FACTORS AFFECTING THE SUPPLY OF HOUSING CREDIT: A STUDY OF FINANCIAL INSTITUTIONS

BY:

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DECLARATION

This research paper is my original work and neither part nor whole of it has ever been presented for any academic award in any other university.

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APPROVAL

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Date:......23-11- 2015...

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DEDICATION

To my children born and unborn my mother told me "Your children should always be better than you"

To my husband David: Anything you want in life you get you just need to be sufficiently hungry

To my brother Joseph: we made it…Aluta Continua!

GOD BLESS YOU ALL

and

To my mother PhD HERE I COME! …..I wish you were here to see the fruits of your labor.

THANK YOU.

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LIST OF ABBREVIATIONS

ADF   -   Augmented Dickey Fuller

CBK   -   Central Bank of Kenya

CBR   -   Central Bank Rates

FEM   -   Fixed Effects Model

GDP   -   Gross Domestic Product

HC   -   Housing Credit

GMM   -   General Method of Moments

NSSF   -   National Social Security Funds

REM   -   Random Effects Model

ROA   -   Return on Assets

SACCOs   -   Saving and Credit Co-operative Society

SSA   -   Sub-Saharan Africa

USD   -   United States Dollars

VIF   -   Variation in Factors

ABSTRACT

The main objective of this study was to determine the factors that determine the supply of housing credit in Kenya. It particularly focused on the effect of firm level and macroeconomic factors on the supply of housing credit. The firm level factors included profitability (ROA), liquidity (capital-asset-ratio), and deposit liability. The macroeconomic factors/ variables included lending interest rate, GDP growth, and inflation rate. Housing credit supply was proxied by mortgage provided by all the 43 commercial banks in Kenya for the period 2005 to 2014. The study used panel data, which was analyzed using the Fixed Effects Model (FEM), Random Effects Model (REM), and General Method of Moments (GMM).

In the fixed effects and random effects model, liquidity and deposits had a positive and statistically significant relationship with housing credit supply. Inflation rate had a negative and significant relationship with housing credit supply. However, GDP growth and profitability had no statistically significant relationship with housing credit supply. In the GMM, liquidity and deposit liabilities had a positive and statistically significant effect on the supply of housing credit. Profitability (ROA), on the other hand, had a negative and statistically significant relationship with housing credit supply. Interest rate had a positive relationship with credit supply. However, inflation rate had no statistically significant relationship with housing credit supply. This implies that firm level factors had the greatest influence on the supply of housing credit.

Based on these findings the study recommends that the Central Bank should focus on enforcing appropriate minimum capital requirement to ensure that banks are stable. The resulting improvement in savers and investors' confidence will increase deposits, which will in turn increase housing credit supply. Banks should also incentivize the public to save by reducing interest rates spread. The government should also improve regulation of the banking industry to ensure that deposits are safe in financial institutions. This will improve access to funds, thereby increasing housing credit supply.

CHAPTER ONE

INTRODUCTION

1.1 Background

Kenya experienced a strong economic growth in the past decade. This led to the expansion of the middle class. The strong economic growth was accompanied by rapid urbanization, as well as, increased consumption of durable goods such as housing. Rapid population growth also increased the demand for housing. According to World Bank (2011), the annual increase in demand for housing in Kenya is approximately 206,000 units. However, the country is able to supply only 50,000 units annually. Thus, there is an annual shortfall of 156,000 units, which has since accumulated to a backlog of 2 million units. The inadequate supply of housing units has had two major implications in the country. First, the populations that are not able to afford the supplied units at the prevailing prices have had to resort to self-built and informal housing. As a result, nearly 30% of the country's population lives in slums. In urban areas such as Nairobi, nearly 70% of the population lives in slums. Second, inadequate supply has resulted into continuous increase in housing prices (Arvanitis, 2013).

According to Wagura (2013), inadequate housing supply in Kenya is attributed to among other factors, insufficient housing credit supply, high cost of construction, low income among buyers, and poor land tenure system. Insufficient supply of housing credit affects both developers and buyers. Among developers, lack of adequate capital to invest in the residential housing sector is a serious constraint to the supply of houses. As a result, developers have to depend on credit, which is often expensive due to high interest rates.

Among buyers, lack of adequate housing credit is a significant constrain to owning a home. Figure 1 shows that the population grew much faster than the supply of credit between 2005 and 2009. By contrast, the supply of credit grew more rapidly than the population after 2009. However, majority of Kenyans are still not able to access adequate housing credit. This trend is explained in part by the high cost of accessing the existing credit facilities. Although Kenya has the largest mortgage market in East Africa, the value of its outstanding mortgages is only 2.5% of its GDP. This is significantly low compared to South Africa and Zambia where the outstanding mortgages are approximately 25% and 19% of the countries' respective GDPs (Arvanitis, 2013). Affordability is the main factor that accounts for the low penetration of housing credit in Kenya. Lack of affordability is attributed to low income, high interest rates, high inflation, and the inability of the financial market to provide long-term funding.

Given the limited supply of housing credit, Kenyans have had to resort to incremental housing by depending on microfinance loans to improve or construct their homes gradually. However, incremental housing is not a solution to the housing problem in Kenya since when individuals run out of cash, they are left with no or inadequate housing despite having spent a lot of money in construction. In addition, they have to wait until they have enough savings in order to continue with construction, thereby incurring higher construction costs due to increase in the prices of building materials.

It is against this background that this study sought to determine the factors that influence the supply of housing credit in Kenya. In this study, housing credit refers to the amount of loans (mortgages) issued by commercial banks for acquisition of residential housing units. The study empirically assessed the influence of firm-specific factors that determine the supply of housing credit. Firm-specific factors refer to the internal characteristics of lending institutions (banks) such as their return-to-equity ratio, deposit liabilities, and liquidity among others. The study also explored the influence of macroeconomic variables such as inflation rate and GDP growth rate on the supply of housing credit. In sum, the study sought to determine whether changes in various firm-specific factors and macroeconomic variables lead an increase or decrease in housing credit supply.

Figure 1.1: Credit supply vs. Population growth

Housing Finance in Kenya

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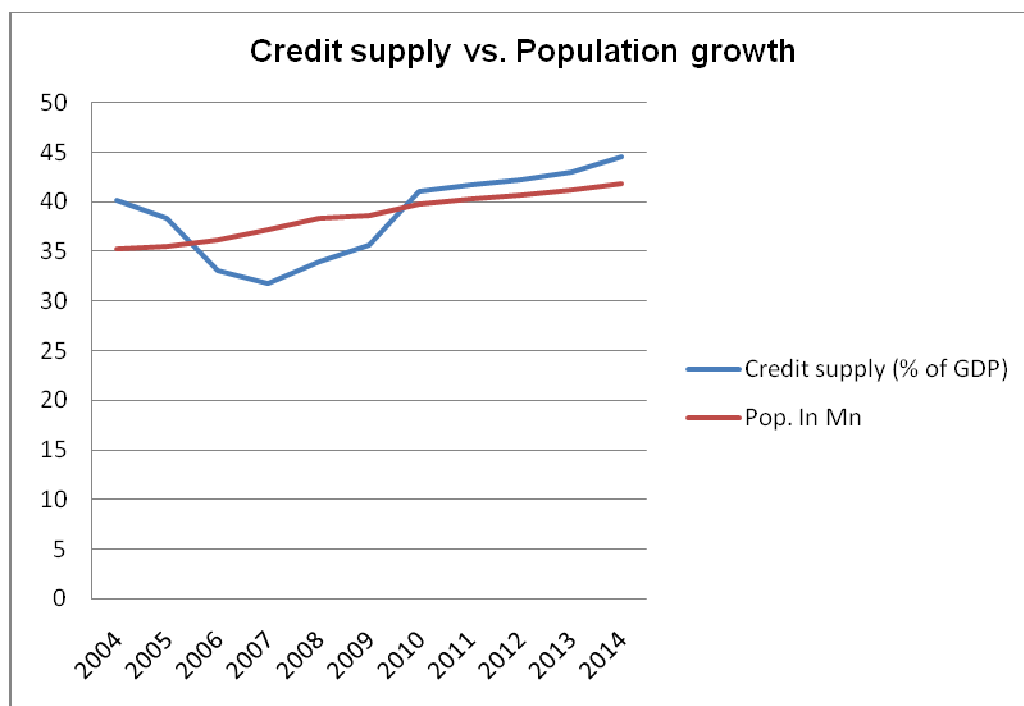
Housing in Kenya is predominantly financed through savings and credit, as well as funds obtained from institutional investors and the capital market. Savings is mainly used by individuals who cannot afford or cannot qualify for mortgages. In this case, individuals save part of their income on a regular basis and use it to finance the construction of their houses on a gradual basis. However, individual savings is often limited due to low income and lack of financial discipline (Arvanitis, 2013). As a result, most people often take long or fail to compete constructing their homes. In this respect, individuals are increasingly organizing themselves into SACCOS, housing schemes and investment clubs to pool resources to purchase or construct housing units. The SACCOs/ investment clubs use their members' savings to finance housing construction or advance credit to their members to purchase homes. In addition, they often use their bargaining power and assets to access housing credit to purchase/ construct homes for their members. SACCOs and investment clubs have increased access to housing credit. However, their membership restrictions prevent them from serving the majority of the population.

Lending by commercial banks/ mortgage companies is the main source of housing credit in Kenya. Nearly 43 banks and one Mortgage Company have been licensed by the CBK to supply housing credit. Banks offer differentiated mortgage products to suit the needs of borrowers, thereby increasing the supply of housing credit. However, majority of Kenyans cannot access housing credit from banks because of high interest rates and inability to qualify for them.

Apart from commercial banks, institutional investors such as insurance companies, pension schemes e.g. NSSF, and fund managers, are also involved in the supply of housing finance in Kenya (World Bank, 2011). Pension schemes often allow their members to use part of their retirement savings as collateral to access housing credit. However, the supply of housing credit through this channel is limited due to inadequate savings to guarantee a loan coupled with the difficulty in ensuring that the credit is strictly used to finance the purchase/ construction of a residential house. Insurance companies and fund managers often collaborate with developers by investing financial capital in real estate projects. Nonetheless, they do not provide loans/ mortgages to potential homeowners, thereby limiting access to housing credit.

The capital market (Nairobi Securities Exchange) also enables developers to raise financial capital by borrowing from the public. This involves raising corporate bonds, which investors/ developers use to finance the construction of new housing units. The limitation of the capital market is that individuals (buyers) cannot use it as a source of housing credit since bonds can only be raised by corporations.

1.2 Problem Statement

Access to adequate and accurate information concerning the factors that determine the supply of housing credit is central to the development of the mortgage market in Kenya. Nevertheless, the existing literature on the factors that determine supply of housing credit in Kenya has significant knowledge gaps. First, most of the studies about housing credit supply were conducted in developed countries. Thus, their findings might not reflect the

situation in Kenya due to the differences in the level of economic development between developed and developing countries such as Kenya.

Second, most previous studies that were done in Kenya focused on the factors that determine the demand for housing credit (mortgage). These include tax incentives, lending interest rates, income levels, and banks' terms and conditions for issuing loans (Wambui2013; Njongoro 2013; and Ngugi and Njori 2013). In this respect, the variables that influence the supply of credit were ignored in the existing literature. In addition, previous studies tend to analyze the effects of firm-specific and macroeconomic variables on housing credit supply in isolation. Thus, they do not shed light on how firm-specific variables and macroeconomic variables would affect housing credit supply if they were included in the same model.

Finally, descriptive statistics is the main analytical tool used in previous studies (Matete et al. 2014; Njiru and Moronge 2013; Munywoki 2012; and Kalya 1998). In this regard, the studies tend to analyze the supply of housing credit in various banks in isolation rather than using panel data. Moreover, descriptive statistics often fail to provide deeper insights into the relationships between housing credit supply and its determinants.

In light of the shortcomings of the extant literature, this study sought to bridge the knowledge gap by using panel data to study the factors that determine the supply of housing credit in Kenya. It explored the effect of both macroeconomic variables and

firm-specific variables such as deposit liabilities on the supply of housing credit. It also recommends policy around credit supply to increase the effective housing demand.

1.3 Objectives

The broad objective of the study was to determine the factors that influence the supply of housing finance in Kenya. The specific objectives included the following:

1. To determine the effects of banks' return-on-assets ratio, lending rate, capital-to-asset ratio, and deposit liabilities on housing credit supply

2. To determine the effects of GDP and inflation rate on the supply of housing credit in Kenya

3. To recommend policy actions to improve the supply of housing finance in Kenya

Research Hypotheses

1. Banks' return-on-assets ratio and deposit liabilities have a statistically significant and positive effect on housing credit supply

2. Banks' capital-to-asset ratio has a statistically significant and negative effect on housing credit supply

3. Interest rate and inflation rate have a statistically significant and negative effect on housing credit supply

4. GDP growth rate has a statistically significant and positive effect on housing credit supply

Research Questions

1. What are the effects of return-on-assets ratio, lending rate, capital-to-asset ratio, and deposit liabilities on the supply of housing credit in Kenya?

2. What are the effects of GDP and inflation rate on the supply of housing finance in Kenya?

1.4 Justification of the Study

This study is of significance to policy makers, commercial banks, and future research in the following ways. First, a clear understanding of the firm-specific factors that affect the supply of housing finance is expected to enable commercial banks to develop effective management strategies to increase the supply of relevant and affordable mortgage products. Second, the results are expected to enable the government to make appropriate decisions concerning investments in the housing sector and stabilization of the macroeconomic environment to improve the supply of housing finance. Third, the study contributed to the existing literature by determining the factors that influence the supply of housing finance. In this respect, it will act as a basis for future studies in the area of housing finance supply.

1.5 Scope of the Study

This study was limited to the mortgage market in Kenya. In addition, it focused on all the 43 commercial banks. This choice was informed by the fact that these companies are regulated by the CBK; thus, they publish their annual financial results. This facilitated access to data.

1.6 Organization of the Study

Chapter one provided the background of the study. In addition, it covered the research problem, the research objectives, and research questions. Chapter two provides the literature review for the study. Chapter three covers the methodology used in the study. The results of the study are presented in Chapter four. Chapter five provides a discussion of the results, conclusion, and policy recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Theoretical Literature

Conceptually, there are two main types of housing finance namely, debt finance and equity finance. The use of the financing options depends on the characteristics of the assets being financed and transaction costs. Debt financing can be either asset specific or corporate loans. Additionally, it can be secured or unsecured. One of the main challenges facing suppliers of housing finance is lack of information concerning the borrower and the project to be financed. This makes it difficult to determine the ability of the lender to assess the borrower's ability to repay the loan. In this respect, Jumbale (2012) suggests that borrowers' details such as character, capital, capacity, and collateral should be assessed before advancing a loan to minimize default risk.

Akinwunmi et al.(2008)acknowledged that the housing sector is closely co-related to the overall economy and thus macroeconomic instability has negative effect on the housing market. An increase in gross domestic product is an indication of improved economic activities in the country. In this respect, the earnings of individuals and corporations are likely to increase as the GDP grows. The resulting improvement in savings is expected to increase bank deposits. As a result, commercial banks will have more cash to issue loans (housing credit).

Raj (2007) argues that lending interest is also a key determinant of housing finance supply because it determines the profitability of banks or lenders. The main determinant of banks' lending interest rate is changes in assets and liabilities that occur due to interest rate shocks such as high inflation rate. Banks often prefer high interest rates in order to increase their profits. However, high interest rates can have a negative effect on housing finance supply by making loans or mortgages too expensive to the borrowers.

The inflation rate is expected to influence the supply of housing credit in two ways. First, during high inflation the CBK can respond by increasing the CBR. The resulting increase in cost of funds will reduce commercial banks' ability to supply housing credit. The reverse effect would occur during low inflation. Second, according to Ruin (2004) customers will demand high deposit interest rates during high inflation. Thus, deposits are likely to reduce if banks fail to increase deposit interest rates. This in turn reduces the supply of housing credit. The interest rate is the cost that borrowers and commercial banks incur to access funds. Thus, an increase in interest rate is expected to reduce the supply and demand for mortgages and vice versa.

Financial institutions have to meet financial needs placed on them because they compete for deposits from the savings available in the economy. Furthermore, institutions seek to make profit and declare dividends for the shareholders because that is what they are in business for. Thus, Angbazo (1997) argues that commercial banks that exhibit low profitability and liquidity are perceived to present high default risks that increase their cost of borrowing. Generally, banks with a high liquidity can borrow more funds to

supply housing credit at a low cost and vice versa. In addition, profitable banks are likely to attract more deposits and funds from investors than less profitable banks. In this respect, profitability is likely to affect banks' ability to supply housing credit.

1.2 Empirical Literature

Kecia (2008) agreed that access to financial services is a factor in supply of housing finance and there was a need to extend mortgage lending. The general trend in her research was high income earners formally house themselves from their own resources, middle income finance their own construction over time in unplanned areas and the minimal amounts of finance available to high net worth clients through a handful of banks. According to her research, key challenges facing mortgage lenders was access to capital (in part due to limited mortgage sector infrastructure, flexible underwriting, credit bureaus, lack of secondary markets among others). Other factors affecting housing finance was the high real interest rates, unavailability of long term funding which creates interest rate risk and limits the supply of mortgage credit, costly formal sector reforms that push families into the informal sector and contributes to limit the demand for mortgage money and instability of household incomes making long-term debt risky to lenders. There was also significant demand side constraints which include; affordability of loans, informal incomes and tenure insecurity. Her conclusions were based on alternatives to mortgage lending and the genesis of microfinance because the housing delivery and finance systems were inappropriate.

Arcelus and Meltzer(1973) refuted housing policy as a factor in that housing policy had no long-term effect on housing, if there was failure to find an increase in the share of housing in total assets. Their research examined additional types of evidence on availability of credit. i.e. data on wealth and composition of assets and liabilities. They argued that it is the form in which credit becomes available that affects the composition of spending. The large increase in mortgage credit relative to wealth or other liabilities in the past should be accompanied by growth in the share of housing in total assets. The effect of housing policy is generally to influence the demand for housing by changing the terms and conditions of the mortgage contracts or by reducing mortgage rates relative to other rates. Thus, public policy does not have an effect on the availability of mortgage loans rather it makes borrowers substitute mortgage debt for other types of debt.

"The supply of mortgage funds depends on the mortgage lenders profits" (Bust and Yang 2000). In a competitive lending market, equilibrium mortgage values are determined by the risk adjusted rate of return. In general, demand for mortgage funds depends on the household's income and access to credit, quantity of housing and non-housing consumption and on the costs of the various housing finance instruments.

Using time series data over 1983-1994, empirical results were derived from the long-run and short-run and partial equilibrium analyses. ADF unit root tests were performed on each series and a cointegration analysis confined to the long-run stability of the mortgage housing, labor and capital markets. The research concluded that, in the long-run, total

mortgage volume increases with decreases in the basic costs of borrowing and mortgage risk premium at cyclically higher short- term risk-free interest rates.

Lossifov and Khamis (2009) used an exploratory regression analysis to come up with a regression model on determinants of bank credit supply and examined them fully to explain the development in rapid credit growth in developing countries. Focusing on post 2002 credit growth in SSA countries, their studies indicated that over 1997-2007, credit to the private sector grew by almost double.

Singh et al. (2009) used a larger sample of SSA countries and under a set of potential explanatory variables to analyze growth of real bank credit. The dependent variables were growth rate of real bank credit to the private sector and the ratio of bank credit to the private sector non-oil GDP. Explanatory variables included per capita GDP, interest rate, bank funding costs, current account balance, and foreign aid. They concluded that bank credit to the private sector both as a ratio to non-oil GDP and in terms of real growth rate is primarily driven by macroeconomic factors. The magnitudes of the coefficients of nominal interest rates and per capita GDP in PPP USD were sizable and consistent with theoretical priors. Improvements in the efficiency of financial intermediation contributed to credit market developments in SSA. The coefficients of the money multiplier were statistically significant and non-negligible in magnitude. Whereas non-debt creating external financial inflows improves liquidity conditions, they could not in themselves explain the differences in credit market development in SSA countries.

Foreign bank lending to domestic banks had contributed to the observed credit expansion but to a smaller extent than other factors.

Renaud (1984) concurs that the trend in housing finance is continually treated in isolation from other development finance needs yet the housing sector is the single largest investment sector. He addresses the problem of housing finance from the view that financial institutions would like to expand the scope of financial services. In his study, Renaud (1984) measured the level of financial intermediation by getting the value of total annual loans made to the corresponding value of total residential investment estimated in the national accounts. He looks at five vital internal policy areas of liquidity, credit risk, interest rate profitability, and capital management. He concluded that arbitrary controls over interest rates imposed by the government as well as bad monetary and fiscal policies have a severe impact on financial resource mobilization thus impacting housing finance. Low income levels is another factor in that the demand for financial services is low and effective demand for housing and thus economies of scale for growth of housing financial intermediaries are low and as a result there are no differentiated market functions. Finally, there is lack of financial deepening due to non financial constraints such as land titles and inappropriate building codes. All these affect the supply of housing and hence financial services.

Akinwunmi et al.(2009) agrees that finance is a major factor in determining the quality and tenure of housing consumption, the overall financial portfolio of the public, stability and effectiveness of a financial system. In their study, they used time series data and

multiple regression analysis to identify the factors affecting housing finance supply. Competition as a factor leads to efficiency and innovation of mortgage products thus volume of lending would also go up. Capital base, which comprises share capital and reserves, was the second factor. Increase in profits translates to increased retained earnings thus increase in capital base thus lending to housing. The third factor was customer deposits increases, which are short-term affects mortgage lending because they are payable on demand and so difficulty to fund long-term investments with these short term deposits.

2.3 Overview of literature

Most of the studies agree that credit supply is a key link in ensuring the growth of housing but what most of these studies do not do is go into an in depth analysis of housing finance. The studies are also descriptive in nature. This research empirically analyzed housing finance supply in Kenya in an effort to bridge this gap and recommend policy around credit supply with the concurrence that there is indeed the need to grow market lenders and need to access housing finance and hence increase the effective housing demand**.**

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section discusses the study's framework. It also describes the model specification, as well as, the dependent, and independent variables in the study together with their expectations *a priori* and data analysis. In addition, the section describes the sources of the data used in the study.

3.2 Theoretical Framework

Theoretically, the supply of credit is determined by firm specific factors, as well as, factors that are external to the firm. The factors that are external to the firm include among others regulation, GDP growth, inflation, reserve requirements, and competition. Akinwunmi et al. (2008) showed that GDP growth can increase housing credit supply through its positive impact on income and savings. Interest rate influences housing credit supply since it is the cost of borrowing. High interest rates benefit banks in terms of high profits but disadvantage borrowers by raising the cost of credit (Raj, 2007). Similarly, inflation rate is likely to influence housing credit supply since banks have to take it into account when pricing their loans. At the firm level, housing credit is determined by factors that influence banks' ability to access external funds from depositors and lenders, as well as, to increase their earnings for the purpose of raising funds to lend. In this respect, the firm-level variables that influence housing credit supply include bank's asset-to-equity ratio, customer deposits, size of the bank, non-performing loan ratio, return on assets (ROA), and cost of transactions (Kecia, 2008; Lossifov and Khamis (2009).

3.3 Model Specification

According to Baltagi (2004), using panel data is better due to three main reasons. First, panel data allows the researcher to account for the heterogeneity across individual units (banks in this study). Second, panel data provide a large number of data points, which increase the degrees of freedom and reduce co-linearity among the independent variables. This increases the efficiency of the estimated parameters. Finally, it enables the researcher to deal with the bias associated with the omission of time-invariant variables. Given these advantages and following Kupiec et al. (2014) and Pouvelle (2012), this study employed the panel data analysis techniques to determine the factors that influence the supply of housing credit.

In this study, housing credit supply is hypothesized to be a function of bank liquidity, interest rate, profitability, deposit, inflation rate, and GDP. The hypothesized relationship is:

$$HC = f(Lq, Inrate, profitability, Inflrate, Deposits, GDP\ growth) \qquad (1)$$

Where:

HC denotes housing credit supplied by bank i

Lq denotes the liquidity of bank i

$Inrate$ denotes interest rate

$profitability$ is the return-on-assets of bank i

$Deposits$ is bank $i's$ deposit liability

$Inflrate$ is inflation rate

GDP is gross domestic product growth

In mathematical form, equation 1 is expressed as:

$$HC_{it} = \beta_0 + \sum_{n=1}^{N} \beta_n X_{n,i,t} + \varepsilon_{i,t} \qquad (2)$$

Where

i identifies a particular bank

t denotes time (year)

HC is bank $i's$ housing credit supply

β_0 is a constant

$\beta_n, n = 1 \cdots N$ are the N coefficients of the independent variables

$X_{n,i,t}$ are the independent variables listed in equation (1)

$\varepsilon_{i,t}$ denotes white noise error terms

Equation 2 was the basic empirical model for the study.

3.4 The Variables

3.4.1 Dependent Variables

Housing credit (HC) was the dependent variable in the model. In this study, housing credit was proxied by the amount of loans lent by banks for the sole purpose of building or purchasing houses i.e. mortgages. In this respect, housing credit supply was measured as the volume of mortgage (in Kenya shillings)issued by each bank annually in real terms.

3.4.2 Independent Variables

Table 3.1: a summary of the independent variables

Variable	Description	Measurement
Liquidity	Each bank's capital-to-asset ratio	
Interest rate	The average annual lending rate for each bank	Percentage
Inflation rate	The reported annual inflation rate	Percentage
Profitability	The ROA of each bank	
Deposit liabilities	The amount of deposits held by each bank in each financial year	Kenya shillings
GDP growth	The annual change in Kenya's real gross domestic product	Percentage

3.5 Data Sources

The study focused on 43 commercial banks. The data for the firm specific variables namely, housing credit, liquidity, profitability, and deposit liabilities was obtained from annual Central Bank of Kenya supervision reports. Inflation rate, GDP, and interest rate data were also obtained from CBK.

3.6 Study Sample Period

The study used annual data for the period 2005 to 2014. This period was chosen because of the changes in the economy that influenced the supply of housing credit. These include reduction of interbank interest rates to less than 1% in 2003, thereby improving the supply of housing credit; doubling of the size of the real estate industry due to construction boom; rapid economic growth e.g. 7% in 2007; and introduction of new

products such as 105% home purchase financing by various banks. These factors improved both the demand and supply of housing credit in the sample period.

3.7 Data Analysis

Descriptive Statistics

The data analysis process began with a description of the asymptotic properties of the panel data used in this study. This involved calculating the series' mean, standard deviation, variance, as well as, their minimum and maximum values.

The Fixed Effects (FE) and the Random Effects (RE) Models

Panel data is often analyzed using the fixed effects and the random effects models. The FE is often used to explore the relationship between the dependent and independent variables within each cross-sectional unit. The rationale of using this model is that each bank has its unique characteristics such as liquidity that may or may not determine the supply of housing credit. The FE model is given as:

$$HC_{it} = \alpha_i + \beta_1 X_{it} + u_{it} \qquad\qquad (3)$$

Where:

$\alpha_i(i = 1 \cdots n)$ is the intercept for each bank

HC_{it} is housing credit supply;

$i = bank$ and

$t = time$

X_{it} represents the independent variables (liquidity, interest rate, inflation rate, profitability, deposit liabilities, and GDP)

β represents the coefficients of the independent variables

u_{it} is a white noise error term

The model is based on the assumption that the non-observed individual effects are represented by fixed parameters. In addition, the independent variables are not correlated with the idiosyncratic error term.

Unlike the FE, the RE assumes that variation across entities (banks) is random and uncorrelated with the independent variables. RE also assumes that the error terms of individual entities are not correlated with the independent variables. The RE model is given as:

$$HC_{it} = \alpha_i + \beta_1 X_{it} + u_{it} + \varepsilon_{it} \qquad (4)$$

Where

u_{it} is the between-entity (bank) error term

ε_{it} is the within-entity (bank) error term

Other terms are as defined in Equation 3

The RE model is estimated using the generalized least squares (GLS) method

The FE has the weakness of eliminating all the time-invariant variables from the regression. In addition, it may suffer from endogeneity problems, thereby providing biased results. Although RE allows for estimation of time-invariant parameters, it does not allow for interpretation of the coefficients of unobserved heterogeneity. This study will adopt a General Method of Moments (GMM) to exploit the within and between

information of the data in estimating the relationship between housing credit supply and the independent variables.

The GMM technique involves estimating the model in first differences and using the lagged values of the variables as instruments. Thus, the model in levels is given as:

$$HC_{i,t} = \tau HC_{i,t-1} + \gamma X_{i,t} + \varepsilon_{i,t} + \mu_i \qquad (5)$$

Where:

τ and γ are parameters to be estimated, $X_{i,t}$ is a vector of independent variables that are assumed to be weakly exogenous, μ_i are the bank level effects, and $\varepsilon_{i,t}$ is an error term

In first difference, Equation 5 becomes:

$$\Delta HC_{i,t} = \tau \Delta HC_{i,t-1} + \gamma \Delta X_{i,t} + \varepsilon_{i,t} \qquad (6)$$

Diagnostic Tests

Testing for Heteroskedasticity

In the presence of heteroskedasticity, the estimated parameters are likely to be inconsistent. In this respect, the presence of heteroskedasticity in the panels was tested using the modified Wald test for group-wise heteroskedasticity.

CHAPTER FOUR

RESULTS

4.1 Descriptive Statistics

The stochastic properties of the variables used in the study were described by calculating their mean, standard deviation, variance, as well as, their minimum and maximum values. The descriptive statistics are presented in Table 4.1. Each of the variables had 320 observations. Housing credit supply, interest rate, inflation rate, profitability, and GDP had low standard deviation of less than 6. This suggests that they had relatively low volatility/ variance compared to other variables during the sample period.

Table 4.1: Descriptive statistics

Variables	Observations	Mean	Std deviation	Min. value	Max. value
Lnhcs	320	19.44	2.29	14.22	24.70
Liquidity	320	45.09	20.72	12.87	146.67
Interest rate	320	16.85	1.73	13	21.75
Inflation rate	320	11	5.97	3.96	26.24
Profitability	320	2.89	2.04	-7.13	8.8
Lndeposits	320	9.61	1.40	6.29	12.53
GDP growth	320	5.23	2.11	0.23	8.40

4.2 Correlation

The correlation matrix in Table 4.2 shows the relationship between the variables considered in the study. All the variables have a perfect correlation with themselves. All the coefficients except that for correlation between deposits and Lnhcs are less than 0.5. This suggests that multicollinearity was not a major problem in the data. Deposits had a statistically significant correlation with all variables at 5%. Liquidity, interest rate, inflation rate, and profitability had a significant correlation with housing credit supply only. Similarly, GDP had a significant correlation with inflation rate only.

Table 4.2: Correlation matrix

	Lnhcs	Liquidity	Interest rate	Inflation rate	Profitability	Deposits	GDP
Lnhcs	1.0000						
Liquidity	-0.1859* (0.0008)	1.0000					
Interest rate	0.2487* (0.0000)	0.0618 (0.2706)	1.0000				
Inflation rate	-0.1381* (0.0134)	-0.1007 (0.0719)	-0.0976 (0.0812)	1.0000			
Profitability	0.2078* (0.0002)	0.0050 (0.9288)	0.0519 (0.3545)	-0.0936 (0.0948)	1.0000		
Deposits	0.6326* (0.0000)	-0.2101* (0.0002)	0.2030* (0.0003	-0.1461* (0.0089)	0.4777* (0.0000)	1.0000	
GDP growth	0.0368 (0.5120)	0.0735 (0.1898)	0.0060 (0.9155)	-0.2669* (0.0000)	-0.0919 (0.1009)	0.0330 (0.5570)	1.0000

Where star means significant at 5% level and the numbers in parentheses are p values

4.4 Heterosckedasticity

Heterosckedasticity was tested using modified Wald test for group-wise heteroskedasticity. The p-value of 0.0000in table 4.3 clearly shows presence of heteroskedasticity. Thus, robust standard errors were used in the estimation to correct for heteroskedasticity.

Table 4.3: Heteroskedasticity test

Ho: $sigma(i)^2 = sigma^2\ foalli$	
Chi2 (32)	8685.46
Prob> chi2	0.0000

4.5 Fixed Effects Model

The results for the fixed effects model are presented in table 4.4. Liquidity has a positive and significant relationship with credit supply, albeit at 10% level. Interest rate and deposits have a positive relationship with housing credit supply, which is significant 5% level. Inflation rate has a negative and statistically significant effect on housing credit supply. However, GDP and profitability did not have any significant relationship with housing credit supply.

Table 4.4: Fixed effect model results

R-sq: Within = 0.4986				Obs. Per group: Minimum = 10	
Between = 0.3616				Average = 10.0	
Overall = 0.3961				Maximum = 10	
Corr(u_i, xb) = 0.0591				F(6, 31) = 18.38	
				Prob> F = 0.0000	
lnhcs	Coefficients	Robust Std. errors	t	$P > |t|$	
Liquidity	0.0049	0.0027	1.84	0.075	
Interest rate	0.2420	0.0451	5.37	0.000	
Inflation rate	-0.0143	0.0073	-1.94	0.061	
Profitability	0.0236	0.0435	0.54	0.592	
Deposits	0.00002	4.82e-06	5.04	0.000	
GDP growth	0.0083	0.0173	0.48	0.636	
Constant	14.32	0.6555	21.84	0.000	
Sigma_u	1.6058				
Sigma_e	0.8793				
rho	0.7693				

4.6 Random Effects Model

The results of the random effects model are presented in Table 4.5. Interest rate and deposits have a positive and significant relationship with housing credit supply. Inflation rate has a negative and statistically significant relationship with credit supply. However, GDP, liquidity, and profitability have no significant relationship with housing credit supply.

Table 4.5: Random effects model

R-sq: Within = 0.4983			Obs. Per group: Minimum = 10		
Between = 0.3677			Average = 10.0		
Overall = 0.4006			Maximum = 10		
Corr(u_i, x) = 0 (assumed)			Wald chi2(6) = 110.89		
			Prob> chi2 = 0.0000		
lnhcs	Coefficients	Robust Std. errors	z	$P > |z|$	
Liquidity	0.0042	0.0026	1.59	0.113	
Interest rate	0.2382	0.0428	5.56	0.000	
Inflation rate	-0.0142	0.0070	-2.01	0.044	
Profitability	0.0156	0.0419	0.37	0.709	
Deposits	0.00003	4.33e-06	5.76	0.000	
GDP	0.0077	0.0170	0.45	0.652	
Constant	14.4165	0.7683	18.76	0.000	
Sigma_u	1.5335				
Sigma_e	0.8793				
rho	0.7526				

4.7 Hausman Test

The results of the Hausman test based on the FEM and REM estimated without robust standard errors are presented in table 4.6. The p-value of 0.2137 means that the test selected the REM as the appropriate model.

Table 4.6: Hausman test

	Coefficients			
	(b) fe	(B) re	(b-B) difference	Sqrt(diag(V_b-V_B)) S.E
Liquidity	0.0048894	0.0041716	0.0007178	0.004088
Interest rate	0.2420387	0.2381759	0.0038628	0.0050112
Inflation rate	-0.0142778	-0.0141815	-0.0000963	0.0001912
Profitability	0.0235585	0.0156033	0.0079553	0.0051449
Deposits	0.0000243	0.000025	-6.49e-07	6.43e-07
GDP	0.0082715	0.0076859	0.0005856	0.000
b = consistent under Ho and Ha; obtained from xtreg				
B = inconsistent under Ha, efficient under Ho; obtained from xtreg				
Test: Ho: difference in coefficients not systematic				
$chi2(5) = (b - B)'[(V_b - v\_B)^\wedge(-1)](b - B)$ = 8.35				
Prob> chi2 = 0.2137				

4.8 Dynamic Panel Data Estimation

In order to exploit the within and between information of the data in estimating the relationship between housing credit supply and the independent variables, as well as, to address possible endogeneity problem, dynamic panel data estimation was conducted using the General Method of Moments (GMM). The results of the GMM model are presented in Table 4.7. All independent variables except GDP have statistically significant relationship with housing credit supply at 1% level. Liquidity, interest rate, and deposits have a positive relationship with housing credit supply. Profitability and inflation rate, on the other hand, have a negative relationship with housing credit supply. The coefficient of GDP is positive, but insignificant.

Table 4.7: GMM model results

Wald chi2(6)	= 2437.69			
Prob> chi2	= 0.0000			
Lnhcs	Coefficient	Std. errors	z	$P > |z|$
Liquidity	0.0067	0.0018	3.62	0.000
Interest rate	0.2560	0.0208	12.30	0.000
Inflation rate	-0.0265	0.0037	-7.19	0.000
Profitability	-0.1556	0.0281	-5.54	0.000
Deposits	0.00003	9.41e-07	31.68	0.000
GDP growth	0.0109	0.0104	1.05	0.294
Constant	14.23	0.3552	40.07	0.000

CHAPTER FIVE

DISCUSSION

5.1 Effects of Firm Specific Factors on Housing Credit Supply

The positive and statistically significant effect of bank liquidity proxied by capital-to-asset ratio is consistent with theory. It also supports the findings of Martynova (2015) and Labonne and Lame (2014). A high capital-to-asset ratio means that a bank is adequately capitalized. High capitalization ensures financial stability in the financial sector in two ways. First, it reduces the likelihood of a bank falling into a financial distress. Second, it enables banks to avoid collapsing through bad loan provisions in the event of a default. Banks that are financially stable are able to attract deposits and investments from the public, thereby accumulating adequate funds to issue loans. This explains the positive relationship between housing credit supply and liquidity (capital-to-asset ratio).

Bank deposit liabilities has a positive and statistically significant effect on housing credit supply in line with *a priori* expectation and economic theory. The finding also supports the conclusion of Koch (2015) and Parra (2015) who found that an increase in bank deposit liability increased credit supply in the US. Banks normally use a fraction of deposits to issue new credit to their customers. Thus, an increase in deposit liabilities leads to an increase in housing credit supply.

The study found in the GMM results a negative and statistically significant effect of profitability proxied by return-on-assets (ROA) ratio on housing credit supply. This finding is inconsistent with that of Jimenez et al. (2010) who found a positive relationship

between ROA and credit supply. A positive relationship between ROA and credit supply is based on the fact that profitable banks are likely to attract capital and deposits from investors since they are likely to be stable and capable of providing adequate returns on investments. This enables profitable banks to supply more credit than their counterparts that are making losses. However, the negative relationship is to be expected since ROA is calculated by dividing net income with total assets which include loans issued by banks. Thus, an increase in credit supply can lead to a reduction in ROA if income does not rise proportionately due to among other factors high operating costs, low interest rates, and defaults.

5.2 Effect of Macroeconomic Factors

Interest rate has a positive effect on credit supply in the GMM results as was expected *apriori.* This is consistent with Guo and Stepanyan (2011) who showed that lending interest rate had a positive relationship with credit supply. An increase in lending interest rate motivates banks to supply more credit since they expect to earn a high income. In addition, high interest rate enables banks to lend to risky borrowers, thereby increasing the overall supply of credit. Therefore, from a supply perspective an increase in lending rate can increase the supply of credit.

Inflation rate has a significant negative relationship with housing credit supply in the Fixed Effects, Random Effects results, and GMM as was expected *a priori* and in support of economic theory. During high inflation, deposits are likely to reduce since savers are likely to demand for high interest rates to avoid a loss in the value of their money. This

limits bank's access to loanable funds; thus, reducing housing credit supply. Banks might also reduce lending during high inflation since they are forced to charge high interest rates that might lead to losses through an increase in non-performing loans. Inflation can also affect credit supply through the GDP growth channel. A high inflation rate reduces GDP growth. Generally, GDP growth is associated with an increase in economic activities. The resulting increase in income and savings is expected to increase bank deposits, which in turn increases bank supply. Thus, a reduction in GDP growth due to high inflation is likely to reduce credit supply (Imran, 2010). The insignificant relationship in the GMM results supports that of Imran (2010) who found that inflation rate had no effect on credit supply in Pakistan. A possible explanation to the insignificant effect is that banks in Kenya often pass the costs associated with an increase in inflation to borrowers. However, they are reluctant to reduce interest rates during low inflation due to among other factors high operating costs and the need to maintain high profitability. Thus, changes in inflation might not have a major effect on housing credit supply, especially if the demand exists.

5.3 Conclusions

The objective of this study was to determine the effects of firm-level and macroeconomic factors or variables that affect the supply of housing credit in Kenya. The dynamic panel data analysis based on our favored GMM shows that housing credit supply is significantly affected by banks' capital-asset-ratio (liquidity), returns-on-assets (profitability), and deposits liability. Liquidity and deposits liability has a positive effect on housing credit. This leads to the conclusion that banks with high liquidity and deposit

liabilities are more likely to supply housing credit *ceteris paribus* and vice versa. Profitability measured by ROA had a negative effect on housing credit supply. This finding, however, does not mean that high profits limit banks' ability to supply housing credit. It suggests that ROA might reduce if housing credit supply increases without a proportionate increase in bank income.

Macroeconomic factors were also found to have an effect on the supply of housing credit. In particular, interest rate was found to have a positive and significant effect on housing credit supply. This reflects the fact that high lending rates motivate banks to increase housing credit supply. Inflation rate had a negative and statistically significant effect on the supply of housing credit in Kenya.

In future, this study can be extended by other researchers in the following ways. First, future studies can focus on the effect of more firm specific and macroeconomic variables on the supply of housing credit in Kenya. Second, a longer sample period can be considered as more data become available to shed more light on the determinants of housing credit supply in Kenya. Finally, a different estimation strategy such as the use of time series estimation techniques can be used to provide new perspective or findings concerning the determinants of housing credit supply in Kenya.

5.4 Policy Recommendations

Given the results and conclusions discussed in the foregoing paragraphs, the following recommendations should be considered by banks and policymakers to improve the supply of housing credit, with the aim of increasing access to decent and adequate housing. First, the positive effect of liquidity on housing credit supply means that the stability of the banking industry matters. In this respect, the Central Bank should focus on enforcing appropriate minimum capital requirement in the banking industry to ensure that banks are stable. The resulting improvement in savers and investors' confidence will increase deposits, which will in turn increase housing credit supply.

Second, the positive effect of deposits on housing credit supply means that banks have to incentivize the public to save. This calls for striking a balance between reducing interest rate spread and improving profitability. The government through the CBK, on the other hand, should improve regulation of the banking industry to ensure that deposits are safe in financial institutions. This will improve access to loanable funds, thereby increasing housing credit supply.

Third, the Central Bank of Kenya should focus on ensuring price stability by maintaining inflation within the desired target. This will reduce the negative effect of inflation on savings. As a result, deposits and economic growth will increase thereby enabling banks to supply more housing credit.

Finally, banks should focus on lending at an optimal rate that increases their profitability without compromising access to housing credit among citizens. An increase in housing credit supply due to high interest rate can only be realized in the short run when borrowers have no alternative sources of credit. In the long run, banks have to charge affordable interest rates to avoid losing customers. This means that an optimal lending rate is central to sustainable supply of housing credit.

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Appendix

Raw Data

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
African Banking Corporation	2005	21.33	43.10	17.00	10.31	0	4289.00	6.33
African Banking Corporation	2006	22.33	39.04	17.00	14.45	2.1	4081.00	6.99
African Banking Corporation	2007	31.36	39.59	18.00	9.76	2.8	5084.00	0.23
African Banking Corporation	2008	36.23	39.46	18.00	26.24	3.3	5339.00	3.31
African Banking Corporation	2009	33.24	48.49	18.00	9.23	2.82	7180.00	8.40
African Banking Corporation	2010	58.24	45.65	19.00	3.96	4.67	8306.00	6.11
African Banking Corporation	2011	1237.00	43.75	19.00	14.02	4.12	10471.00	4.55
African Banking Corporation	2012	1506.00	40.81	20.00	9.38	2.9	15255.00	5.69
African Banking Corporation	2013	2075.00	41.09	19.00	5.72	2.9	15905.26	5.33
African Banking Corporation	2014	2285.00	35.06	17.00	6.88	2.59	16050.35	5.40
Bank of Africa Kenya Ltd	2005	61.42	37.04	16.00	10.31	2.01	4123.00	6.33
Bank of Africa Kenya Ltd	2006	62.07	33.31	16.00	14.45	0.7	4936.00	6.99
Bank of Africa Kenya Ltd	2007	53.36	26.74	17.00	9.76	2	5523.00	0.23
Bank of Africa Kenya Ltd	2008	54.96	30.95	18.75	26.24	0.7	8701.00	3.31
Bank of Africa Kenya Ltd	2009	74.88	47.15	18.00	9.23	1.53	12405.00	8.40
Bank of Africa Kenya Ltd	2010	106.54	47.94	19.00	3.96	1.81	19784.00	6.11

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Bank of Africa Kenya Ltd	2011	482.00	20.87	19.00	14.02	1.43	23986.00	4.55
Bank of Africa Kenya Ltd	2012	1212.00	22.46	19.50	9.38	1.3	35100.00	5.69
Bank of Africa Kenya Ltd	2013	1735.00	62.91	18.00	5.72	2	36740.09	5.33
Bank of Africa Kenya Ltd	2014	1862.00	63.62	16.50	6.88	1.8	41670.81	5.40
Bank of Baroda	2005	51.12	64.98	15.00	10.31	0.09	8079.00	6.33
Bank of Baroda	2006	52.07	67.66	15.00	14.45	2.9	10122.00	6.99
Bank of Baroda	2007	42.01	54.50	16.00	9.76	3.3	12673.00	0.23
Bank of Baroda	2008	45.26	51.70	17.00	26.24	3.4	15165.00	3.31
Bank of Baroda	2009	45.26	63.99	16.00	9.23	3.24	18634.00	8.40
Bank of Baroda	2010	51.34	67.38	18.00	3.96	5.65	25600.00	6.11
Bank of Baroda	2011	433.60	42.25	18.00	14.02	4.57	30264.00	4.55
Bank of Baroda	2012	434.00	45.93	18.00	9.38	3.6	38382.00	5.69
Bank of Baroda	2013	394.00	71.67	17.00	5.72	4.8	41876.52	5.33
Bank of Baroda	2014	412.00	72.46	16.50	6.88	3.08	48683.19	5.40
Bank of India	2005	25.43	72.99	14.00	10.31	2.35	4789.00	6.33
Bank of India	2006	27.59	66.82	13.22	14.45	2.9	5614.00	6.99
Bank of India	2007	42.89	74.96	15.50	9.76	4.5	7146.00	0.23
Bank of India	2008	109.03	71.54	16.00	26.24	5	8608.00	3.31
Bank of India	2009	2918.83	73.77	15.50	9.23	3.91	10211.00	8.40
Bank of India	2010	310.22	99.06	16.00	3.96	5.04	13005.00	6.11
Bank of India	2011	99.00	76.34	16.00	14.02	4.18	13005.00	4.55
Bank of India	2012	101.00	76.05	17.00	9.38	2.4	18475.00	5.69
Bank of India	2013	91.00	75.60	17.00	5.72	4.1	18282.00	5.33
Bank of India	2014	98.00	76.80	15.60	6.88	4.18	22778.00	5.40
Barclays Bank of Kenya Limited	2005	912.51	32.71	16.00	10.31	1.51	81800.00	6.33

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Barclays Bank of Kenya Limited	2006	968.53	35.14	16.00	14.45	4.4	93837.00	6.99
Barclays Bank of Kenya Limited	2007	1701.92	16.50	14.00	9.76	4.2	109097.00	0.23
Barclays Bank of Kenya Limited	2008	2365.94	25.32	18.00	26.24	4.7	126408.00	3.31
Barclays Bank of Kenya Limited	2009	2365.94	42.67	16.00	9.23	5.3	125869.00	8.40
Barclays Bank of Kenya Limited	2010	3065.27	55.87	15.00	3.96	6.24	123826.00	6.11
Barclays Bank of Kenya Limited	2011	4371.80	57.76	15.00	14.02	7.18	124207.00	4.55
Barclays Bank of Kenya Limited	2012	4341.00	53.35	17.00	9.38	7	137915.00	5.69
Barclays Bank of Kenya Limited	2013	4640.00	42.25	16.50	5.72	5.8	151122.00	5.33
Barclays Bank of Kenya Limited	2014	4931.00	46.58	16.00	6.88	3.89	164779.00	5.40
Cfc Stanbic Bank	2005	648.35	37.95	14.00	10.31	4.18	12016.00	6.33
Cfc Stanbic Bank	2006	652.42	50.47	13.00	14.45	2.1	19760.00	6.99
Cfc Stanbic Bank	2007	2725.15	20.77	21.75	9.76	3.1	22692.00	0.23
Cfc Stanbic Bank	2008	5349.93	37.12	18.50	26.24	1.5	61529.00	3.31
Cfc Stanbic Bank	2009	6137.24	31.98	16.00	9.23	1.35	55786.00	8.40
Cfc Stanbic Bank	2010	7213.45	23.13	17.00	3.96	1.96	72778.00	6.11

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Cfc Stanbic Bank	2011	8807.00	17.69	17.00	14.02	2.23	74335.00	4.55
Cfc Stanbic Bank	2012	9488.00	23.40	18.00	9.38	3.5	75633.00	5.69
Cfc Stanbic Bank	2013	11621.00	46.93	18.00	5.72	4.1	95708.41	5.33
Cfc Stanbic Bank	2014	13821.00	41.14	17.00	6.88	5.64	96830.28	5.40
Chase Bank (Kenya) Limited	2005	281.16	19.88	14.00	10.31	2.22	1663.00	6.33
Chase Bank (Kenya) Limited	2006	283.19	48.17	13.60	14.45	2.3	3235.00	6.99
Chase Bank (Kenya) Limited	2007	380.88	20.57	18.00	9.76	3	4276.00	0.23
Chase Bank (Kenya) Limited	2008	412.95	18.65	17.00	26.24	2.4	7147.00	3.31
Chase Bank (Kenya) Limited	2009	483.11	39.81	16.00	9.23	2.42	10117.00	8.40
Chase Bank (Kenya) Limited	2010	528.74	44.16	18.00	3.96	2.45	16880.00	6.11
Chase Bank (Kenya) Limited	2011	777.00	35.97	18.00	14.02	2.33	24822.00	4.55
Chase Bank (Kenya) Limited	2012	1531.00	68.92	20.00	9.38	2.7	36506.00	5.69
Chase Bank (Kenya) Limited	2013	1947.00	31.32	19.00	5.72	2.9	79124.21	5.33
Chase Bank (Kenya) Limited	2014	2053.00	28.35	18.00	6.88	5.22	51941.73	5.40
Commercial Bank of Africa Ltd	2005	359.48	49.23	19.00	10.31	-6.76	25088.00	6.33
Commercial Bank of Africa Ltd	2006	361.58	60.74	19.00	14.45	2.9	32517.00	6.99
Commercial Bank of Africa Ltd	2007	446.91	48.22	18.00	9.76	3.5	34345.00	0.23
Commercial Bank of Africa Ltd	2008	911.49	33.50	19.00	26.24	3.3	44803.00	3.31

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Commercial Bank of Africa Ltd	2009	1113.26	42.15	17.00	9.23	3	49227.00	8.40
Commercial Bank of Africa Ltd	2010	1158.81	37.71	19.00	3.96	4.24	60277.00	6.11
Commercial Bank of Africa Ltd	2011	2769.00	30.53	19.00	14.02	3.58	67747.00	4.55
Commercial Bank of Africa Ltd	2012	2375.00	32.42	20.00	9.38	4	79996.00	5.69
Commercial Bank of Africa Ltd	2013	2889.00	66.68	19.00	5.72	3.6	90992.90	5.33
Commercial Bank of Africa Ltd	2014	3120.00	31.61	18.00	6.88	4.44	122044.14	5.40
Consolidated Bank of Kenya Ltd	2005	184.22	41.69	15.50	10.31	1.68	1950.00	6.33
Consolidated Bank of Kenya Ltd	2006	203.12	31.34	15.50	14.45	0.4	2463.00	6.99
Consolidated Bank of Kenya Ltd	2007	205.22	21.42	14.00	9.76	0.5	2851.00	0.23
Consolidated Bank of Kenya Ltd	2008	197.62	17.29	19.00	26.24	1.5	3279.00	3.31
Consolidated Bank of Kenya Ltd	2009	207.62	41.76	18.00	9.23	1.54	4882.00	8.40
Consolidated Bank of Kenya Ltd	2010	794.52	36.08	18.50	3.96	2.46	8008.00	6.11
Consolidated Bank of Kenya Ltd	2011	2764.00	112.53	18.50	14.02	1.61	12010.00	4.55

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Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Consolidated Bank of Kenya Ltd	2012	3848.00	103.63	19.50	9.38	1	13325.00	5.69
Consolidated Bank of Kenya Ltd	2013	3686.00	31.80	18.00	5.72	-0.8	11711.10	5.33
Consolidated Bank of Kenya Ltd	2014	3792.00	39.30	17.00	6.88	-1.02	10641.96	5.40
Co-Operative Bank	2005	55.52	34.05	19.50	10.31	-0.25	43354.00	6.33
Co-Operative Bank	2006	52.57	38.02	19.00	14.45	1.6	48183.00	6.99
Co-Operative Bank	2007	53.23	31.73	15.00	9.76	3	54775.00	0.23
Co-Operative Bank	2008	54.62	28.02	13.50	26.24	3.7	65854.00	3.31
Co-Operative Bank	2009	55.52	42.74	13.00	9.23	3.26	91519.00	8.40
Co-Operative Bank	2010	246.32	40.39	14.00	3.96	3.61	123878.00	6.11
Co-Operative Bank	2011	2165.90	27.42	18.00	14.02	3.68	142705.00	4.55
Co-Operative Bank	2012	6643.00	35.73	20.50	9.38	4.8	162267.00	5.69
Co-Operative Bank	2013	5911.00	34.81	19.00	5.72	4.7	216174.31	5.33
Co-Operative Bank	2014	6251.00	34.49	17.50	6.88	4.43	174776.23	5.40
Credit Bank Ltd	2005	2.81	25.50	14.00	10.31	0.99	2033.00	6.33
Credit Bank Ltd	2006	2.91	48.42	16.00	14.45	3.4	1960.00	6.99
Credit Bank Ltd	2007	2.71	57.39	15.00	9.76	3.7	2657.00	0.23
Credit Bank Ltd	2008	10.78	48.01	17.00	26.24	2.1	2774.00	3.31
Credit Bank Ltd	2009	12.75	29.43	17.00	9.23	2.15	2793.00	8.40
Credit Bank Ltd	2010	45.90	32.96	18.00	3.96	0.74	3258.00	6.11
Credit Bank Ltd	2011	135.30	86.68	18.00	14.02	0.95	3937.00	4.55

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Credit Bank Ltd	2012	125.30	79.82	19.50	9.38	1.3	4781.00	5.69
Credit Bank Ltd	2013	112.30	42.13	18.00	5.72	1	5511.80	5.33
Credit Bank Ltd	2014	135.10	36.02	16.00	6.88	0.21	7213.08	5.40
Development Bank of Kenya	2005	667.11	78.98	15.00	10.31	2.65	719.00	6.33
Development Bank of Kenya	2006	671.81	51.30	15.00	14.45	3.4	1317.00	6.99
Development Bank of Kenya	2007	673.81	12.87	16.00	9.76	3.1	1591.00	0.23
Development Bank of Kenya	2008	683.81	18.19	17.00	26.24	2.6	2200.00	3.31
Development Bank of Kenya	2009	1709.60	73.34	17.00	9.23	2.27	2379.00	8.40
Development Bank of Kenya	2010	1711.01	74.76	18.00	3.96	2.22	4095.00	6.11
Development Bank of Kenya	2011	2272.70	57.14	19.00	14.02	1.37	4171.00	4.55
Development Bank of Kenya	2012	2617.00	46.95	20.00	9.38	0.8	6953.00	5.69
Development Bank of Kenya	2013	2711.00	59.78	18.50	5.72	1.8	8418.68	5.33
Development Bank of Kenya	2014	2923.00	64.17	18.00	6.88	1.49	8464.55	5.40
Diamond Trust Bank	2005	112.42	31.53	18.00	10.31	5.05	13279.00	6.33
Diamond Trust Bank	2006	120.42	37.10	18.00	14.45	2.6	16726.00	6.99
Diamond Trust Bank	2007	130.42	28.41	16.00	9.76	2.8	29103.00	0.23
Diamond Trust Bank	2008	225.68	31.09	17.00	26.24	3.1	45023.00	3.31
Diamond Trust Bank	2009	350.08	25.26	18.00	9.23	3.44	52834.00	8.40
Diamond Trust Bank	2010	562.31	34.21	19.00	3.96	4.9	66197.00	6.11
Diamond Trust Bank	2011	300.00	56.65	19.00	14.02	4.19	59772.00	4.55

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Diamond Trust Bank	2012	423.00	44.26	19.50	9.38	4.9	72505.00	5.69
Diamond Trust Bank	2013	442.00	33.51	18.25	5.72	4.9	84671.82	5.33
Diamond Trust Bank	2014	561.00	36.52	18.00	6.88	4.31	101593.51	5.40
Ecobank Kenya Ltd	2005	1160.85	31.07	17.00	10.31	1.49	6757.00	6.33
Ecobank Kenya Ltd	2006	1215.87	30.64	17.00	14.45	0.4	7011.00	6.99
Ecobank Kenya Ltd	2007	1143.67	29.87	18.00	9.76	1	7551.00	0.23
Ecobank Kenya Ltd	2008	1135.17	34.40	18.00	26.24	0.5	8351.00	3.31
Ecobank Kenya Ltd	2009	969.01	37.46	18.00	9.23	-7.13	10819.00	8.40
Ecobank Kenya Ltd	2010	1203.57	66.73	17.00	3.96	0.7	16494.00	6.11
Ecobank Kenya Ltd	2011	2269.00	52.69	18.00	14.02	0.45	16566.00	4.55
Ecobank Kenya Ltd	2012	1136.00	51.10	20.00	9.38	-4.8	21475.00	5.69
Ecobank Kenya Ltd	2013	1393.00	55.21	18.50	5.72	-3.3	25350.57	5.33
Ecobank Kenya Ltd	2014	1523.00	56.40	17.50	6.88	-2.78	32413.99	5.40
Equity Bank	2005	28.55	51.76	18.00	10.31	2.54	8798.00	6.33
Equity Bank	2006	28.56	38.99	18.00	14.45	4.9	16337.00	6.99
Equity Bank	2007	29.56	80.84	15.00	9.76	4.3	31536.00	0.23
Equity Bank	2008	299.27	44.30	15.00	26.24	6.1	50335.00	3.31
Equity Bank	2009	299.27	31.29	15.00	9.23	5.66	69825.00	8.40
Equity Bank	2010	673.27	25.86	17.00	3.96	6.95	104431.00	6.11
Equity Bank	2011	3387.00	39.90	18.00	14.02	6.84	121774.00	4.55
Equity Bank	2012	3684.00	44.83	20.50	9.38	7.4	140286.00	5.69
Equity Bank	2013	5277.00	34.02	20.00	5.72	7.7	158527.02	5.33
Equity Bank	2014	6213.00	29.99	19.00	6.88	7.26	202484.76	5.40

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Fidelity Commercial Bank	2005	10.76	28.98	14.00	10.31	4.06	1384.00	6.33
Fidelity Commercial Bank	2006	10.88	27.57	14.00	14.45	1	1977.00	6.99
Fidelity Commercial Bank	2007	10.98	29.65	15.00	9.76	1.4	2749.00	0.23
Fidelity Commercial Bank	2008	25.77	28.18	16.00	26.24	1.7	3778.00	3.31
Fidelity Commercial Bank	2009	69.80	34.43	14.00	9.23	0.94	4888.00	8.40
Fidelity Commercial Bank	2010	113.87	47.33	16.00	3.96	4.59	7204.00	6.11
Fidelity Commercial Bank	2011	315.10	37.40	16.00	14.02	2.79	9490.00	4.55
Fidelity Commercial Bank	2012	261.00	34.20	18.50	9.38	0.9	10527.00	5.69
Fidelity Commercial Bank	2013	117.00	32.77	17.00	5.72	2.5	11263.05	5.33
Fidelity Commercial Bank	2014	123.00	34.85	16.00	6.88	1.88	13559.35	5.40
Giro Bank Ltd	2005	18.66	28.90	14.00	10.31	1.1	4334.00	6.33
Giro Bank Ltd	2006	19.71	38.82	14.30	14.45	1	4493.00	6.99
Giro Bank Ltd	2007	51.41	39.50	15.00	9.76	0.7	4915.00	0.23
Giro Bank Ltd	2008	52.31	35.02	16.00	26.24	2	5127.00	3.31
Giro Bank Ltd	2009	48.54	51.18	16.00	9.23	2.63	5943.00	8.40
Giro Bank Ltd	2010	43.17	58.21	17.00	3.96	6.2	8308.00	6.11
Giro Bank Ltd	2011	414.10	46.86	17.00	14.02	2.79	10069.00	4.55

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Giro Bank Ltd	2012	222.00	44.68	17.00	9.38	1.7	10420.00	5.69
Giro Bank Ltd	2013	393.00	50.11	16.00	5.72	2.8	11457.18	5.33
Giro Bank Ltd	2014	451.00	47.63	15.00	6.88	5.63	12451.36	5.40
Guardian Bank	2005	8.50	22.51	15.00	10.31	-0.09	3453.00	6.33
Guardian Bank	2006	9.00	37.92	16.00	14.45	0.8	3995.00	6.99
Guardian Bank	2007	10.00	36.66	15.00	9.76	0.4	4544.00	0.23
Guardian Bank	2008	7.50	30.03	17.00	26.24	0.7	4586.00	3.31
Guardian Bank	2009	6.22	38.45	17.00	9.23	0.83	5760.00	8.40
Guardian Bank	2010	3.40	37.09	18.00	3.96	1.39	6971.00	6.11
Guardian Bank	2011	140.60	31.56	18.00	14.02	1.92	7648.00	4.55
Guardian Bank	2012	234.00	33.27	18.00	9.38	1.9	10374.00	5.69
Guardian Bank	2013	257.00	34.63	17.50	5.72	3	11181.14	5.33
Guardian Bank	2014	263.00	36.00	17.00	6.88	3.13	12643.34	5.40
Habib Bank Ltd	2005	24.05	89.98	16.00	10.31	0.99	2344.00	6.33
Habib Bank Ltd	2006	25.09	85.09	16.00	14.45	2.8	2433.00	6.99
Habib Bank Ltd	2007	29.40	72.37	16.00	9.76	3.2	2730.00	0.23
Habib Bank Ltd	2008	34.70	70.25	16.00	26.24	3.6	3024.00	3.31
Habib Bank Ltd	2009	25.15	87.85	17.00	9.23	3.85	3525.00	8.40
Habib Bank Ltd	2010	23.30	88.07	17.00	3.96	3.05	3933.00	6.11
Habib Bank Ltd	2011	17.00	51.13	18.00	14.02	2.91	4718.00	4.55
Habib Bank Ltd	2012	10.00	76.53	19.00	9.38	4.2	5195.00	5.69
Habib Bank Ltd	2013	12.00	64.92	17.50	5.72	4.3	8336.34	5.33
Habib Bank Ltd	2014	13.00	64.09	16.50	6.88	2.08	8947.88	5.40
Imperial Bank Limited	2005	22.45	31.41	14.00	10.31	0.64	5687.00	6.33
Imperial Bank Limited	2006	23.04	30.46	16.00	14.45	3.1	7074.00	6.99
Imperial Bank Limited	2007	51.24	22.47	16.00	9.76	4.6	8588.00	0.23

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Imperial Bank Limited	2008	133.52	24.53	16.00	26.24	4.9	10414.00	3.31
Imperial Bank Limited	2009	121.39	39.42	17.00	9.23	5.09	12270.00	8.40
Imperial Bank Limited	2010	128.60	49.82	18.00	3.96	6.43	13678.00	6.11
Imperial Bank Limited	2011	147.60	27.65	18.50	14.02	6.37	19245.00	4.55
Imperial Bank Limited	2012	293.00	30.11	20.00	9.38	5.5	27581.00	5.69
Imperial Bank Limited	2013	459.00	39.97	19.00	5.72	5.8	34064.97	5.33
Imperial Bank Limited	2014	472.00	28.19	17.50	6.88	4.35	47147.81	5.40
Investments and Mortgages	2005	213.96	31.25	13.00	10.31	3.08	14799.00	6.33
Investments and Mortgages	2006	246.50	29.44	13.50	14.45	3.1	18220.00	6.99
Investments and Mortgages	2007	323.37	27.48	14.00	9.76	4.3	23626.00	0.23
Investments and Mortgages	2008	502.94	22.14	15.00	26.24	4.4	28355.00	3.31
Investments and Mortgages	2009	502.94	45.74	14.00	9.23	3.94	34799.00	8.40
Investments and Mortgages	2010	732.41	23.82	14.00	3.96	4.8	45995.00	6.11
Investments and Mortgages	2011	1546.30	45.53	15.00	14.02	5.8	56944.00	4.55
Investments and Mortgages	2012	2309.00	45.63	17.00	9.38	5.2	65640.00	5.69
Investments and Mortgages	2013	2743.00	25.97	15.00	5.72	5.5	74494.28	5.33
Investments and Mortgages	2014	3056.00	24.38	14.50	6.88	5.44	86620.93	5.40
Kenya Commercial Bank Ltd	2005	3840.80	41.10	18.00	10.31	2	64217.00	6.33

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Kenya Commercial Bank Ltd	2006	4077.36	38.55	18.10	14.45	2.6	77193.00	6.99
Kenya Commercial Bank Ltd	2007	6264.32	28.45	15.00	9.76	3.1	94392.00	0.23
Kenya Commercial Bank Ltd	2008	9703.07	18.55	16.00	26.24	3	126691.00	3.31
Kenya Commercial Bank Ltd	2009	15639.61	25.36	17.00	9.23	3.57	162545.00	8.40
Kenya Commercial Bank Ltd	2010	17974.35	38.38	17.00	3.96	5.17	196975.00	6.11
Kenya Commercial Bank Ltd	2011	18105.00	16.88	18.00	14.02	4.98	210174.00	4.55
Kenya Commercial Bank Ltd	2012	31455.00	22.01	19.50	9.38	5.2	223493.00	5.69
Kenya Commercial Bank Ltd	2013	34030.00	35.59	18.00	5.72	5.5	237212.78	5.33
Kenya Commercial Bank Ltd	2014	36410.00	33.51	17.00	6.88	5.93	276740.77	5.40
Middle East Bank (K) Limited	2005	3.91	25.50	17.00	10.31	1.22	2033.00	6.33
Middle East Bank (K) Limited	2006	4.17	48.42	17.00	14.45	1.9	1960.00	6.99
Middle East Bank (K) Limited	2007	5.13	57.39	18.00	9.76	2.8	2657.00	0.23
Middle East Bank (K) Limited	2008	12.86	48.01	18.00	26.24	0.9	2774.00	3.31

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Middle East Bank (K) Limited	2009	17.73	29.43	17.00	9.23	1.37	2793.00	8.40
Middle East Bank (K) Limited	2010	34.53	32.96	17.00	3.96	5.11	3258.00	6.11
Middle East Bank (K) Limited	2011	35.53	86.68	18.00	14.02	1.99	3937.00	4.55
Middle East Bank (K) Limited	2012	46.00	79.82	19.00	9.38	0.8	4781.00	5.69
Middle East Bank (K) Limited	2013	14.00	37.66	17.00	5.72	1.4	3649.00	5.33
Middle East Bank (K) Limited	2014	16.00	45.92	16.00	6.88	1.07	4127.00	5.40
National Bank Of Kenya	2005	254.88	18.34	14.00	10.31	2.06	25326.00	6.33
National Bank Of Kenya	2006	260.88	20.56	14.00	14.45	1.3	29517.00	6.99
National Bank Of Kenya	2007	262.85	27.54	15.00	9.76	3.1	34772.00	0.23
National Bank Of Kenya	2008	270.88	24.69	15.00	26.24	4	34278.00	3.31
National Bank Of Kenya	2009	272.88	84.80	14.00	9.23	4.13	41995.00	8.40
National Bank Of Kenya	2010	568.28	51.61	14.00	3.96	4.49	47805.00	6.11
National Bank Of Kenya	2011	3100.00	21.67	15.00	14.02	3.56	56728.00	4.55
National Bank Of Kenya	2012	4123.00	39.19	17.00	9.38	1.7	55191.00	5.69
National Bank Of Kenya	2013	5150.00	57.19	16.50	5.72	1.9	77992.82	5.33
National Bank Of Kenya	2014	53412.00	35.60	15.00	6.88	4.24	104733.71	5.40

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Nic Bank	2005	120.87	28.09	17.00	10.31	1.32	16575.00	6.33
Nic Bank	2006	121.90	35.39	17.00	14.45	2.3	21978.00	6.99
Nic Bank	2007	122.90	28.93	17.00	9.76	3.2	24806.00	0.23
Nic Bank	2008	379.78	26.87	20.00	26.24	3.4	35238.00	3.31
Nic Bank	2009	477.34	28.27	18.00	9.23	3.3	39514.00	8.40
Nic Bank	2010	517.10	26.17	19.00	3.96	4.41	48492.00	6.11
Nic Bank	2011	248.00	53.97	19.00	14.02	4.57	62008.00	4.55
Nic Bank	2012	715.00	51.42	19.00	9.38	4.2	77466.00	5.69
Nic Bank	2013	1618.00	30.49	18.00	5.72	4.6	92791.08	5.33
Nic Bank	2014	1849.00	35.32	17.00	6.88	4.47	84236.19	5.40
Oriental Commercial Bank	2005	1.72	71.74	15.00	10.31	1.73	537.00	6.33
Oriental Commercial Bank	2006	1.89	44.07	15.00	14.45	-3.1	733.00	6.99
Oriental Commercial Bank	2007	1.50	62.59	16.00	9.76	8.8	823.00	0.23
Oriental Commercial Bank	2008	2.01	46.89	16.00	26.24	2.5	1314.00	3.31
Oriental Commercial Bank	2009	2.32	44.18	17.00	9.23	0.97	2012.00	8.40
Oriental Commercial Bank	2010	12.28	40.68	18.00	3.96	4.01	3266.00	6.11
Oriental Commercial Bank	2011	20.60	146.67	19.00	14.02	3.83	3694.00	4.55
Oriental Commercial Bank	2012	17.00	143.05	19.00	9.38	1.8	4806.00	5.69

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Oriental Commercial Bank	2013	9.00	43.90	18.50	5.72	2.5	5377.26	5.33
Oriental Commercial Bank	2014	13.00	42.59	18.00	6.88	0.73	6231.44	5.40
Paramount Universal Bank Ltd	2005	96.85	48.98	14.00	10.31	-3.27	1960.00	6.33
Paramount Universal Bank Ltd	2006	108.43	31.59	15.00	14.45	1	3308.00	6.99
Paramount Universal Bank Ltd	2007	122.62	29.80	15.00	9.76	1.3	4484.00	0.23
Paramount Universal Bank Ltd	2008	179.15	22.47	17.00	26.24	1.4	4502.00	3.31
Paramount Universal Bank Ltd	2009	160.01	32.45	16.00	9.23	1.23	4436.00	8.40
Paramount Universal Bank Ltd	2010	193.78	30.63	18.00	3.96	6.35	5454.00	6.11
Paramount Universal Bank Ltd	2011	117.00	30.92	18.00	14.02	2.39	6446.00	4.55
Paramount Universal Bank Ltd	2012	64.00	37.72	19.00	9.38	1.2	6650.00	5.69
Paramount Universal Bank Ltd	2013	56.00	63.84	18.60	5.72	1.2	6600.52	5.33
Paramount Universal Bank Ltd	2014	58.00	61.43	17.00	6.88	1.86	8048.01	5.40
Prime Bank Limited	2005	27.55	40.94	16.00	10.31	0.64	5799.00	6.33
Prime Bank Limited	2006	29.46	39.01	16.00	14.45	1.5	8289.00	6.99
Prime Bank Limited	2007	44.37	38.11	15.00	9.76	2.2	10358.00	0.23
Prime Bank Limited	2008	42.93	40.12	15.00	26.24	2.3	15662.00	3.31

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Prime Bank Limited	2009	98.40	49.30	17.00	9.23	2.33	19184.00	8.40
Prime Bank Limited	2010	227.55	24.71	17.00	3.96	2.37	25512.00	6.11
Prime Bank Limited	2011	262.00	46.38	17.00	14.02	3.07	28872.00	4.55
Prime Bank Limited	2012	350.00	40.02	17.00	9.38	2.7	36175.00	5.69
Prime Bank Limited	2013	473.00	45.71	16.00	5.72	3.8	40562.03	5.33
Prime Bank Limited	2014	486.00	39.66	15.00	6.88	1.9	45075.05	5.40
Standard Chartered	2005	2835.65	52.84	16.00	10.31	2.5	59683.00	6.33
Standard Chartered	2006	2909.88	55.58	17.00	14.45	3.3	64879.00	6.99
Standard Chartered	2007	3646.07	55.40	19.00	9.76	5.3	73841.00	0.23
Standard Chartered	2008	4424.81	56.66	18.00	26.24	4.7	76898.00	3.31
Standard Chartered	2009	4897.84	59.94	19.00	9.23	5.39	86774.00	8.40
Standard Chartered	2010	4960.42	59.98	18.00	3.96	5.37	100504.00	6.11
Standard Chartered	2011	7753.00	29.53	18.00	14.02	5.03	122323.00	4.55
Standard Chartered	2012	8061.00	40.70	19.50	9.38	5.9	140525.00	5.69
Standard Chartered	2013	10099.00	42.97	19.00	5.72	6	154720.01	5.33
Standard Chartered	2014	12862.00	47.76	18.00	6.88	6.42	154066.93	5.40
Trans-National Bank	2005	16.44	130.86	14.00	10.31	3.36	5283.00	6.33
Trans-National Bank	2006	17.21	73.25	14.00	14.45	1.6	6535.00	6.99
Trans-National Bank	2007	79.86	135.21	15.00	9.76	2.2	690.00	0.23

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Trans-National Bank	2008	134.49	103.18	17.75	26.24	3.3	775.00	3.31
Trans-National Bank	2009	190.00	66.53	17.00	9.23	2.36	867.00	8.40
Trans-National Bank	2010	69.07	75.55	18.00	3.96	3.33	1009.00	6.11
Trans-National Bank	2011	70.70	89.74	18.00	14.02	4.05	1060.00	4.55
Trans-National Bank	2012	192.00	65.22	18.00	9.38	3.7	1122.00	5.69
Trans-National Bank	2013	98.00	52.56	17.50	5.72	2.3	7180.78	5.33
Trans-National Bank	2014	103.00	44.48	17.50	6.88	0.33	7666.38	5.40
Victoria Commercial Bank Ltd	2005	19.56	55.99	14.00	10.31	2.23	3585.00	6.33
Victoria Commercial Bank Ltd	2006	20.26	53.28	13.00	14.45	2.7	3654.00	6.99
Victoria Commercial Bank Ltd	2007	25.89	43.76	13.50	9.76	3.6	3430.00	0.23
Victoria Commercial Bank Ltd	2008	17.34	31.23	14.00	26.24	3.8	3582.00	3.31
Victoria Commercial Bank Ltd	2009	86.33	31.32	13.50	9.23	4.22	4073.00	8.40
Victoria Commercial Bank Ltd	2010	61.08	33.96	15.00	3.96	5	4935.00	6.11
Victoria Commercial Bank Ltd	2011	65.60	41.89	16.00	14.02	4.31	5907.00	4.55

Bank	Year	HCS (in MN)	Liquidity	Interest rate	Inflation rate	Profitability (ROA)	deposits (in MN)	GDP
Victoria Commercial Bank Ltd	2012	32.00	41.91	17.00	9.38	4.8	7561.00	5.69
Victoria Commercial Bank Ltd	2013	9.00	38.72	16.50	5.72	4.3	9043.65	5.33
Victoria Commercial Bank Ltd	2014	14.00	38.48	16.50	6.88	5.29	12288.66	5.40
HFCK	2005	8210.00	31.84	13.50	10.31	1	8434.00	6.33
HFCK	2006	8330.00	25.94	14.50	14.45	1	7619.00	6.99
HFCK	2007	8960.00	19.70	15.00	9.76	1	8777.00	0.23
HFCK	2008	11300.00	29.30	15.00	26.24	1.3	10064.00	3.31
HFCK	2009	15100.00	24.03	16.00	9.23	1.83	12219.00	8.40
HFCK	2010	16900.00	55.35	16.50	3.96	1.91	15945.00	6.11
HFCK	2011	25777.00	75.00	17.25	14.02	3.1	18674.00	4.55
HFCK	2012	30293.00	69.39	18.00	9.38	2.2	22968.00	5.69
HFCK	2013	35279.00	33.42	17.00	5.72	2.6	26588.85	5.33
HFCK	2014	37520.00	32.69	15.50	6.88	2.12	36310.47	5.40