macroeconomic variables such as exchange rates and inflation.

Despite adopting free interest rates in Kenya, no much benefits have been achieved. The financial costs have remained high while the spread between savings and lending interest rates has widened. Investments have not been stimulated and there still exists high level inefficiency in the allocation of funds. Acute macro economic imbalances have been experienced while banking crises have arisen with deregulation.

Although there are arguments on whether or not banks should be regulated at all, some studies notable by Benston and Kaufman (1994) claim that the economic rationale for bank regulation has not been largely established and that in some cases banking problems have their origin in regulatory rather than market failure. In favor of this argument Llewellyn in a paper presented during the 8th seminar on central banking Washington D.C June 5-8, 2000 observed that regulation should be put in place based on the standing points in two folds:

1. By the nature of their operations, the banks are potentially vulnerable to risks associated with money business and;
2. Bank failure involves at many cases avoidable costs and that banking crisis involves substantial costs to the economy. For instance, in the case of Indonesia, Malaysia and Thailand nonperforming loans recently amounted to around 30 per cent of total assets (IMF – Financial risk, stability and Globalization 2002).

Several banks in Kenya have been put under statutory management by CBK as a result of financial crisis where depositors were unable to obtain their deposits from the banks.

Economic Recovery Strategy for Wealth and Employment Creation Report 2003 claims that the Kenyan economy has continued to perform poorly following deregulation resulting in increased level of poverty and greater disparity in wealth distribution. Kenya's per capita income at liberalization was US$ 271 in 1990 as compared to US$ 239 in 2002. The unemployment level is at the high of 2 million people, 14.6 per cent of labor force. The poverty situation has worsened currently at US$17 and US$ 36 per month in the rural and urban areas respectively. The economy contracted by 0.3 per cent in 2000.

Kenya has had repeatedly unsuccessful trials with direct controls of interest rates and other instruments in its monetary policy programs. The famous Donde Bill (2002) aimed at restricting interest rates charged by banks had its legality challenged in a court of law and never became law. The Banking Act (2000) introduced nominal lending rates to be pegged on the TB rates but no limits were set hence this has not been of any benefit to the borrowers as these rates are different from the real rates of interest charged by banks on loans granted. CBK introduced disclosure requirement for all banks to submit details of interest rates on monthly basis to create public awareness but this yielded less benefits to the depositors and borrowers thus creating the necessity for study. The only control was through the Finance Bill 2004 which requires that interest amount on loan should not exceed 100 percent of the loan amount. This brings doubt as to whether deregulating the financial sector has achieved the objectives of economic development.

1. 2 STATEMENT OF THE PROBLEM

Experiences of financial crises in the 1990's have reinforced the view that in the design and implementation of policies for effective macro economic management, it is imperative to pay serious attention to risk, efficiency and governance in financial systems and markets.

Financial reforms within the banking sector in Kenya resulted to deregulation of the sector. This has been followed by negative outcomes on the economy such as high interest rates and general corporate failure among other things.

The existence of high interest rates acts as an obstacle to growth of both public and private sector as a result of high cost of funds and low return on financial investments. A low interest regime is therefore essential for encouraging private investments in agriculture, industries and building and constructions to create employment thus sustain growth and development.

The repressionist hypothesis put forward by McKinnon and Show (1973) appears to have a pronounced negative effect in Kenya. With deregulation, interest rates on loans have been high while those on savings have been low with the spread between the two widening hence working as an obstacle to economic development. Central bank (2002) asserts that large quantities of non-performing loans have been reported by banks for loans granted during the high interest rates regime while corporate borrowers have been in straining financial conditions. This casts doubt as to whether economic development can be achieved without banks being regulated.

A study carried out by Kilonzo (2002) to establish the effects of changes in the interest rates on credit granted by commercial banks pointed out that interest rates have a weak relationship with credit level. However the study covered only a period of five years within the post liberalization period which was not sufficient to come up with a trend for Kenyan interest rates and he also failed to address the changes in interest rates on deposits held by commercial banks. In addition he did not compare

the changes in amounts deposited and advanced given the prevailing interest rates before and after the liberalization period.

This study endeavors to determine the relationship between interest rates on deposits and advances with the amounts deposited and advanced respectively, thus come up with a trend for Kenyan interest rates on deposits and advances and finally compare the two interest rate regimes which shall assist in recommending the appropriate regime for the Kenyan setting given the variations in amounts deposited and advanced as explained by the changes in interest rates.

1. 3 RESEARCH OBJECTIVES

1. To construct a trend of interest rates for banks after deregulation.

2. To establish the effects of interest rate deregulation on deposits and advances.

1. 4 RESEARCH QUESTION

The study will address the question as to whether deregulation of the financial sector has achieved the objective of economic development or not and pose challenge of an incentive structure for all stake holders to assume their respective roles on an ongoing basis as opposed to acting only in the time of crisis. The hypothesis whether interest on savings and loans are closely related will be tested.

1. 5 SIGNIFICANCE OF THE STUDY.

To Banks: The findings will be useful to banks policy makers in understanding the effects of high interest rates on the quality of loan portfolio and financial market stability.

To Researchers and academicians: The study will help them understand the nature of financial markets and for future reference guide for further research work.

To policy makers in government, Central Bank and supervisor agents: They will understand their roles with a multidimensional approach involving macro policy, the creation to appropriate incentive structures, the development of market discipline and internal governance and management of financial institutions.

The borrowers: The borrowers will be able to understand the trend of interest rates hence evaluate the viability of their projects with the trend in mind

To Society: The society will be able to understand the relationship between cost of funds their effects on demand and consequently job creation.

1. 6 SCOPE OF THE STUDY

The study will establish relationship between savings and lending interests rates and effects of interest rates on financial performance. Quality of loan portfolio of banks as well as their clients after repression

CHAPTER 2

2.0 LITERATURE REVIEW

2.1 Regulation

The concepts of regulatory regime are wider than the prevailing set of prudential and conduct of business rules established by the regulatory agencies. External regulation has a positive role in fostering a safe and sound financial system and customer protection. However, this role while important is limited and insufficient in itself. Equally of increasingly importance are other components of regime and most essentially the incentive structures faced by financial firms, and the efficiency of the necessary monitoring and supervision by official agencies and the market.

There are several reasons, why emphasis is given to the overall regulatory regime rather than myopically to regulations:

1. Prescriptive regulation is not invariably effective in achieving the twin components of financial stability reduce possibility of bank failures and the cost of those that do occur;
2. Regulation may not be the most effective way to secure those objectives:
3. Regulation itself is costly both in terms of its direct costs and unwarranted distortions that may arise when regulation is inefficiently constructed;
4. Regulations may not be the most efficient mechanism for achieving financial stability objectives in that alterative routes may achieve the same degree of efficiencies at lower cost;
5. Regulation tends to be inflexible and insufficiently differentiated;
6. There are always potential dangers arising from monopolistic regulator;
7. Regulation may impair effectiveness and efficiency of other mechanisms for achieving the objective of financial stability. (David T. Llewellyn)

A maintained theme is that a regulatory regime needs to be viewed more widely than externally imposed regulation on financial institutions. In the current conditions it would be mistake to rely wholly or even predominantly on external regulation,

monitoring, and supervision by "official sector". The world of banking is too complex and volatile to warrant dependence on a simple set of prescriptive rules for prudent behavior. The central role of incentive structures is constantly emphasized. There are many reasons (Market imperfection and failures, externalities, "gridlock" problems and moral hazards associated with safety net arrangements) why incentive structures within financial firms may not be aligned with regulatory objective. (Llewellyn 1999)

This means that the central considcration for regulator is the impacts its own rules have on regulated firms incentive structures whether they might have perverse effects and what regulation can do to improve incentives. Incentive structures need to be at the center of all aspects of regulation because if they are wrong, it is unlikely that the other mechanisms in the regime will achieve the regulatory objectives. It is necessary to consider not only how the various components of regime impact directly on regulatory objectives, but also how they operate indirectly through their impact on the incentives of regulated firms and others. The inventive structures are the heart of the regulatory process.

While regulation may be viewed as a response to market failure, weak market discipline and inadequate corporate government arrangements, causation may also operate in the other directions with the regulation weakening those other mechanisms. As explained by Simpson (2000) "in a market which is heavily regulated for internal standards of integrity, the incentives to fair dealing diminishes. Within the company culture, such norms of fair dealing as " the way we do things around here' would eventually he replaced by ' it's OK if we can get away with it ". In other words, an excessive reliance on detailed and prescriptive rules may weaken incentive structures and market discipline.

An empirical study of regulation in United States by Billet Giarfinkel and O'Neal (1998) suggests that some type of regulations may undermine market discipline. They examined the cost of market discipline and regulation and show that as bank risk increases, the cost of uninsured deposits rises and banks switch to insured deposits. This is because changes in regulatory costs are less sensitive to changes in risk than are in market costs. They also show that when rating agencies down-grade a bank, the bank tends to increase the use of insured deposits. The authors conclude that desperate costs of insured

deposits and uninsured liabilities combined with the ability and willingness of banks to alter their exposures to each challenge the notion that market discipline can be an effective deterrent against risk taking".

The public policy objective is to optimize the outcome of regulatory strategy in terms of mixing the components which are:

- The rule established by regulatory agencies.
- Monitoring and supervising of official agencies.
- The incentive structures faced by regulatory agencies, consumers, and especially banks
- The role market discipline and monitoring.
- Intervention arrangements in the event of compliance failure.
- Role of internal corporate governance arrangements within the financial firms.
- The disciplinary and accountability arrangements applied to the regulatory agencies.

The optimum mix of the component of the regime changes overtime as market conditions and compliance culture change. It is argued that in current conditions there is need to shift within regimes in 3 dimensions:

- Less reliance placed on detailed prescriptive rules; more emphasis given to official supervisions:
- Greater focus to an incentive structure:
- Enhanced and strengthened role of market discipline and monitoring governance arrangement within banks.

(IMF - Risk, stability, and Globalization edited by Omotude E. G. Johnson 2002).

2.3 THEORITICAL AND CONCEPTUAL FRAMEWORK

2.3 Regulatory Regime and Strategy

An important general concern of public policy is having in place an appropriate regulatory regime and consistent regulatory strategy to promote safety, efficiency and stability in financial system. Such a regime, among other things will balance regulatory rules, supervisory review and market discipline. Market discipline is an important aspect in the financial systems and entails upholding of ethical and fair market practices considering all the players in the economy. (IMF - 8th Seminar on central banking 2002). A paper presented by Llewellyn (2002) in the seminar with respect to incentive structures, he argues that a central role of regulation is to create an appropriate incentive within regulated firms so that the incentives faced by decision makers are consistent with financial stability.

At the same time the regulation should refrain from blunting the incentives of other agents (such as rating agencies, depositors, shareholder, debt holders and government planners), that have a disciplining role vis-a-vis banks.

However, an important theme of Llewellyn is that regulations can never be an alternative to market discipline. On the contrary, regulations need to reinforce not replace market discipline within the regime.

On the question of intervention by regulatory agencies in the event of either some form of compliance failure within the regulated firm, or when financial distress occur within banks, he argues in favor of a rule based approach to intervention rather than discretion (within the specific rules and criteria). As Llewellyn (2002) argues in his paper, the market discipline works electively only on the basis of full and accurate information disclosure and transparency all adding up to market efficiency. In addition, one could probably posit that the more sophisticated the pool of those who could monitor the management of the bank, and other financial institutions, the more one could expect the forces of market discipline to be.

As reinforced in Edward J. Kanes (1999) paper, participants agreed that regulators must be made accountable so that their decisions truly reflect the public interest. In the end participants agreed with Llewellyn that the relative weights will indeed vary from one country to another, depending on the circumstances. Some of the determining factors are the availability of expertise within banks, within regulatory agencies and the nature of risk faced by the banking system, and the relative efficiency of domestic market. (IMF-Financial. Risk, Stability and Globalization 2002 Report).

2.3.1 Theories of Interest Rates

A lot of literature has evolved through time on factors that influence interest rates. Various theories of interest put together explain or provide variables which determine their levels. The theories differ due to differences in opinion as to whether interest rates are monetary or real phenomena. These theories include the classical (traditional) theory of interest, the Keynesian liquidity preference theory of interest, the loanable funds theory of interest, the neo-classical theory of Pigou, the Hicksian IS-LM model and finally the monetarist framework of Friedman.

Traditional theory defines interest rate as the price of saving determined by demand and supply of loanable funds, with the assumption of existence of capital market. It is the rate at which savings are equal to investments. According to loanable funds theory, no role is assigned to the quantity of money, the level of savings or institutional factors like government and central bank (Gardener. Mills and Cooperman 2000). According to the. traditional theory, nominal interest rates adjust fully to expected rate of inflation leaving the real interest rate unaffected. According to the work of Irving Fisher (1901), there is a positive relationship between expected future

price increases and nominal interest rates. To him an increase in price increases the nominal value of trade resulting to an increase in demand for money lending hence nominal interest rates Studies estimated the magnitude of the Fisher effect and found that it was less than one suggesting that nominal interest rates are extremely slow to adjust to inflation such that there is a tendency for inflationary rate to expand the gap between nominal and real interest rate Tobin (1965) modified Fishers conclusion arguing that inflation reduces the demand for money balances, lowering the real rate of return such that the real rate of interest rises by less than the inflation. However, this rate has been subjected to a lot of criticism by the Keynesian on the ground that it is indeterminate since no solution is possible as the position of the savings schedule will vary with the level of income. As savings increases the savings schedule in turn shifts to the right hence one can not know what rate of interest will be unless we already know the income level Hardwick (1986)

According to the classical theory as enumerated by Marshall and Pigou, the rate of interest is determined by the supply and demand of capital. The supply of capital is governed by the time preference while demand for capital is by the expected productivity of capital. Both the preference and productivity of capital depend upon waiting or saving. The theory is therefore known as *Supply and demand theory of waiting or saving* Whilst the demand for capital is inversely related to the rate of interest, the supply of capital depend upon the savings rather than upon the will to save of the community. The rate of interest is therefore determined by the intersection of demand curve and the supply curve of capital. Shapiro (1992).

The classical theory neglects monetary factors in the determination of interest rate. It is a pure or real theory of interest which takes into consideration the real factors like the time preference and marginal productivity of capital. This theory is also indeterminate since savings depend upon the level of income; it is not possible to know the rate of interest unless the level of income is known before hand; the level of income can not be known without already knowing the rate of interest. This theory also neglects the effect of investment on the level of income. A rise in the rate of interest, for instance will bring about a decline in investment by making it less profitable and decrease in credit granted by commercial banks (Shapiro 1992. Sodersten1980)

The implication of the above analysis is that an increase in money supply results in a fall in interest rate. Given a zero elasticity of real interest rate to money, changes in nominal rate of interest are translated to changes in real rate of interest.

The Keynesian liquidity preference theory of interest rate by John Maynard Keynes postulates that the rate of interest is determined by the intersection of the supply- schedule of money and the demand- schedule for money (Liquidity preference schedule). Thus the theory explains that the rate of interest is determined at the point where the liquidity preference curve equals the supply of money curve. If money supply is increased by the monetary authorities but the liquidity preference remains constant the interest rate will fall. However, if the demand for money increases and the liquidity preference curve shifts upwards, given the supply of money, the rate of interest rises. The Keynesian theory has been criticized on the ground that it is indeterminate. Keynes asserts that the liquidity preference and quantity of money determine the rate of

interest. But this is incorrect since liquidity preference schedule will shift as income level changes. Thus unless the income level is already known, the demand and supply curve can not tell us what the rate of interest will be. Besides, the theory treats the interest rate as purely monetary phenomenon and by neglecting the real factor, make the theory narrow and unrealistic. (Shapiro 1992, Hardwick 1986).

The neo-classical or loanable funds theory explains the determination of interest rates in terms of demand and supply of loanable funds or credit. Expounded theory by Wicksell (1831-1926) and elaborated Robertson (1959), Pigou (1943) and other neo-classical economists. According to the neo-classical theory of Pigou, interest rate is determined by the intersection of demand schedule for money with the supply- schedule for savings, with the relevant supply-schedule conceived in terms of savings and current income. To the neo-classical, interest is the price of credit which is determined by the demand for loanable funds. The central proposition of the neo-classical theory is that interest is the reward for waiting. Such waiting involves the postponement of current consumption to some future date.Thus the longer the waiting period the higher the rate of interest.

Demand for loanable funds has 3 sources: government, businesses and consumers who need them for purposes of investment, hoarding. and consumption. More funds are borrowed at a lower rate of interest than at a higher rate. Supply of loanable funds on the other hand comes from savings, dishoarding and bank credit. In this theory savings are seen as providing the supply of loanable funds and releasing resources from the production as current consumer goods into the production of capital goods. Investment on the

other hand is seen as providing the demand for loanable funds. The higher the rate of interest, the more willing households and individuals will be to save so sacrifice some present consumption for (uncertain) future consumption. (Shapiro 1992: Situma 1997: Hardwick. 1986).

The neo-classical theory ignores the possibility that savers may have a given purpose for which they save for instance to buy a house In such cases the higher interest rate may actually reduce savers willingness to save because rising interest rates may actually raise real income and so reduce the amount of saving necessary for a given purpose. This theory has also been criticized for combining monetary factors (e.g. bank credit, hoarding) with real factors (e.g. savings, investments) without bringing changes in the level of income. This makes the theory unrealistic. A basic conclusion of the neo-classical is that falling interest rates will induce greater investment to take place. Thus income, consumption and savings all apply to the same period. In this pigouvian theory, saving is in effect the same .thing as loanable funds hence same criticism applies to them. Shapiro (1992).

The Hicksian IS-LM Framework is a theory advanced by J. R. Hicks (1946) who combined the neo-classical and Keynesian formulations. Hicks utilized the Keynesian tools in a method of presentation which show that productivity thrift, liquidity preference and money supply are all necessary elements in a comprehensive and determinate interest theory. Thus modern theory of interest, savings, investments, liquidity preference and quantity of money are integrated at various levels of income for a synthesis of loanable funds theory with the liquidity preference theory. Given the quantity of money and the

family of liquidity preference curve (Keynesian formulation of liquidity preference schedule), LM Curve relates different income levels to various rates of interest but it does not show what the rate of interest will be, given the investment-demand schedule and the family of savings-schedule (neo-classical formulation), IS-curve shows what various levels of income will be at different rates of interest. Interest rates and income are determined at the intersection of the two curves such that the investment and savings are in equilibrium as well as demand and supply of money. (Shaprio 1992; Jhingen 1992).

To the monetarists, led by Professor Milton Friedman (1956) interest rate is not only determined by money supply and demand but also by price expectation factors. Thus, according to them an increase in money stock will have three major effects: initially the interest rate falls (liquidity effect). Due to increase in liquidity position, people will increase their demand in the market leading to an expansion of economy (income effect). This in turn puts upward pressure on goods and services causing prices to rise. As price continues to rise (due to expectation effect) people will build up an inflationary psychology whereby they expect more inflationary effect in the future. On the one hand, the suppliers will expand their investment outlay to supply more with financial institutions increasing interest rates on their liability. On the other hand, consumers want to spend more as they expect prices to rise in the future, hence for durable material they would demand more credit causing an increase in interest rates

The central bank statistical sources and methods claim that a representative deposit and lending rate for all the banks is compiled where:

1. Weighted deposit rate(for a particular maturity) is the sum of individual bank's weighted deposit rates for example considering deposits of 0-3 months maturity where **d** is the banks total deposits and **D** is the total deposits for all the banks for which a rate of 0-3 months deposits has been reported. If **r** is the nominal rate the bank is offering then the banks weighted rate **R= d/D*r**. The sum of R for all the banks is the weighted interest rate for deposits of 0-3 months maturity.

2. Weighted lending rate (for a particular maturity) is the sum of individual bank's weighted lending rates. Computation of weighted lending rate is similar to the computation shown above for deposit rates. In this case total loans and advances are used in place of deposits.

2.3.2 Understanding Interest Rates

The importance of understanding interest rates is stressed partly from the point of view of public policy. Monetary policy is one of the two major instruments whereby the government seeks to steer a course between unemployment and inflation by means that avoid detailed and direct economic controls. How to use this instrument and how far it may be necessary to rely on other governmental powers, are problems that require an understanding of interest rates, subsequently is the continuous need for better information and analysis if business and financial community is to form judgment about prospects for future interest rate movements on the wide variety of financial assets now in use. Conard (1966).

In economic theory the cost of capital has an important influence on decision to invest and therefore business cycle. Increases in capital cost may curtail investment undertakings thus contributing a down turn in aggregate activity and conversely for decreases. Since the rate of interest is a major item in the capital costs, empirical studies have looked for rate effects on investments decisions and expenditures.

Short-term rates are supposed to influence inventory investment and trade, while long-term rates influence plans for plant equipment installation and for residential housing. Since a reduced cost of borrowed funds would make it profitable to undertake capital outlay that would have been impossible if the funds had been borrowed at higher interest rates, interest rates have a greater impact on investment levels as well as profitability and growth. Ludwin Von Mises (1964)

Interest Rate Deregulation

Kenya like many developing countries followed a policy of low interest rates until July 1991 when interest rates were fully liberalized. The CBK Economic report (July 1992) claims the prime objective of liberalizing interest rates was to ensure that both deposit and lending rates remained positive in real terms. Before June 1991 interest rates remained under the administration of government through a regime of fixing a minimum savings rates for all deposit taking institutions, and maximum lending rates for all commercial banks, non-bank financial institutions and building societies. The main aim of controlling interest rates were to keep the cost of funds low, with the

belief that cheap credit promoted development through increased investments Thus the use of monetary conditions to mobilize and allocate financial resources in an efficient manner was neglected.

Caprio (1994) argues that deregulation of financial sector can be expected to have a number of beneficial outcomes on the economy namely:

1. Liberalization results in positive real rates which can be expected to raise savings, thereby increasing funds that may be borrowed for investment purposes:
2. Market determined rates lead to better allocation of funds;
3. Deregulation results in financial deepening as people increase deposits in response to positive real deposit rates:
4. There is a positive relationship between degree of financial development and economic development.
5. Financial deepening encourages inflow of foreign capital reserves domestically which augments domestically available resources and may permit more efficient use of such resources in a deregulated financial environment

2.3.4 Money and Banking in Less Developed Countries

The stock of money has a relatively narrow base in less developed countries (LDCs) as it consists mainly of banking notes and coins in circulation. In these countries, habits of payment by cheque are still in their infancy so that bank deposits constitute a relatively small proportion of money supply. As a result, the volume of bank deposits has a minor influence on general price levels and total expenditure. The scope of monetary policy measures (such as deposit rates, open-market operations and changes in reserves requirements) in regulating expenditure is therefore limited. Hardwick (1994).

2.3.5 The Financial Systems in Kenya

The financial systems in Kenya comprises of forex bureaus, commercial banks, non-banks financial institutions and mortgage companies which are regulated by the CBK. Other institutions e.g. SACCOs. MFIs provide financial services to the informal sector.

The Central Bank regulates the banking system whose principal objectives are; to formulate and implement policies directed towards achieving and maintaining stability in general price levels and foster liquidity, solvency and proper functioning of stable market based financial system. The bank's secondary objectives include : to formulate and implement foreign exchange policies; to hold and manage foreign exchange reserves; to license and supervise authorized dealers in the money market; to promote smooth operation of payments; clearing and settlement systems; to acts as banker to the government and issue currency notes and coins. (CBK 1997, 1998, 2000).

2.3.6 Bank Lending

A commercial bank in an institution which accepts deposits from public and in turn advance loans by creating credit. It is different from other financial institutions in that non-bank financial institutions can not create credit though they can be accepting deposits and making advances.

The functions of commercial banks include; accepting deposits, advancing loan, credit creation, financing foreign trade, and agency services. Credit creation is one of the most important functions of commercial banks. Like other businesses, they aim at earning profits. Hence for this purpose, they accept deposits advance loans and keep small cash reserve for day-to-day transactions (Jhingen (1992). Under section 19 of the Banking Act an institution shall maintain such minimum hold of liquid assets as the CBK may from time to time determine.

There are other variables which affect the amount of credit advanced by commercial banks, besides real interest rate. The variables include political instability, level of infrastructural development, investor confidence, general economic environment, stringent collateral requirements, direct control, regulator requirements and statutory liquidity among others. (Njuguna. 1497, Nganda 1997).

2. 4 PAST STUDIES

2.4.1 Interest Rates Control

A group of Oxford economists undertook an empirical study on interest rates and the broad result of this study was that the firms questioned, maintained that the interest rates charged by banks, within limits of practical importance, did not appreciably affect the action of the firms or the demand for credit. In a survey of 135, banks 85 per cent of banks in Denmark in 1948, on question of whether they thought bank credit would be affected by change in interest rates when the within limits of 4 - 8 per cent were usual for all banks.

Majority did not think that within this range it had any effect on demand at rate 4-6 per cent increase but at increase of 6 - 8 per cent, they concluded , that it may have some effect. They concluded that the changes may have some effects in all cases though only a limited effect. On the question of what banks would do to react against the liquidity reduction, no bank had an answer like raise interest rates to reduce demand but answered that they , would stop giving new loans, then ration loans to old customers, sale of securities and finally borrow from central bank in that sequence.

A question on whether loans and advances would have been larger in absence of compulsory reserves requirement in 1942, 73 of 135 bank representing 20 per cent of total assets gave a negative answer without comment, 35 gave a negative answer and commented. 21 said they had satisfied every demand while 11 banks representing 45 per cent of total assets were of the opinion that no effect until after the war.

The conclusions of Oxford study were that:

1. The market for bank credit does not behave like free market commodity.
2. Within wide limits the demand for such credit is practically independent of the interest rates charged by banks.
3. The banks established a certain minimum standard of soundness, which they maintain no matter how large their liquidity and at which they extend credit.

4. Contraction of credit is not affected by interest rates but by rationing of credit to customers.

This implies that there is only slight connection between demand for bank credit and interest rates. It is true that the effect of interest rates may be neutralized by fiscal policy or direct intervention by the authorities, but what matters here is that the rate of interest in the capital market may be a powerful instrument for controlling total demand for goods and services through its effect on demand for funds for long-term investments.

It is necessary to impose some form of control to restrict upon the banks in order to prevent them from extending the issues of fiduciary media in such away to cause a rise in price that eventually culminates in an economic crisis. Due to high demand for finances the financial institutions are left to dictate the interest rates hence interests' are not controlled by market forces. They issue credit through rationing as money is not enough for the borrowers. Pedersen (1975).

2.4.2 Financial Reforms in Malaysia

According to Zainal Aznam Yusuf, Awany Adek Hussin. Ismail Alowi, Lin Chee Singh, and Sukhdave Singh(1994) the major phase of financial reforms in Malaysia came in October 1978 when interest rates were liberalized. The central bank freed the interest rates of commercial banks allowing them to determine the rates to the borrowers. Subsequently, rates tended to behave in an asymmetrical manner. When the cost of fund rose, bankers immediately passed it to their customers in higher lending rates but when the cost of funds declined, the lending rate moved downwards only with a prolonged lag and when the banks did low lending they were not evenly applied to all borrowers. As a result the central bank introduced basic lending rate (BLR) on November 1, 1983. Every bank's or financial company's lending (except those charged to the priority sector) were anchored to its declared BLR which was based on the cost of funds, after providing for the cost of statutory reserves, liquid assets requirements and overheads. As the actual cost of credit to borrowers was

determined by BLR and an interest margin based on borrowers credit standing, it was intended to remove much of bank's discretion on which its borrowers benefited or were penalized whenever interest rates charged.

On September 1, 1987, the central bank required the BLR of commercial banks to be not more then 0.5 per cent points above BLR of the 2 lead banks. The margin by which lending could exceed the BLR was limited to 4 per cent point, depending on the credit standing of borrower. On February I, 1991, the BLR was finally freed from administrative control of the central bank and interest rate determination left the market forces.

The ratio of bank credit to gross domestic product in Malaysia has been increasing over the past 30 years importance of increase in banks credit for financing economic activities and coinciding with the rapid liberalization of the banking systems, the development of secondary markets for government securities, and private securities in Malaysia.

2.4.3 Kenyan Study on Interest Rates

Empirically, not much has been done on interest rates in Kenya. According to the recent studies by Ngugi (1998) and Kabubo (1998), whose objectives were; to explore the process of financial sector reforms, investigate the structure of interest rates and their determination across institutions and to examine the factors that have influenced the determination of interest in the post liberalization period, they modeled and estimated an interest rate model for Kenya by adopting Edwards and Khan semi-open economy interest rate model. Using the monthly data for period between July 1991 and August 1996, they established time series characteristics of models as well as conducting diagnostic tests and stability analysis to establish the goodness of fit of the model and constancy of the regression within the period of estimation. According to Ngugi (1998) and Kabubo (1998), interest rates are influenced by inflationary conditions, open market factors including foreign interest rates and expected depreciation of local currency, monetary conditions and output levels.

Ngugi (1998) and Kabubo (1998) concluded that both inflationary conditions and monetary shocks influence interest rates in a positive and significant way. From the

treasury bill rate model, the rate of open market economy factors take the expected positive sign but is insignificant. However, deposit rate model indicate some significant degree of integration of the domestic money market with the foreign market. Diagnostic tests indicate data coherence with white noise error term while the stability analysis proved that the model did not at one time fail to explain the variation of interest rates.

Kilonzo (2002) in the study to establish the effects of changes in the interest rates on credit granted by commercial banks observed that interest rates have a weak relationship with credit level and concluded that there were more important elements that determine level of credit other than interest rates.

Interest rates depend on various variables. These are money demand and supply, risk free rate, risk premium on investments, exchange rates and other situational factors. The traditional relationship for determining interest rates can be assumed to be linear and can be summarized as follows

Ri = X1 + X2 + X3 + X4+ X5 + X6

Where: Ri = Interest Rate

X1 = Money Demand

X2 = Money Supply

X3 = Risk Free Rate

X4 = Risk Premium On Investment

X5 = Exchange Rate

X_6 =- Situational Factors

2.5 CRITICAL REVIEW OF MAJOR ISSUES

2.5.1 Trends of Interest Rates in Kenya

According to Musoke and Kagane (1990), since the early 1980s, interest rate policy in Kenya has had three principal objectives: to keep the general level of interest rates positive in real terms in order to encourage savings and the maintenance of financial stability; to allow greater flexible and encourage greater competition among banks and non-banks financial institutions so as to enhance efficient allocation of financial resources. In particular, interest rate policy strive to ensure that funds flow into the areas which are most productive and that biases against long-term lending and lending to small businesses are eliminated and to reduce the differential in relation to maximum lending rates for banks and non-banks financial institutions.

After independence in 1963, the interest rates were relatively stable in Kenya with the inflation rate averaging 2 per cent and therefore ensuring positive real rate of return on financial assets. However, with the onset of 1973/1974 oil crises, Kenya experienced a sharp deterioration in the balance of payment and sharp increase in inflation to the rate far above the prevailing levels of statutory interest rates. This necessitated upward adjustment in those rates. The change in the government policy with respect to interest rates also reflected the recognition that low interest rates were causing distortion in the economy. On the one hand, the low interest rate acted as a disincentive to savings and

on the other hand, they resulted in discrimination against investments with high rate of return in so far as low productivity investments were able to compete for access to some of available credit. (CBK 1992: Musoke 1990; Kagane 1990) Commercial bank lending and savings deposit rates were first adjusted in June 1974 and then again in 1980. Since then, they were adjusted frequently particularly to take in account the movements in domestic prices. The frequent adjustments introduced some flexibility into interest rate structures. In February 1974, banks were required to give preference in their lending to agriculture, manufacturing, export business, tourism, and small African enterprise. In mid 1974, the interest rate structure was changed with the minimum savings deposit rates being raised from 3-5 per cent and prime lending rate from 7-8 per cent. At the same time, lending rates were

permitted rise to an effective rate of 10 per cent, but lending rates which were more than 10 per cent were frozen. In 1976, interest rates were reviewed upwards. The base lending rate of 8 per cent was abolished and maximum lending rates for loans with maturity of less than 3 years was set at 9 per cent. Further measures were introduced in April 1977 to increase credit expansion so as to facilitate growth in production, agriculture, manufacturing, and tourism sectors of the economy.

Foreign companies operating in those sectors, whose borrowing was restricted at the time between 20 - 60 per cent of investments, were allowed to increase their local borrowing up to maximum of 100 per cent of the investments. At the same time, the liquidity of banks increased sharply due to coffee and tea boom of 1976/1977. It therefore became necessary to control credit to mop up the excess liquidity in the economy. As part of this reversal policy: commercial banks were required to limit their credit expansion to 18 per cent per annum. The liquidity ratio was raised from 18 - 20 per cent to reduce excess liquidity. In addition to liquid assets, requirements were reinforced by the introduction of cash ratio of 4 per cent for commercial banks (Musoke 1990: Kagane 1990).

Since 1980 / 1981, the government utilized interest rate more actively. The minimum savings deposit interest rates for commercial banks and non-banks financial institution were raised to 8 per cent and the minimum lending rates to 13 per cent per annum in June 1981. In an effort to encourage savings and channel financial resources to more productive sectors of the economy the maximum lending rates for banks went up to 14 per cent in September 1981 being at par with that charged by non-banks financial institution. The minimum saving deposit rates were increased to 10 per cent. Interest rate were further revised in 1982 December with maximum lending rates for banks being increased to 16 per cent and minimum savings deposit raised to 12.5 per cent. This increase in rates sought to ensure positive real return on financial assets. (Musoke 1990; Kagane 1990). Two revisions aimed at stimulating private sector demand for credit were made in 1983 / 1984. The maximum lending rates for commercial banks were lowered to 15 per cent from 16 per cent per annum in November 1983 while that of non-banks was lowered and fixed at 20 per cent per annum in June 1984. The maximum lending rates for banks and non-bank financial institutions were lowered to 18 per cent, to align the rates for banks and non-bank financial institutions. However, in line with the policy of placing greater reliance on

market forces, the government initiated measures towards freeing interest rates. The measures began in April 1989 when maximum lending rates for bank loans not exceeding 4 years were raised to 15 per cent per annum while that on loans and advanced with maturity of 4 or more years was raised to 18 per cent per annum which was then at par with what was charged by non-bank financial institutions. The savings deposit rates for both banks and non-bank financial institutions were set at 12 per cent per annum.

Interest rates in Kenya were finally liberalized in June 1991 with determination of interest on loans and deposits being left to the market forces of demand and supply (CBK 1991, 1992, 2002: Musoke 1990: Kagane1990).

The immediate experience was that the rates were very promising, as they recorded positive real rates and spread between lending and deposit rates were narrowed. According to Ngugi (1998) and Kabubo (1998) this was short lived, however with high inflation.

2.5.2 The Experience of Banking Crises

Banking crises are a complex and interactive mix of economic, financial and structural weakness. The triggers for many crises has been macroeconomic in origin and often associated with sudden withdrawal of liquid external capital from a country. (IMF- Financial Risks. Stability, and (Globalization 2002).

As noted by Brown bridge and Kirkpatrick (1999), financial crises have often involved triple crises of currencies, financial sector and corporate sector. Similarly it is argued that East Asia countries were vulnerable to financial crises because of " reinforcing dynamics between capital flows, macro policies, and weak financial and corporate sector institutions." (Alba and others, 1998). The link between balance of payment and banking crises is not certainly a recent phenomenon and has been extensively studied. The close parallel between banking and currency crises is emphasized by Kaufman (2000).

In most cases systematic crises are preceded by major macro economic adjustments, which often lead to economy moving into recession after a previous, strong cyclical upswing (Llewellyn. 2000). Although financial crises have often been preceded by sharp fluctuations in macro economic and asset prices. It would be a mistake to seek

the origin of such crises and financial instability exclusively in macro economic instability. While macro instability may often be a proximate cause, banking crises usually emerge because instability in the macro economy reveals existing weaknesses within the banking system. It is usually the case seed of a problem (e.g. over-lending, weak risk analysis, and control, etc) sown in the earlier upswing of the cycle. The downswing phase reveals previous errors and optimism. Mistakes made in the upswing emerge in the downswing. In Southeast Asia, for instance, a decade of substantial economic growth up to 1997 concealed the effects of questionable bank lending policies. Koskenkyala (2000) notes that a rapid pace of bank lending was a contributory factor in the Scandinavian banking crises in the early 1990s, which also had the effect of rising asset prices to an unsustainable level, raising the optimism of bankers, and impacting the real economy through a wealth effect as well as directly on aggregate demand. In particular, the case is made that trend in the economy and bank behavior are not interdependent but are reinforcing.

Berg (1993) and Benink and Llewellyn (1994) also argue that demand and prices trends in an economy are not totally exogenous to banking systems. Analysis of recent financial crises, in both developed and less developed countries (for instance, Brealey. 1999: Corsetti. Pesenti and Roubini 1998; Landgren Garcia and Saal 1996: and Llewellyn 2000) indicate that "regulatory failure" are not exclusively (or even mainly) an indication that the rules were wrong. Five common characteristics have been: weak internal risk analysis: management and control systems within the bank: inadequate official supervision: weak (or even) perverse incentives within the financial systems generally and financial institutions in particular: inadequate information disclosures and inadequate corporate governance arrangements both within the banks and with their large corporate customers.

Although as already noted banking crises can be triggered by developments in the macro economy, an unstable or unpredictable macro economic environment is neither a necessary nor sufficient condition for banking crises to emerge. The fault also lies internally within banks, and with failure of regulation, supervision and market discipline of banks. This reinforces the concept of a regulatory regime and the potential trade off between its components.

Banks can fail and bank insolvencies can be concealed within a reasonably stable macro economic environment if, for instance, internal risk analysis and management systems are weak, incentive structures are perverse, regulation and supervision are inadequate, market discipline is weak, and corporate governance arrangements are not well developed. Equally, if these are in place, banks can avoid insolvency even within a volatile economic environment.

2.5.3 Latest Developments in the World Economies

According to Koskenkyala (2000) occurrence of banking crises in Scandinavian countries after liberalization resulted from rapid pace of bank lending in the early 1990s, which also had the effect of raising asset prices to unsustainable levels, raising the optimism of bankers, and impacting the real economy through a wealth effect as well as on aggregate demand. In the case of Indonesia, Malaysia, South Korea and Thailand, non-performing loans recently amounted to around 30 per cent of total assets. Banking crises have involved substantial cost. In around 25 per cent of the cases, the cost exceeded 10 per cent of gross national product (e.g.. in Spain. Venezuela, Bulgaria, Mexico, Argentina and Hungary (Llewellyn 2000). Evan (2000) suggests that the crises amount to 45 per cent of gross national product in the case of Indonesia, 15 per cent in the case of South Korea and 40 per cent in the case of Thailand. The figures include cost of meeting obligations to depositors under blanket guarantee that the authorities introduced to handle the systemic crises and public sector payment to finance recapitalization of the insolvent banks. Barth and others (2000) also noted that the cost of recent bank crises in Chile, Argentina. South Korea and Indonesia are estimated at 41, 55, 60, and 80 per cent of gross domestic product respectively.

As banks failures clearly involves avoidable costs that may be significant. there is welfare benefit to derive from lowering the probability of bank failure and reducing the cost of bank failures that do occur.

2.6 RELATIONSHIP WITH PREVIOUS STUDIES

Kilonzo (2002) in a related study aimed at establishing the effects of changes in the interest rates on credit granted by commercial banks observed that there was a weak relationship between interest rates and level of credit granted from regression, correlation, and coefficient of determination analysis and that there were other factors other than interest rates that are more important in determining the amount of credit granted. He concluded that interest rate control was unnecessary as it was of no consequence to level of credit. However, he looked at the interest rates on the side of bankers ignoring the market as a whole and did not study the factors and conditions that made the relationship weak.

No known study has been undertaken to establish the effects of deregulation in the Kenyan banking industry or to suggest the most appropriate regime thus necessitating the study.

CHAPTER 3

3.0 RESEARCH METHODOLOGY

This chapter is sub-divided into five sections namely research design, data collection, data analysis, model specification and assumptions.

3.1 RESEARCH DESIGN

The study involved analysis of secondary data to establish the relationship between deposit and loan interest rates on loan portfolio and deposit portfolio; construction of the trend for interest rates that existed before and after liberalization of interest rates, thus tested whether interest rates explained variations in amounts advanced and deposited after liberalization also explained the objective of managing interest rates such that they remain positive in real terms and compiled various reports on related fields of study done by others to support the conclusion. The design was appropriate as it provided the historical data that was used in studying the effect of liberalizing interest rates movement overtime and established the trend of interest rates in Kenya.

3.2 DATA COLLECTION

Data was collected from statistical bulletins published by the Central Bank of Kenya for the period between the years 1987 to 2007.

3.3 DATA ANALYSIS

Correlation analysis was used to determine the relationship between interest rates on deposits and loans with the deposits and loans. Regression analysis was used to come up with a trend of interest rates for the period before (1987-1991) and after (1991-2007) liberalization, while a students test (t) described the results of analysis of variance therefore showed whether the interest rates explained variations in amounts deposited and advanced thus assisted in concluding whether the objective of interest rates remaining positive in real terms was successful.

3.4 MODEL SPECIFICATION

A nonlinear regression model was most suitable for estimating the function since the data was of a time series type. The predicting function that assisted in comparing the two regimes (1987- 1991 & 1991-2007) was specified as below;

$$K = \dot{E}b + \acute{\omega}t + \breve{y}g + Z$$

Where;

K= Interest rate

b = Amounts Advanced

t = Amounts Deposited

g= Risk Free Rate

$\dot{E}$. $\acute{\omega}$ and $\breve{y}$ = Model coefficient parameters

Z = constant

3.5 ASSUMPTIONS

The above model shall be used to establish the significant relationship between interest rates and amounts deposited and advanced. It is assumed the higher the rate offered the higher the amounts deposited. The higher the lending rate charged the lower the amounts advanced.

The data shall be assumed to be linear.

CHAPTER4: DATA ANALYSIS AND FINDINGS

4.1 INTRODUCTION

The study used deposit and loan interest rates that prevailed within the period before (1987 -1991) and after (1991-2007) liberalization. The secondary data was collected from statistical bulletins published by the Central Bank of Kenya.

The data shows that interest rates on deposits and advances for the period before liberalization were maintained at specific levels for the different years while for the period after liberalization interest rates were varying.

This data is shown on appendix I. The collected data was cleaned, coded and entered into SPSS software to build a database.

The data base was subjected to linear and nonlinear regression procedures to determine the relationship and effect between the deposits advances, risk free rate and interest rate on advances as well as deposits for the two different regimes.

4.2 REGRESSION ANALYSIS

4.2.1 REGRESSION ANALYSIS OF THE DEPOSIT RATE, RISK FREE RATE, DEPOSITS AND ADVANCES BEFORE LIBERALIZATION

Multiple regression analysis was used to express the relationship among the independent variables (tables 1, 3, 5 and 7).The multiple regression coefficient (R square or R^2),tells us how well the independent variables explain the dependent variable.

The R^2 for the equation in table 1 below is 0.87 for the deposit rate before liberalization. This suggests that a significant 87% of the variances are explained by

the three independent variables, the risk free rate, deposits and advances. This implies that only around 13%is not explained by the risk free rate, deposits and advances in the equation.

Table1.The model summary regression analysis (deposit rate before liberalization)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933[a]	.870	.862	.59122

a Predictors: (Constant), Risk Free Rate, Deposits, Advances

4.2.2 THE CORRELATION BETWEEN DEPOSIT RATE, RISK FREE RATE, DEPOSITS AND ADVANCES AFTER LIBERALIZATION.

The R^2 for the equation in table 3 below is 0.808 for the deposit rate after liberalization this suggests that 80.8% of the variances are explained by the three independent variables, the deposits, advances and the risk free rate. This implies that the three independent variables do not explain around only 19.2% in the equation.

Table 3: The model summary regression analysis (deposit rate after liberalization)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.899[a]	.808	.805	2.43464

a Predictors: (Constant), Risk Free Rate, Advances, Deposits

4.2.3 THE CORRELATION BETWEEN LENDING RATE, RISK FREE, DEPOSITS AND ADVANCES BEFORE LIBERALIZATION

The R^2 for the equation in table 5 below is 0.901 for the lending rate before liberalization. This suggests that 90.1% of the variances are explained by the three independent variables, the deposits, advances and the risk free rate. This implies that the three independent variables do not explain around only 9.9% in the equation.

Table5: The model summary regression analysis (lending rate before liberalization).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.901	.895	.67371

a. Predictors: (Constant), Risk Free Rate, Deposits, Advances

4.2.4 THE CORRELATION BETWEEN LENDING RATE, RISK FREE RATE, DEPOSITS AND ADVANCES AFTER LIBERALIZATION.

The R^2 for the equation in table7 below is 0.685 for the rate after liberalization. This indicates that 68.5% of the variables are explained by the three independent variables, the deposits, advances and the risk free rate. This implies that the three independent variables fail to explain 31.5% in the equation.

Table 7: The model summary regression analysis (lending rate after liberalization)

Model Summary

Model	R	R Square	Adjusted R Square	Std Error of the Estimate
1	.828[a]	.685	.680	3.50188

a Predictors: (Constant), Risk Free Rate, Advances, Deposits

4.3.0 THE COEFFICIENT OF REGRESSION ANALYSIS FOR THE DEPOSIT RATE BEFORE LIBERALIZATION.

The beta values illustrated in table 2 below allows us to examine the effects of each of the independent variable on the dependent variable.

Table 2 shows that:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.859	1.305		-.658	.514
	Deposits	-1.07E-04	.000	-.370	-2.156	.036
	Advances	3.113E-04	.000	.968	4.937	.000
	Risk Free Rate	.470	.103	.372	4.554	.000

a. Dependent Variable: Deposit rate

The variable advances (0.968) have the greatest impact on the deposit rate and the risk free second highest (0.372). The variable deposits have the smallest impact indicating that more deposits engender less deposit rate. However for each unit of change in the risk free rate there are standard errors of 0.103 with the effect of deposit and advances partialled out.

4.3.1 THE COEFFICIENT OF REGRESSION ANALYSIS FOR THE DEPOST RATE AFTER LIBERALIZATION

The beta values illustrated in table 4 shows that:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.191	450		20.420	000
	Deposits	-1.14E-05	.000	-.407	-1.683	094
	Advances	-3.78E-06	000	-.103	-.431	.667
	Risk Free Rate	.203	.015	.515	13.567	.000

a. Dependent Variable: Deposit rate

The risk free rate 0.515 has the greatest impact on the deposit rate and advances second highest. The variable deposits have the smallest impact indicating that more deposits engender less interest rate. However, for each unit of change in the risk free rate there are standard errors of 0.015 with the effects of deposits and advances partialled out.

4.3.2 THE COEFFICIENT OF REGRESSION ANALYSIS FOR THE LENDING RATE BEFORE LIBERALIZATION .

The beta values illustrated in the table 6 shows that

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-2.471	1 488		-1.661	.103
	Deposits	-5 59E-06	000	-.015	-.099	.922
	Advances	2.704E-04	.000	.643	3.764	.000
	Risk Free Rate	.741	.118	.449	6.299	.000

a. Dependent Variable: Lending rate

The variable advances (0.643) has the greatest impact on the lending rate and the risk free rate second highest at 0.449. The variables deposits have the smallest impact indicating that more deposits engender less lending rate.

4.3.3 THE COEFFICIENT OF REGRESSION ANALYSIS FOR THE LENDING RATE AFTER LIBERALIZATION

The beta values illustrated in table 8 shows that

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	22.895	.647		35.366	.000
	Deposits	-3.31E-05	.000	-1.059	-3.410	.001
	Advances	1.660E-05	.000	405	1.315	.190
	Risk Free Rate	.114	.022	.258	5.290	.000

a. Dependent Variable: Lending rate

The variable advances have the greatest impact on the lending rate at 0.405 and the risk free rate second highest. The variable deposits have the smallest impact which is negative indicating that more deposits engender less interest rate. However, for each unit of change in the risk free rate there are standard errors of 0.022 with the effects of deposits and advances partialled out.

4.4 MODEL VALIDATION

The regression model was specified in chapter three as:

$K = \acute{E}b + \acute{\omega}t + \breve{y}g + Z$

Where;

K= Interest rate

b = Amounts Advanced

t = Amounts Deposited

g= Risk Free Rate

$\acute{E}$, $\acute{\omega}$ and $\breve{y}$ = Model coefficient parameters

Z = constant

From the variables of the regression as shown in tables 3, 6, 12 and 9, the regression equations can be validated as:

4.4.1 VALIDATED MODEL (DEPOSIT RATE BEFORE LIBERALIZATION)

For every increment of deposit interest rate amounts advanced increase by 3.113, amounts deposited decline by 1.07 and the risk free rate increases by 0.47 where the intercept is -0.859 as shown below:

K = -0.859 + 3.113b - 1.07t + 0.47g

The parameter tests of significance the student t test shows from table 2 that the computed t statistic for deposit - 2.156 is less than the critical t statistic 0.036 implying that the deposits are not significantly explaining variations in the dependent variable deposit rate before liberalization. However, the computed t statistics for advances (4.937) and the risk free rate (4.554) are greatest than the critical t statistic

(0.000) implying that they significantly explain variations in the deposit rate before liberalization.

4.4.2 VALIDATED MODEL (DEPOSIT RATE AFTER LIBERALIZATION)

As shown below for every increment in deposit interest rate after liberalization amounts advanced decline by 3.78, amounts deposited also decline by 1.14 and the risk free rate increases by 0.203 where the intercept is 9.19 .

K = 9.19 - 3.78b - 1.14t + 0.203g

The parameter tests of significance the student t tests shows from table 4 that the computed t statistic for deposits (-1.683) is less than the critical t statistic (0.094) implying that the deposits are not significantly explaining variations in the dependent variable, deposit rate after liberalization. The computed t statistic for advances (-0.431) is also less than the critical t (0.667) suggesting that advances are also not significantly explaining variations in the dependent variable. However, the computed t statistic for the risk free rate (13.567) is greater than the critical t statistic (0.000) implying that the risk free rate significantly explains variations in the deposit rate after liberalization.

4.4.3 VALIDATED MODEL (LENDING RATE BEFORE LIBERALIZATION)

As shown below for every increment in the lending interest rate before liberalization amounts advanced increase by 2.704, amounts deposited decline by 5.59 and the risk free rate increases by 0.741 where the intercept is -2.471.

K = -2.471 + 2.704b - 5.59t + 0.741g

The parameter tests of significance the student t test shows from table 6 that the computed t statistic for deposits (-0.099) is less than the critical t statistic (0.922) implying that the deposits are not significantly explaining variations in the lending rate. However the computed t statistic for advances (3.764) and the risk free rate (6.299) are greater than the critical t statistic (0.000) implying that they significantly explain variations in the lend ing rate before liberalization.

4.4.4 VALIDATED MODEL (LENDING RATE AFTER LIBERALIZATION)

As shown below for every increment in the lending interest rate after liberalization the amounts advanced increase by 1.66, amounts deposited decline by 3.31 and the risk free rate increases by 0.114 where the intercept is 22.895.

K=22.895 + 1.66b - 3.31t + 0.114g

The parameter tests of significance the student t test shows from table 8 that the computed t statistic for deposits (-3.410) is less than the critical t statistic (0.001) implying that the deposits are not significantly explaining variations in the dependent variable, the lending rate after liberalization. However, the computed t statistic for advances (1.315) and the risk free rate (5.290) are greater than the critical t (0.190) and (0.000) respectively. This implies that the advance and the risk free rate significantly explain variations in the lending rate after liberalization.

CHAPTER 5: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION.

5.1 SUMMARY OF FINDINGS

Interest rates are of great importance changes in their general pattern have widespread consequences on individuals, business and governments.

The study set out to investigate the relationship between deposit and lending interest rates

and deposits, advances and the risk free rate.

Also capture the effect of the rates on deposits and advances in Kenya.

These were the objectives of this study. The study formulated the following hypotheses; the study used secondary data from statistical bulletins published by the Central Bank of Kenya. The data was analyzed and presented in Chapter Four.

HO: There is no significant relationship between the deposit interest rate and advances, deposits and the risk free rate before and after liberalization

HA: There is a significant relationship between the deposit interest rate and advances, deposit and the risk free rate before and after liberalization.

HO: There is no significant relationship between the lending interest rate and the deposits, advances and the risk free rate before and after liberalization.

HA: There is a significant relationship between the leading interest rate and the deposits, advances and the risk free rate before and after liberalization.

The study sought to reject the two null hypotheses using the student t test as detailed in chapter 4.

5.2 CONCLUSION

The correlation between deposit interest rates and deposits, advances and the risk free was established for both the period before and after liberalization to be positive as shown by positive multiple correlation coefficient (Multiple R). Therefore the deposit interest rate moves in the same direction as the deposit, advances and the risk free rate. As one rises the others rise too.

The correlation between lending interest rates and deposits, advances and the risk free rate was established for both regimes to be positive as shown by the multiple correlation coefficient (Multiple R). Therefore the lending interest rate also moves in the same direction as the deposits, advances and the risk free rate. As one rises the others rise too. However, in the period before liberalization the relationship was more significant than the period after liberalization.

Using the student's t test the computed t statistic was established by the study to be greater than the critical t hence the rejection of the null hypotheses for both regimes and acceptance of the alternative hypothesis that there is a significant relationship between deposit and lending interest rates and the deposits, advances and the risk free rate.

However, the risk free rate and the advances had the highest impact while the deposits engendered less interest rate on both the deposit rate and the lending rate after liberalization.

5.3 DISCUSSION AND IMPLICATION

From Keynes (1937) theories of preference and loanable funds, it is postulated that the interest rates depend on the demand and supply for money. This position is consistent with classical theory marshal (1990) that market forces of demand and supply should determine the equilibrium price of lending money.

From this study the lending and deposit interest rate is positively correlated with advances, deposits and the risk free rate in both regimes.

However, the period before liberalization has a more significant positive relationship. This therefore gives more weight on the regulatory regime as opposed to the free market regime in Kenya given the objective is to raise deposits and advances in real terms.

5.4 LIMITATIONS OF THE STUDY

The study considered only deposits, advances and the risk free rate as predictors of interest rate and did not consider other predictor variables such as situational factors.

The study was limited in time to consider such factors as it was part of the requirement for the award of the degree of Master of Business Administration of the University of Nairobi and therefore had to be conducted within a limited time frame. The study was further limited by inadequate finance.

5.5 RECOMMENDATION

The study highly recommends that adopting the regulatory regime in Kenya shall spur an increase in deposits and advances in real terms. This is supported by the strong positive correlation between deposit and lending interest rates and deposits, advances and the risk free rate for the period before liberalization.

5.6 RESEARCH GAPS FOR FURTHER RESEARCH

The study recommends a major study on other situational factors apart from deposits, advances and the risk free rate that are likely to affect the deposit and lending rate in Kenya.

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APPENDIX1

PERIOD BEFORE LIBERALISATION

		DEPOSIT RATE	DEPOSITS	LENDING RATE	ADVANCES	RISK FREE RATE
1987	JAN	9.5	31308	14	24467	12.54
1987	FEB	9.5	31717	14	24525	12.66
1987	MAR	9.5	32280	14	25163	12.67
1987	APR	9.5	31192	14	25036	12.82
1987	MAY	9.5	31689	14	25587	12.83
1987	JUN	9.5	32569	14	25733	14.18
1987	JUL	9.5	32715	14	25884	12.93
1987	AUG	9.5	33200	14	26132	12.91
1987	SEP	9.5	33371	14	26789	12.98
1987	OCT	9.5	33546	14	26900	12.98
1987	NOV	9.5	33875	14	27533	12.98
1987	DEC	9.5	33602	14	27859	12.99
1988	JAN	11.5	34669	15	28529	12.99
1988	FEB	11.5	34984	15	28533	13.45
1988	MAR	11.5	34357	15	28699	13.48
1988	APR	11.5	33934	15	28880	13.44
1988	MAY	11.5	34256	15	28797	13.48
1988	JUN	11.5	34297	15	29455	13.98
1988	JUL	11.5	34208	15	29103	13.49
1988	AUG	11.5	34751	15	29579	13.49
1988	SEP	11.5	35261	15	30509	13.49
1988	OCT	11.5	34989	15	30987	13.5
1988	NOV	11.5	36625	15	32183	13.38
1988	DEC	11.5	37271	15	31523	13.52
1989	JAN	11.5	37847	15	32588	13.73
1989	FEB	11.5	38284	15	33079	13.71
1989	MAR	11.5	40476	15	31889	13.68
1989	APR	11.5	39633	18	33123	13.78
1989	MAY	11.5	39676	18	33783	13.94
1989	JUN	11.5	40286	18	32740	13.98
1989	JUL	11.5	39742	18	34402	13.98
1989	AUG	11.5	41685	18	35281	13.99
1989	SEP	11.5	42728	18	34441	13.99
1989	OCT	11.5	43829	18	38008	13.99
1989	NOV	11.5	44272	18	38137	13.99
1989	DEC	11.5	45039	18	37265	14
1990	JAN	13.75	44138	18	39004	13.99
1990	FEB	13.75	44418	18	39344	13.99
1990	MAR	13.75	45069	18	36487	14
1990	APR	13.75	43910	19	40326	14
1990	MAY	13.75	44275	19	39069	14.93
1990	JUN	13.75	44874	19	38682	14.94
1990	JUL	13.75	44984	19	39457	14.81
1990	AUG	13.75	44408	19	38991	14.96
1990	SEP	13.75	47985	19	38772	14.97
1990	OCT	13.75	47865	19	39204	14.99
1990	NOV	13.75	49542	19	39831	15.82

1990	DEC	13.75	50338	19	41461	15 93
1991	JAN	13.75	32312	19	32077	16 64
1991	FEB	13.75	32597	19	32529	17.33
1991	MAR	13.75	33702	19	33152	16 96
1991	APR	13.75	33806	19	32922	16.99
1991	MAY	13.75	34370	19	33339	17
1991	JUN	13.75	34379	19	33415	17

PERIOD AFTER LIBERALISATION

		DEPOSIT RATE	DEPOSITS	LENDING RATE	ADVANCES	RISK FREE RATE
1991	JUL	13.5	34182	16.71	33848	17.1
1991	AUG	13.59	34638	16.42	33929	16.
1991	SEP	13.49	35192	17.26	34726	17.1
1991	OCT	13.47	35932	17.78	35477	17.7
1991	NOV	13.7	36324	17.94	35965	16.9
1991	DEC	13.73	36736	17.87	36199	17.3
1992	JAN	13.71	36429	17.13	36864	18.
1992	FEB	13.83	37052	17.61	36275	17.1
1992	MAR	13.85	37617	18.12	36518	17.
1992	APR	13.76	37001	17.37	37227	18.0
1992	MAY	13.66	36955	18.53	38224	18.3
1992	JUN	13.65	36102	18.54	38213	18.7
1992	JUL	13.61	36787	18.68	37998	17.6
1992	AUG	13.61	38166	18.62	39184	17.7
1992	SEP	13.81	39517	18.95	40387	18.4
1992	OCT	14.23	39369	19.47	40866	19.4
1992	NOV	14.29	40491	19.15	41191	18.0
1992	DEC	14.39	41645	19.51	42295	18.1
1993	JAN	14.24	41391	19.57	42847	17.8
1993	FEB	14.25	42254	19.7	43406	17.8
1993	MAR	14.45	42940	19.82	44149	25.0
1993	APR	15.32	39556	20.77	45506	45.7
1993	MAY	15.49	37672	24.16	44853	68.0
1993	JUN	17.28	38508	24.51	43713	84.2
1993	JUL	18.47	38785	25.45	46223	84.6
1993	AUG	22.51	40288	26.37	46741	79.5
1993	SEP	23.03	40955	27.04	47630	75.6
1993	OCT	23.04	42963	30.06	48622	70.8
1993	NOV	23.43	44670	30.81	52915	55.2
1993	DEC	22.36	46593	31.64	54046	43.5
1994	JAN	23.27	49854	32.18	55625	33.5
1994	FEB	20.84	49989	32.16	57417	23.8
1994	MAR	19.98	53377	30.68	61030	27.6
1994	APR	18.61	51837	32.28	60964	30.8
1994	MAY	17.76	51841	30.97	63290	31.2
1994	JUN	17.42	51705	31.49	63577	32.3

1994	JUL	16.69	54308	32.17	64012	29.7
1994	AUG	16.67	56154	32.18	67185	24 1
1994	SEP	16.76	58090	31.37	67580	17.3
1994	OCT	15.11	59612	29.21	67349	16.9
1994	NOV	14.05	57045	25.96	65901	17.2
1994	DEC	13.05	57065	25.91	62001	17.4
1995	JAN	12.2	55449	25.24	62990	16 7
1995	FEB	12.08	54747	24.09	61022	17.6
1995	MAR	11.3	56673	23.61	61176	16.8
1995	APR	10.83	54101	23.32	57745	15.1
1995	MAY	9.81	53305	23.09	58315	15.0
1995	JUN	10.13	54211	23.32	60535	16.3
1995	JUL	10.32	54954	22.96	60970	18.4
1995	AUG	11.9	53907	24.72	60177	19.6
1995	SEP	11.8	54898	26.19	57300	21.1
1995	OCT	11.97	55153	26.43	58415	24.0
1995	NOV	12.46	47511	28.38	52941	24.8
1995	DEC	12.77	46197	28.99	48932	21.6
1996	JAN	13.33	47904	27.81	50724	21.2
1996	FEB	13.62	47707	27.79	52257	25.9
1996	MAR	13.89	46699	28.06	49248	26.6
1996	APR	14.23	41905	27.99	43906	24.1
1996	MAY	14.19	42288	28.06	44215	21.9
1996	JUN	14.17	42867	28.34	44540	21.8
1996	JUL	14.05	42123	28.15	43821	21.7
1996	AUG	13.9	41441	28.17	43842	21.6
1996	SEP	14.28	40935	28.44	44834	23
1996	OCT	14.19	40004	28.78	44256	24.0
1996	NOV	14.29	39104	28.7	43150	22.0
1996	DEC	14.65	38309	28.58	40423	21.5
1997	JAN	14.54	38290	28.81	41354	21.6
1997	FEB	14.47	32854	28.6	35445	21.4
1997	MAR	14.33	32289	28.57	35516	21.4
1997	APR	14.24	31142	28.57	36629	21.0
1997	MAY	14.95	28895	27.26	35138	20.3
1997	JUN	13.89	29098	27.49	36025	19.4
1997	JUL	14.11	28968	26.86	35486	18.4
1997	AUG	14.06	21829	26.48	30107	19.6
1997	SEP	14.53	21644	28 21	32032	26
1997	OCT	15.21	21237	29.07	32148	27.1
1997	NOV	15.88	21550	29.8	32210	26.7
1997	DEC	16.02	21668	29.85	32320	26.3
1998	JAN	15.94	20778	29 81	32277	26.2
1998	FEB	15.88	21669	29.9	33006	26.3
1998	MAR	15.89	21458	30.2	32603	26.7
1998	APR	18.37	20438	30.41	33726	26.9
1998	MAY	17.85	20577	30.54	33103	26.3
1998	JUN	16.87	21000	30 46	33146	25.4
1998	JUL	16.67	21155	30 37	33218	24.6
1998	AUG	16.35	21600	29.77	30618	23.7
1998	SEP	15.96	21066	29.08	30764	22.4
1998	OCT	15.39	22332	28 99	30604	20.5
1998	NOV	14.67	22911	28 19	31288	17.6
1998	DEC	12.99	23369	26.16	31095	12.5

1999	JAN	11.25	22739	23.67	31236	10.
1999	FEB	9.66	22971	22.83	31239	8.9
1999	MAR	8.93	22804	21.36	31314	8.8
1999	APR	8.18	21660	20.9	31660	9.0
1999	MAY	7.55	21464	20.86	32413	9.6
1999	JUN	7.83	20576	20.7	28492	11.4
1999	JUL	7.65	20471	21.12	28229	14.4
1999	AUG	7.79	20431	21.93	28279	14.8
1999	SEP	8.44	20259	22.45	28431	15.7
1999	OCT	9.1	20082	23.12	28579	17.6
1999	NOV	9.48	19950	24.43	29088	18.1
1999	DEC	9.74	20527	25.19	23852	19.9
2000	JAN	10.38	20738	25.14	26682	20.
2000	FEB	9.17	21396	25.39	25965	14.8
2000	MAR	8.01	21919	23.76	26719	11.2
2000	APR	7.61	21756	23.44	27589	12.4
2000	MAY	7.21	21685	23.4	27752	11.2
2000	JUN	7.01	21543	23.11	28390	10.4
2000	JUL	6.67	21467	22.39	28806	9.5
2000	AUG	6.26	21230	21.23	29073	9.2
2000	SEP	6.22	20296	20.57	28731	10.3
2000	OCT	6.22	19715	20.22	28300	10.6
2000	NOV	6.2	19545	19.79	28520	11.1
2000	DEC	6.22	19830	19.6	28745	12.
2001	JAN	6.54	301880	20.27	274790	14.7
2001	FEB	6.55	297697	20.13	277108	15.
2001	MAR	6.92	301921	20.19	275099	14.9
2001	APR	6.58	304743	19.56	277450	12.
2001	MAY	6 44	298784	19.2	281456	10.5
2001	JUN	6.36	298517	19.26	279994	12.0
2001	JUL	6.22	298238	19.71	280173	12.8
2001	AUG	6.24	296224	19.54	267073	12.8
2001	SEP	6.27	301730	19.44	268727	12.3
2001	OCT	6.21	305098	19.77	266293	11.6
2001	NOV	5.87	302002	19.44	264527	11.
2001	DEC	5.7	308053	19.49	260200	11.0
2002	JAN	5.72	301119	19.3	262235	10.8
2002	FEB	5.52	307519	19.18	260598	10.6
2002	MAR	5.42	305656	18.86	258993	10.1
2002	APR	5.48	308376	18.69	262644	10.0
2002	MAY	5.31	312911	18.54	266747	9.0
2002	JUN	5.21	317487	18.38	268743	7.3
2002	JUL	5.08	318175	18.12	268167	8.6
2002	AUG	4.99	325688	18.12	273729	8.3
2002	SEP	4.8	325136	18.14	273002	7.6
2002	OCT	4.66	325631	18.34	273189	8.0
2002	NOV	4.75	325746	18.05	27572	8.
2002	DEC	4.75	335094	18.34	277817	8.3
2003	JAN	4.68	337434	19.02	279288	8.3
2003	FEB	4.4	337606	18.83	274609	7.7
2003	MAR	3.99	341525	18.49	275065	6.2
2003	APR	4.06	340124	18.57	275287	6.2
2003	MAY	3.71	343441	18.52	273627	5.8
2003	JUN	4.84	350068	15.73	275885	

2003	JUL	4.49	354283	15.3	277383	1.54
2003	AUG	3.37	351222	14.81	280606	1.18
2003	SEP	3.07	359178	14.82	284075	0.83
2003	OCT	3.13	369483	14.75	288167	1
2003	NOV	3.32	372556	14.07	290999	1.28
2003	DEC	3.29	381825	13.47	294668	1.46
2004	JAN	3.12	380870	13.48	300318	1.58
2004	FEB	2.47	383880	13.01	300590	1.57
2004	MAR	2.32	392057	13.12	302705	1.59
2004	APR	1.96	394169	12.67	306545	2.11
2004	MAY	2.22	405583	12.55	311948	2.87
2004	JUN	2.2	408079	12.17	317684	2.01
2004	JUL	2.25	407597	12.31	322004	1.71
2004	AUG	2.26	416754	12.19	330185	2.27
2004	SEP	2.63	423793	12.27	336577	2.75
2004	OCT	2.33	433888	12.39	347472	3.95
2004	NOV	2.66	434224	11.97	350769	5.06
2004	DEC	2.77	439377	12.25	363951	8.04
2005	JAN	3.08	441749	12.12	366852	8.26
2005	FEB	3.47	446106	12.35	368155	8.59
2005	MAR	3.75	453569	12.84	329247	8.63
2005	APR	3.91	454665	13.12	374956	8.68
2005	MAY	4.05	462086	13.11	374627	8.66
2005	JUN	4.21	463679	13.09	375806	8.5
2005	JULY	4.14	471628	13.09	379356	8.59
2005	AUG	4.3	477281	13.03	380671	8.66
2005	SEP	4.35	480229	12.83	383157	8.58
2005	OCT	4.43	489091	12.97	387599	8.19
2005	NOV	4.5	490282	12.93	394186	7.84
2005	DEC	4.38	492386	13.16	391873	8.07
2006	JAN	4.48	498077	13.2	395450	8.23
2006	FEB	4.48	510739	13.27	402482	8.02
2006	MAR	4.28	519132	13.33	408078	7.6
2006	APRIL	4.35	536523	13.51	416426	7.02
2006	MAY	4.36	538890	13.95	416914	7.01
2006	JUNE	4.35	537144	13.79	422195	6.6
2006	JULY	4.31	549253	13.72	417055	5.89
2006	AUG	4.08	549158	13.64	421841	5.96
2006	SEPT	4.04	562405	13.54	427277	6.45
2006	OCT	4.11	574145	14.01	434554	6.83
2006	NOV	4.15	576235	13.23	439574	6.41
2006	DEC	4.11	577659	12.82	446788	5.73
2007	JAN	4.35	586836	13.78	453795	6
2007	FEB	4.21	590379	13.64	457946	6.22
2007	MAR	4.19	606326	13.56	467219	6.32
2007	APRIL	4.11	611681	13.44	475237	6.65
2007	MAY	4.14	623741	13.38	483758	6.77
2007	JUNE	4.18	640442	13.14	443468	6.53