THE EFFECT OF NON-PERFORMING LOANS ON THE SIZE OF THE LOAN PORTFOLIO IN COMMERCIAL BANKS IN KENYA

BY

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DECLARATION

I declare that this research project is my original work and to the best of my knowledge it has not been submitted to any other College, University or Institution for academic credit

SIGNATURE: ………………………   DATE: …………………………

YVONNE G. KINOTI

REG: D63/75852/2012

This research project has been presented for examination with my approval as the University supervisor.

SIGNATURE: …………………………   DATE: …………………………

DR. MIRIE MWANGI

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DEDICATION

I dedicate this project to my parents who inspired and pushed me to put my best foot forward, my brother through whose eyes I am nothing short of brilliant and my friends who constantly reminded me that there is a big picture.

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ABBREVIATIONS

CBK - Central Bank of Kenya

CBR - Central Bank Rate

GDP - Gross Domestic Product

KBRR - Kenya Banks' Reference Rate

NPLs - Non-performing Loans

NSE - Nairobi Securities Exchange

ROA - Return on Assets

ROCE - Return on Capital Employed

ABSTRACT

The 43 licensed commercial banks, as governed by the Central Bank of Kenya, play a key role in the Kenyan economy and as such, the factors affecting their main business of lending are of great importance. The study sought to determine the effect of non-performing loans on the size of the loan portfolio within these banks by using a census study with the population consisting of all the commercial banks in Kenya. Secondary data was collected from the financial statements of these banks and multiple linear regression analysis used to analyse the data. The study revealed that there is a negative and insignificant correlation between non-performing loans and the size of the loan portfolio. In addition, there is a positive and significant correlation between the volume of deposits and size of the loan portfolio and a negative significant correlation between the share capital investment and size of the loan portfolio as well as other earnings assets and size of the loan portfolio. The statistically insignificant effect of the non-performing loans on the size of the loan portfolio is expected to be due to the non-performing loans being below the acceptable threshold level of the commercial banks. The study recommends that commercial banks in Kenya maintain their non-performing loans at a level below the acceptable threshold in order to limit the effect of these loans on the size of the loan portfolio.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

A simple definition of a non-performing loan (NPL) is a loan that is in default or close to being in default. Many loans become non-performing after being in default for 90 days, but this can depend on the contract terms. A loan is non-performing when payments of interest and principal are past due by 90 days or more, or at least 90 days of interest payments have been capitalized, refinanced or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons to doubt that payments will be made in full (International Monetary Fund, 2005). The World Bank stipulates that the loan amount recorded as nonperforming should be the gross value of the loan as recorded on the balance sheet, not just the amount that is overdue.

The size of a commercial bank's loan portfolio is measured by the closing financial value of the loan assets in the bank's balance sheet which have been generated by lending and advancing amounts to customers. The loan portfolio represents an important component of a bank's total assets as these assets generate huge interest income which is a critical measure of the bank's financial performance and stability (Vatansever and Hepsen, 2013).

Banks act as brokers between supply and demand of securities, and they transform short-term deposits into medium and long-term credits. Their central role is to make the community's surplus of deposits and investments useful by lending it to people for various investment purposes such as company growth, education, houses etc. Because of

the central role of money, banks had and still have an important role in the economy (Gestel and Baesens, 2009).

Non-performing loans in commercial banks in Kenya constituted 5% of the total loan portfolio in the banks' balance sheets as at December 2014 and have been growing yearly in the banks as evidenced by a 32.9 percent growth between December 2013 and December 2014 (CBK Monthly Economic Review December 2014). This study will be conducted on commercial banks in Kenya to ascertain whether a growth in the non-performing loans will have an impact on the size of the loan portfolio within the 43 licensed commercial banks in Kenya.

1.1.1 Non-Performing Loans

Non-performing loans (NPLs) are normally measured using the NPL ratio, which is the ratio of NPLs to total loans in the bank's balance sheet. The NPL ratio is a standard and widely used statistic measuring financial performance of banking institutions and is frequently employed to assess and compare the quality of loan portfolios, analyze lending policies and efficiency of banking sectors, price bank equity, predict bank failures and construct early warning models of financial instability (Serwa, 2013).

There is a growing recognition that the quantity or percentage of NPLs is related to bank failures and the financial status of a country. Especially after the current global financial crisis, which started in US and spread to the whole world, especially Europe, the issue of NPLs has gained increasing attention because of the rapid increased default of sub-prime mortgage loans. Moreover, there are some evidences that financial and banking crises in East Asia and Sub Saharan African countries were preceded by increasing non-

performing loans. From the point of this view, the non-performing loan ratio is therefore a critical measure to evaluate a bank's performance, the economic activity and the national financial stability and soundness (Vatansever and Hepsen, 2013)

1.1.2 Size of the Loan Portfolio

The size of the loan portfolio is impacted by the volume of bank lending which is in turn affected by both the customer demand and bank supply. According to O'Brien and Browne (1992), a slowdown in loans reflects influences on both the demand and the supply side. On the demand side, a slowdown in economic activity and the subsequent loss of purchasing power by many private sector borrowers disqualifies them from being able to qualify for access to loans which results in a dramatic fall in loans demanded. On the supply side, banks become less willing to supply credit in association with deterioration in asset quality and stricter attitudes of regulators, especially through more stringent capital standards. This change in banks' behaviour implies a reduced volume of bank credit which, potentially at least, could impede economic activity.

The size of the loan portfolio is measured in terms of the financial value of the loans and advances made to customers (constituting the receivables in the bank's balance sheet). Commercial banks measure loans and receivables at amortised cost using the effective interest method where the effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument to the net carrying amount of the financial asset or liability (International Accounting Standard 39).

1.1.3   Effect of NPLs on Size of the Loan Portfolio

A theory proposed by Hefferman (2005) identifying the banking sector as the source of the problem proposes that banks take on increasing amounts of risk by lending to firms and households which use the loans to finance purchases in assets such as property, equities, etc. Increasingly the purchases are made for speculative purposes. As the proportion of short-term debt finance rises, the risk increases. An event triggers a fall in the value of these assets and increasingly, borrowers find they are unable to repay the banks. Banks have typically accepted the assets as collateral, so they, too, encounter problems as their ratios of non-performing loans to total loans begin to rise. With lower profit prospects, share prices fall, depleting bank capital and thus making the banks more averse to lending and thus decreasing the volume of lending and subsequently the size of their loan portfolio. In a severe case, depositors become concerned and move their funds to safety.

In a theory on the managerial problems which eventually lead to bank failures, Mullineux and Murinde (2003) noted that based on a situation in France, rapid growth caused a bank, namely Credit Lyonnais, to accumulate a large portfolio of weak loans which could not survive the combination of high interest rates and a marked decline in the French property market. As the problem escalated over time, the bank's fate was linked to the deteriorating performance of the firms the bank had lent to. Due to these issues, the bank needed to be bailed out and rescue plans were announced, including the creation of a 'bad bank' which took on Credit Lyonnais' bad loans thereby removing them from the bank's balance sheet. The bank needed to be rescued as the large volume of non-performing loans made it impossible for the bank to dispense further loans and this in turn led to

financial difficulties for the bank. They conclude by stating that a strategy of growth at any expense is the main reason why banks end up effectively solvent and thus unable to continue in the main business of lending.

Thus, based on the above, the expectation is that an increase in NPLs will cause banks to decrease their lending thus causing a decline in loan growth which will in effect cause a decrease in the size of the loan portfolio. This implies an inverse relationship between the level of NPLs and the size of the loan portfolio.

1.1.4 Commercial Banks in Kenya

There are 43 commercial banks and one mortgage financial institution in Kenya which have been registered and licensed pursuant to the provisions of the Banking Act and are governed by the governing authority, the Central Bank of Kenya (CBK). Of these commercial banks, 10 have been listed on the Nairobi Securities Exchange (NSE) signaling a growth in investors' confidence in the banking sector.

In the December Monthly Economic Review (2014) prepared by CBK, it was noted that the banking sector registered improved growth in assets in the year to December 2014 driven by growth in deposits, injection of capital and retention of profits. The non-performing loans in commercial banks in Kenya stood at Ksh. 107.1 billion in December 2014 (a 32.9% increase from December 2013) whereas the total gross loans and advances in the banking sector's balance sheet stood at Ksh. 1,972.1 billion in the same period, which constituted a 22.9 percent increase from December 2013 (CBK Monthly Economic Review December 2014).

In June 2014, CBK introduced the Kenya Banks' Reference Rate (KBRR) as a means of enhancing the supply of private sector credit in Kenya by facilitating a transparent credit pricing framework and enhancing demand by increasing customers' confidence in the lending policies in Kenyan commercial banks. This was expected to increase the volume of borrowing by customers due to the availability of more information on the reasonability of the lending rates within the various banks.

1.2 Research Problem

It is generally perceived that NPLs negatively impact bank lending due to the effect that they have on interest income (by introducing interest in suspense), net profit (due to loan provisioning and additional loan recovery costs) and working capital (due to reduced funds available to the bank). This study seeks to prove that NPLs negatively impact loan growth (as banks become more averse to lending with a higher level of NPLs and focus more on improving the asset quality) and thus NPLs have a negative impact on the size of the loan portfolio as well. It is expected that the relationship between NPLs and the size of the loan portfolio is thus an inverse one.

A study by Hou and Dickinson (2007) on NPLs in different countries and regions had results which suggested that NPLs have varied effects on lending. In the study, some evidences that higher levels of NPLs reduce banks' aspirations to increase lending were found as expected but countries with different situations showed different locations of the determined thresholds. The study covered Japan, South-East Asian, France and Eastern Europe countries as well as the United States. Another study by Tracey and Leon (2011) conducted in the Carribean countries detected some evidence that at higher levels of NPLs, banks become more risk averse in loan disbursal. This study was conducted in two

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countries, Jamaica and Trinidad and Tobago, and it was also observed that the two countries used had varying levels of risk aversion behavioral patterns.

In Kenya, a study was conducted by Muasya (2009) on the impact of non-performing loans on the performance of the banking sector in Kenya. In this study, Muasya sought to ascertain whether non-performing loans have any impact on the banks' income. The study findings indicated that commercial banks will be negatively affected by raising levels of NPLs through provisions made and interest in suspense. Of the 13 analysed banks, 6 banks had to declare lower earnings because of having an increase in the NPLs. In another study by Owino (2013) on the effect of lending policies on the levels of NPLs of commercial banks in Kenya, the findings indicated that the lending policies help banks lend prudently and lower the risk levels for banks thus reducing the level of NPLs.

At the end of December 2014, the Kenyan banking sector's non-performing loans constituted 5% of the total loan portfolio in the banks' balance sheets (CBK Monthly Economic Review December 2014). Generally speaking, an increase in the supply of commercial bank lending will make more funds available to borrowers in Kenya and thus allow them to achieve greater business or personal development whereas a cutback of loans will impair the corporate sector as they will have difficulties in expanding their working capital, blocking their chances of growing (Hou and Dickinson, 2007).

The past studies done have highlighted the effect of NPLs on a bank's financial performance as well as the effects of lending policies on NPLs in Kenyan commercial banks but not the direct impact of NPLs on commercial banks' lending in a Kenyan context. Whereas studies have been carried out on this area in other countries in various

continents, no conclusive studies have been done on this topic in Kenya and thus there exists a knowledge gap on the actual relationship between these two variables in Kenyan commercial banks. Thus, does an increase in NPLs have an effect on the size of the loan portfolio in commercial banks, particularly in Kenya?

1.3 Research Objective

To establish how the levels of non-performing loans affect the size of the loan portfolio in commercial banks in Kenya.

1.4 Value of the Study

The findings of this study will be important to commercial banks as they will be able to understand how the level of NPLs affects their lending behavior and thus in turn enable the credit departments of these banks to understand the implications of a high level of NPLs on their main area of operations, lending. In addition, this study will be insightful to the management of the banking sector as it will emphasise the importance of maintaining a low level of NPLs for the commercial banks particularly given the impact it has on its lending.

The study will also benefit the governing regulatory body, CBK, as it will give insight on the effect of NPLs on Kenyan commercial banks' lending. As the regulatory body not only governs commercial banks but also seeks to develop them, the findings of this study

will be helpful to the body in developing strategies and regulations to assist the banks in growing and strengthening their lending.

This study's findings will also be valuable to researchers and scholars as it will form a basis for further research. It will also contribute to the already existing knowledge on the effect of NPLs on bank lending by giving insights on the relationship between the two in Kenyan commercial banks and thus contribute to academic reference materials.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter covers the literature review on non-performing loans and the size of the loan portfolio by studying the theories revolving around the two variables, briefly discussing the other factors that affect the size of the loan portfolio and evaluating global studies that other researchers have conducted on non-performing loans and the size of the loan portfolio. The study of this literature better identifies the research gaps within the various empirical studies reviewed and thus highlights the value of this study.

2.2 Theoretical Review

Some of the theories relating to this study are discussed in this section, namely asymmetric information, the financial instability hypothesis and credit crunch theory.

2.2.1 Asymmetric Information

There is asymmetric information in a financial contract when the borrower has information that the lender ignores or does not have access to. This asymmetry concerns the lender whenever the borrower can use this information profitably and at the lender's expense, and is connected with three circumstances: the borrower violates the contract by hiding information about the characteristics and revenues of the project, the lender does not have sufficient information or control over the borrower to avoid cheating and there is debt repayment risk with the borrower having limited liability. Asymmetric information in financial markets can thus adopt adverse selection, moral hazard or monitoring costs (Bebczuk, 2003).

A lender suffers adverse selection when he is not capable of distinguishing between projects with different credit risk when allocating credit. Given the two projects with equal expected value, the lender will prefer the safest one while the borrower the riskier one thus those undertaking risky activities will find it convenient to hide the true nature of the project and exploit the lender's lack of information. Moral hazard occurs when the borrower has the ability to apply the funds to different uses than those agreed upon with the lender, who is hindered by his lack of information and control over the borrower. As in the case of moral hazard, monitoring costs are tied to a hidden action by the borrower who takes advantage of his better information to declare lower-than-actual earnings. Adverse selection appears before the lender disburses the loan whereas moral hazard and monitoring costs appear after the capital has been conceded (Bebczuk, 2003).

Information asymmetry generally gives lenders a harder time in distinguishing between good credit risks and bad credit risks which in turn gives both an equal chance of being lent to. This may make the firms which are good credit risks more averse to borrowing due to the higher interest rates whereas the bad credit risks will be more willing to borrow as they would have expected to have been charged a much higher interest rate. This will in turn have an effect on the lender's portfolio as a larger proportion of the loans will consist of loans with a greater risk of default and in turn result in higher non-performing loans.

2.2.2 The Financial Instability Hypothesis

Wolfson (2002), in an article on Minsky's theory of financial crises in a global context, discussed Minsky's theory on financial instability. In his theory, Minsky stipulates that as an economy expands, optimism increases and conventions about the proper level of debt

and risk begin to change. As the prices of financial assets rise, the general level of speculation increases and debt levels increase leading to the financial system becoming increasingly fragile. Minsky distinguishes between three different kind of borrowers: hedge borrowers (those who can meet all debt payments from their cash flows), speculative borrowers (those who can meet interest payments but must constantly roll over their debt to be able to repay the original loan) and Ponzi borrowers (those can repay neither the interest nor the original loan and rely on the appreciation of the value of their assets to refinance their debt).

Bhattacharya, Goodhart, Tsomocos and Vardoukalis (2011) further explain that Minsky's hypothesis states that over periods of prolonged prosperity and optimism about future prospects, financial institutions invest more in riskier assets, which can make the economic system more vulnerable in the case that default materializes and with his theory, Minsky looks further into the expansion of risk before a bad event materializes. This implies that in this vulnerable system, the occurrence of an unusual event, like the failure of a large company, will lead to a decline in the earlier optimistic expectations which then leads to firms being less willing to finance investment and this in turn affects profits negatively and worsens the difficulty in meeting the debt repayments. As more debts are defaulted on, the demand for loans decreases and this increases the loans' prices and thus the real value of the outstanding debt payments. This in effect increases the banks' non-performing loans as more borrowers are unable to meet repayments and makes the banks more unwilling to lend as a financial crisis results from this downward spiral.

2.2.3 The Credit Crunch Theory

In the credit crunch, O Brien and Browne (1992) study the factors behind reduced bank credit expansion and attribute it to influences of both demand and supply. According to the theory, credit demands become more subdued as economic growth slows down because borrowers become more cautious in their attitude towards borrowing. At the same time, banks contribute to a decline in lending activity as during times of slow economic growth, borrowers' credit quality declines which in turn leads to the collateral values decreasing and more loans encountering payment difficulties and this then has the effect of causing the banks to decrease their willingness to extend credit. This is in turn enforced through the toughening of non-price credit terms, such as collateral requirements, tighter lending standards and wider margins on lending. This marked reduction in bank lending then leads to slower monetary expansion as both the banks and borrowers are in poor financial health.

O Brien and Brown further note that based on the cyclical credit losses and deteriorating borrower quality experienced during the credit crunch period, as well as the imposition of higher mandatory capital ratios by the banks' regulators, banks in several countries have raised the relative price of loans. This has in turn had a depressive effect on demand for the loans. However, as growth of the economies continues and the banks apply stricter lending standards, the bank's asset quality improves which dampens the banks' unwillingness to lend.

2.3 Determinants of the Size of the Loan Portfolio in Commercial Banks

The size of the loan portfolio is in effect determined by the growth of the loans within the commercial bank's portfolio. We thus examine the determinants of loan growth and draw the determinants of the portfolio from these.

2.3.1 Size of Deposits

Machiraju (2008) stipulates that the basis of credit money is the bank deposits which are of two kinds, namely primary deposits (constituting cash or cheques which have been deposited by customers) and derivative deposits (arise on account of granting loans or purchase of assets by a bank). It is out of the primary deposits that the bank makes loans and advances to its customers. Machiraju thereafter discusses the process of credit creation by taking into consideration an instance of a cash deposit by customer.

In the example he provides, the bank that receives the cash deposit maintains 10% of the deposit as the required cash reserve and has a surplus of 90% which it can profitably employ in the assets like loans. Thus, based on the above, we can conclude that the volume of deposits does in fact determine the volume of loans a commercial bank can advance to its customers as a bank will lend out the deposit amount which is in excess of its cash reserve requirement.

2.3.2 Volume of Capital

Berrospide (2011) seeks to discuss in detail the positive correlation between a bank's loans and capital. Berrospide stipulates that several factors may lead to an increase in a bank's capital and thus loan growth, particularly a positive state of the economy and a situation where banks pre-emptively increase their capital levels in anticipation of an increase in loan volumes.

Thus, based on the above, when banks boost their capital in anticipation of a future balance sheet expansion, this is indicative of the fact that a growth in capital will lead to more funds being available to the bank for various investments in assets and thus have an incremental effect on the size of the bank's loan portfolio as these incremental funds will then be lent out to the bank's customers.

2.3.3 Size of Other Earning Assets

A bank's balance sheet consists of both current and non-current assets which are cash, money at short call or notice, bills discounted, bills for collection, investments, loans and advances, acceptances and fixed assets (Machiraju, 2008). If the bank's funds have been invested in certain assets, then less funds are available to the bank for investment in other assets.

Therefore, based on the above, a growth in investments in other earning assets apart from loans will be expected to negatively affect growth in loans due to their utilization of the available funds and henceforth, decrease the size of the loan portfolio. The size of the other earning assets, both the non-current and current assets, is therefore considered to be a determinant of the size of the loan portfolio.

2.4 Empirical Studies

Several empirical studies have been conducted on non-performing loans with regard to their effects on commercial banks' performance and bank lending, the effect of lending on micro and macro-economic policies (such as monetary policies) as well as the causes of non-performing loans and the ways to mitigate the risk of their rise. For the purposes

of our study, we have selected some of these empirical studies as relevant to our area of interest and briefly discussed them.

A study conducted by Amidu (2006) on the link between monetary policy and banks' lending behaviour used panel cross sectional data between 1998 and 2004 to identify the monetary policy factors that influence bank lending behaviour in Ghana. She used multiple regression analysis to determine the relationship between the variables. The regression results showed a positive and significant relationship between bank's credit and GDP growth and a negative one between inflation and bank loans thus suggesting that bank lending may respond to a tightening of monetary policy and when central bank expands or increases money supply into the system, it induces banks to increase their credit portfolios. The results also showed that liquidity influences credit behaviour thus implying that banks with more liquid assets extend more credit to borrowers and a positive relationship between size and bank credit.

Hou and Dickinson (2007) conducted a study to test the hypothesis that non-performing loans (NPLs) reduce the incentive of commercial banks to increase lending by studying banks in the United States, Japan, France, South-East Asian and Eastern European countries. By using a regression equation and determining a threshold, they sought to test a hypothesis that higher non-performing loans than the bank's threshold will hinder creation of new loans. The United States sample results showed that when banks' non-performing loans are below the threshold level of 0.6%, there is a lower tendency for banks to reduce lending as the non-performing loans are under the banks' acceptable level and when banks have higher non-performing loans in the portfolio, they may be more concerned about the risk and hence have lower tendency to increase loans.

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Evidence was less clear for South-East Asian Crisis countries and Japanese banks. They noted that for developing countries, such as Eastern European countries, banks are experiencing fast growth which makes it more difficult to predict their lending behaviour.

Muasya (2008) sought to study the impact of non-performing loans on the performance of the banking sector in Kenya. By sampling banks with more than Ksh. 25 billion worth of assets and using a single regression equation, he conducted his regression on profit before tax and interest income, provisions and total non-performing loans. His findings indicated that commercial banks will be negatively affected by rising levels of non-performing loans through provisions made to take into consideration the low recoverability of these loans and suspension of interest income related to these loans. Of the 13 analyzed banks, he found that 7 did not have the potential to be impacted negatively by non-performing loans whereas the other 6 had (at some point) declared lower earnings because of having increased high amounts of NPLs compared to profits and interest income. He sought to study the effects of non-performing loans on the profitability of commercial banks in Kenya and thus limited himself to their impacts on the statement of comprehensive income in particular.

A study conducted by Kumbirai and Webb (2010) on financial ratio analysis of commercial bank performance in South Africa investigated the performance of South Africa's commercial banking sector for the period 2005-2009. The study focused on three areas: profitability, liquidity and asset credit quality. By using the available data to compute the determined ratios over the time period, they developed a trend analysis for each of the areas of performance. In the asset credit quality review, their findings noted that the loan portfolio deteriorated between 2008 and 2009 as the credit risk ratios

increased at this point. This was because the banks were facing increased credit risk due to risky loans given between 2005 and 2006 which had begun fall due and borrowers were unable to repay. This in turn led to the risk appetites for the banks being adjusted in line with the challenging economic conditions, caused by the global financial crisis, which led to caution being exercised with regard to lending. Their findings are consistent with our expectation of this study's results.

Tracey and Leon (2011) studied the impact of non-performing loans on loan growth in Jamaica and Trinidad and Tobago. By developing a basic model taking into consideration various factors and the effect that they have on the loan growth rate, as well as a confidence interval, they sought to test the hypothesis that as banks move to higher levels of non-performing loans, they become more risk averse. The results from both countries contained some evidence that at higher levels of NPLs/Loan ratio, banks become more risk averse in loan disbursal with the two countries having varying levels of risk aversion behavioural patterns (Jamaica is more cautious given the financial risk experienced in the late 1990's as compared to Trinidad and Tobago which is less risk averse as it has not had a financial risk). The results from this study supported those of Hou and Dickinson's study which suggested that the effects are largely dependent on the particular country or region being studied.

Olokoyo (2011) investigated the determinants of commercial banks' lending behaviour in Nigeria using regression analysis to determine whether there was a functional relationship between commercial banks' loan advances and several determinant variables particularly during the 25 year period between 1980 and 2005. The test results showed that all the variables are positively correlated with bank lending but only four variables

had a significant influence on the lending behaviour of banks, namely the volume of deposits, investment portfolio, exchange rate of the naira to dollar and gross domestic product (GDP). The volume of deposits, however, had the highest coefficient value in the regressive equation thus implying that it has the highest impact on the lending behaviour of commercial banks and a change in it will yield the highest change in banks' loans and advances. For the purposes of our study, we have included the size of deposits as a determinant on the size of the loan portfolio which is concurrent with her study results.

Muriithi (2011) conducted a study on the causes of non-performing loans in commercial banks in Kenya. Using an economic model linking the level of non-performing loans and the real interest rate, the monthly inflation rate and the growth of loans in a bank, he sought to establish whether the level of NPLs is dependent on these variables in the 43 commercial banks in Kenya. The study found that there is a negative relationship between the ratio of non-performing loans and real interest rate as well as between the ratio and growth of loans and a positive relationship between the ratio and inflation rate. Conclusively, the study determined that the independent variables jointly caused the non-performing loans in commercial banks in Kenya. In this study, he sought to determine the impact of the growth of loans on non-performing loans in commercial banks in Kenya and not the reverse relationship thus leaving this area open to further research and study.

In Kenya, Owino (2013) conducted a study on the effect of lending policies on the levels of non-performing loans of commercial banks in Kenya. By sampling all the commercial banks in Kenya, he prepared a data collection form for the heads of the various credit departments. The responses received from the sampled participants found that the leading cause of non-performing loans was lending to borrowers with questionable character

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closely followed by high interest rates which made it hard for customers to make repayments and the diversion of funds by borrowers from what they had initially taken the loan for (without any disclosure to the bank of the same). In addition to this, some of the respondents indicated that in an effort to reduce the high risk in commercial loans, they stopped advancing loans to risky sub-sectors. He thus concluded that proper adherence to the lending policies can reduce the level of non-performing loans. Whereas he studied the effect that lending policies generally have on non-performing loans, he did not delve into the effects of increases in these loans on the commercial banks thus giving researchers the opportunity to further study this area.

In a study assessing the factors contributing to non-performing loans in Kenyan banks, Ombaba (2013) sought to review the factors contributing to high rates of NPLs in Kenya despite the introduction of the Central Bank Rate (CBR). By studying secondary data and using data for the ten years between 2003 and 2012, he studied the spread of the NPLs in the banking sector as well as their volumes. His recommendation was that banks should decrease lending to sectors which have not proven to be performing well, such as the agricultural and manufacturing sectors. In addition, the banks' management needs to ensure that borrowed funds are being used for the intended purposes through enhanced credit monitoring and credit information sharing. According to him, the cost of NPLs is significant as a rise in NPLs will lead to deterioration of the banks' assets and erosion of capital. As he did not delve further into the effect on the bank assets and lending as well, this is a research gap which we shall strive to fill with this study.

Warue (2013) conducted a study on the effects of bank specific and macroeconomic factors on NPLs in commercial banks in Kenya and sought to study the effects of both

factors on the levels on NPLs and thus identify which set of factors has the greatest impact on the NPL level by creating a regression model for all the banks. The results found that the NPL levels of commercial banks are dependent on bank sizes under the pooled model but not under a fixed one. In addition, a negative performance of Return on Assets (ROA) and Return on Capital Employed (ROCE) leads to an increase in NPL levels and while foreign and local banks' NPL performance was not responsive to the size of the total assets, government banks were responsive to the same which implies that government banks base their lending policies on total assets while foreign and local banks take into consideration other factors besides total assets. Another finding was that bank specific factors contribute to NPLs' performance at a higher magnitude than macroeconomic factors. In this study, the focus will be on bank specific factors and NPLs and their effect on the size of the loan portfolio.

2.5 Summary of Literature Review

Three theoretical reviews with regard to non-performing loans and the size of the loan portfolio have been discussed in this chapter. In two of the reviewed theories, it is purported that a slow-down in the economic growth of a country will eventually lead to an increase in non-performing loans and a decrease in commercial bank lending as a result. This will prove beneficial when performing the research tests and seeking to understand the reason for the increase in NPLs in Kenya over recent years.

The empirical literature review took into consideration ten studies conducted in various countries on non-performing loans and the findings from these studies. Several of the studies intimated that the volume of deposits has a great impact on the lending behaviour (which we took into consideration when identifying the variables affecting the size of the

loan portfolio) whilst others intimated that the size of the banks has an impact on the lending.

Whereas several of the studies were conducted on the causes of non-performing loans and their effects on the banks' financial performance, only two actually studied the topic similar to that of this study. Given that the findings of these studies intimated that different results will be expected in different banks across different regions, and no such study has been conducted in the Kenyan context, this is a research gap we wish to fill and thus give valuable information on the relationship between non-performing loans and the size of the loan portfolio in commercial banks in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

In this chapter of the study, the research methodology will be discussed in terms of the research design, population for the study, sample design which includes the sample selected, methods of data collection, validity and reliability of the data collected and the data analysis which includes the regression model which shall be employed in the study.

3.2 Research Design

The research design of this study is a descriptive one as the researcher will be seeking to ascertain and describe the characteristics of the loan portfolio's size given the level of non-performing loans in commercial banks in Kenya. According to Ngechu (2002), descriptive studies are more formalized and typically structured with clearly stated hypotheses or investigative questions. This research design has been chosen as it will enable the researcher to achieve the goal of describing the relationship between the chosen two variables from an industry oriented perspective in the Kenyan context.

3.3 Population

There are 43 licensed and registered commercial banks in Kenya under the Banking Act. These banks constituted the population from which the researcher drew the sample for the study and the list of these banks constituted the sampling frame for this study (list provided in appendix 1).

This was a census study where data from all the 43 commercial banks registered and licensed under the Banking Act constituted the sample of the study. The data was

obtained from the financial statements of the commercial banks as well as the annual bank supervision reports prepared by the Central Bank of Kenya.

3.4 Data Collection

The study used secondary data to achieve the objective. The secondary data sources were information obtained from the Central Bank of Kenya reports and annual published accounts for the commercial banks of Kenya between 2010 and 2014.

3.5 Validity and Reliability

The information used was obtained from the reports compiled by the commercial banks' regulatory authority, Central Bank of Kenya, and the annual published accounts as reviewed by the banks' external auditors. As the information relied upon has been examined and certified by independent and professional third parties apart from the commercial banks, the information used for the study purposes was deemed reliable.

3.6 Data Analysis

The research employed a multiple regression model approach. The regression equation, which is similar to the equation used by Hou and Dickinson (2007) in their empirical study, is:

$$GLR_{i,t} = a_0 + a_1 NPR_{i,t} + a_2 DPR_{i,t} + a_3 CPR_{i,t} + a_4 OEAR_{i,t} + e$$

Where GLR is the ratio of the gross loans and advances of a bank in a year to the net assets of the bank at the end of the year,

NPR is the ratio of the non-performing loans at the end of the year to the net assets at the end of the same year,

DPR is the ratio of the deposits held on behalf of customers at the end of a year to the net assets at the end of the year,

CPR is the ratio of the share capital investment in a bank at the end of a year to the net assets at the end of the year and

OEAR is the ratio of the other earning assets at the end of a year to the net assets at the end of the year.

These variables were obtained from the assets and liabilities in the years between 2010 and 2014 as presented in the commercial banks' balance sheets.

The quantitative data obtained was analysed using descriptive statistics, particularly frequency distribution tables and measures of dispersion. The data collected was presented in tables indicating the variables across the 6 sampled banks and thus enabled the researcher to study the coefficients of the dependent variables across these banks over the five financial years by using the statistical software package, SPSS.

In this study, F-test was used to test the joint significance of all coefficients and T-test for the test significance of individual coefficients. The significance of the regression model was determined at 99% confidence interval and 1% level of significance.

CHAPTER FOUR: DATA ANALYSIS, FINDINGS AND INTERPRETATIONS

4.1 Introduction

This chapter contains analysis of the data collected on the effect of non-performing loans on the size of the loan portfolio in commercial banks in Kenya. In it, the data findings are discussed, analysed and interpreted in order to form conclusions on the topic in study.

4.2 Response Rate

The target population for the study was the 43 commercial banks in Kenya. Of the 43 banks, the full 2010 to 2014 financial statements in Kenya shillings (from which the study data was collected) were available for 22 banks representing a 51% collection rate. Mugenda and Mugenda (2003) state that for generalization purposes, a response rate of 50% is adequate for analysis and reporting, 60% is good and a response rate of 70% and over is excellent and thus, our response rate of 51% is a reliable one.

Table 4.1 Response Rate

Commercial Banks	Frequency	Percentage
2010 to 2014 Kenya Shilling Financial Statements Available	22	51%
Partial Financial Statements Available	9	21%
Financial Statements Unavailable	12	28%
Total	**43**	**100%**

(Source: Secondary Data)

4.3 Data Validity

The data was obtained from the 2010 to 2014 financial statements of the commercial banks as well as the annual bank supervision reports from the Central Bank of Kenya (CBK). As the financial statements were reviewed by external auditors before publication and the bank supervision reports were prepared by a third party, the regulatory authority CBK, the data collected for this study is deemed to be valid as well as reliable.

4.4 Descriptive Statistics

The means, standard deviations, skewness and kurtosis of the variables are presented in Table 4.2 below.

Table 4.2 Descriptive Statistics

	GLR	DPR	CPR	OEAR	NPR
N	110	110	110	110	110
Max (Ratio)	1.001	1.140	.361	.778	.186
Min (Ratio)	.359	.528	.007	.208	.006
Mean (Ratio)	.624	.800	.065	.477	.037
Std. Deviation (Ratio)	.134	.138	.068	.097	.030
Variance (Ratio)	.018	.019	.005	.009	.001
Skewness (Ratio)	.586	.518	2.065	.078	2.429
Kurtosis (Ratio)	.213	.285	5.038	.953	8.411

Table 4.2 shows that the total number of data points analysed per variable were 110, that is, the five-year data for the 22 commercial banks whose full financial statements were available. The mean of the GLR was 0.624 and the standard deviation was 0.134 while the kurtosis was 0.213 and skewness was 0.586. The mean of the DPR was 0.800 and the

standard deviation was 0.138 while its kurtosis was 0.285 and skewness was 0.518. The mean of the CPR was 0.065 and the standard deviation was 0.068 while the kurtosis was 5.038 and skewness was 2.065. The mean of the OEAR was 0.477 and the standard deviation was 0.097 whereas its kurtosis was 0.953 and skewness was 0.078. Finally, the mean of the NPR was 0.037 and the standard deviation was 0.031 while the kurtosis was 8.411 and skewness was 2.429.

Analysis of skewness shows that all the variables are asymmetrical to the right with those of the GLR, DPR and OEAR being asymmetrical around their means. The skewness of the CPR and NPR are greater than 1 implying that the skewness is substantial and the distribution is far from symmetrical. In addition, analysis of the kurtosis indicates a positive kurtosis for all the variables with the CPR and NPR having the greatest kurtosis. The kurtosis of the CPR and NPR is greater than 3 implying a Leptokurtic distribution, which is sharper than a normal distribution and further implies a higher probability for extreme values, while the kurtosis of the other variables being less than 3 implies a Platykurtic distribution, which is flatter than a normal distribution.

4.5 Correlation Analysis

The researcher used the statistical package for social sciences (SPSS) to obtain the Pearson's Bivariate Correlation as presented in Table 4.3 below.

Table 4.3 Correlation of GLR and DPR, CPR, OEAR, NPR

Correlations

	GLR	DPR	CPR	OEAR	NPR
GLR	1				
DPR	.535**	1			
CPR	-.333**	-.153	1		
OEAR	-.345**	.224*	.083	1	
NPR	-.069	-.200*	.428**	-.265**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The table shows that there is significant correlation between three of the independent variables and the dependent variable, namely the DPR, CPR and OEAR, at the 0.01 significance level. These three independent variables showed a strong and significant relationship with the GLR whereas the NPR showed an insignificant relationship with the GLR. In addition, it is clear from Table 4.3 that some of the independent variables have a significant correlation, particularly the OEAR and DPR, NPR and DPR, NPR and CPR as well as NPR and OEAR. In conclusion, only the DPR had a positive significant correlation with the GLR while the CPR and OEAR had a negative significant correlation with the GLR and the NPR had an insignificant correlation with the GLR.

4.6 Regression Analysis

The researcher conducted a multiple regression analysis so as to identify the relationship between the size of the loan portfolio and the non-performing loans of all the 43 licensed commercial banks in Kenya. Multiple regressions is a statistical technique that allows the

study to predict a score of one variable on the basis of their scores on several other variables. The main purpose of multiple regressions is to learn more about the relationship between several independent or predictor variables and a dependent or criterion variable. The researcher applied the statistical package for social sciences (SPSS) to code, enter and compute the measurements of the multiple regressions for the study.

The coefficient of determination was computed to measure how well the statistical model was likely to predict future outcomes. The coefficient of determination, R^2, is the square of the sample correlation coefficient between outcomes and predicted values. As such, it explains the extent to which changes in the dependent variable can be explained by the change in the independent variables or the percentage of variation in the dependent variable that is explained by all the four independent variables.

Table 4.4 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744[a]	.553	.536	.0913

a. Predictors: (Constant), NPR, DPR, OEAR, CPR

The multiple correlation coefficient was 0.744. *R* can be considered to be one measure of the quality of the prediction of the dependent variable, in this case, the gross loan ratio. A value above 0.5 generally indicates a good level of prediction.

The coefficient of determination, R^2=.553, is the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the

proportion of variation accounted for by the regression model above and beyond the mean model). This implies that the independent variables chosen explained 55.3% of the variability of the dependent variable. The adjusted R square, that is the R square which has been adjusted for the number of predictors in the model, is .536 and it can be used to provide an unbiased estimate of the populations R-squared.

Table 4.5 Coefficient of Multiple Regression Analysis

Coefficients[a]

Model	Unstandarized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	.475	.068		7.036	.000	.341	.609
DPR	.592	.066	.610	8.942	.000	.461	.724
CPR	-.417	.147	-.211	-2.833	.006	-.708	-.125
OEAR	-.631	.098	-.458	-6.454	.000	-.824	-.437
NPR	.097	.335	.022	.289	.773	-.567	.761

The regression equation now becomes

$$GLR_{i,t} = 0.475 + 0.592DPR_{i,t} - 0.417CPR_{i,t} - 0.631OEAR_{i,t} + 0.097NPR_{i,t}$$

Unstandardized coefficients indicate how much the dependent variable varies with the independent variables when all other independent variables are held constant. From the regression equation generated, taking all other factors (deposits ratio, share capital investment ratio, other earning assets ratio and non-performing loans ratio) constant at

zero, the gross loans ratio of commercial banks in Kenya would be 0.475. Further, if all the other variables are kept constant, a unit increase in the deposits ratio will lead to a 0.592 increase in the gross loan ratio of commercial banks in Kenya. A unit increase in the share capital investment ratio will lead to a 0.417 decrease in the gross loan ratio of commercial banks in Kenya while a unit increase in the other earning assets ratio will have a resultant 0.631 decrease in the gross loan ratio of commercial banks in Kenya. Lastly, a unit increase in the non-performing loans ratio, will result into a 0.097 increase in the gross loan ratio of commercial banks in Kenya, which is not statistically significant.

4.7 Discussion of Research Findings

The data analysis reveals that the DPR, CPR and OEAR have a significant effect on the GLR whereas the NPR has an effect which is not considered significant. This implies that the size of deposits, share capital investment and level of other earning assets have a significant influence on the size of the loan portfolio while the effect of the non-performing loans on the size of the loan portfolio is not considered significant. Hou and Dickinson (2007) determined in their case study that in the case of developing countries, as the banks are experiencing fast growth, it is difficult to predict the lending behavior using the non-performing loans. Thus, as Kenya is a developing country, this may be the reason for the results of the data analysis. In addition, as the non-performing loans in Kenya constitute only 5% of the total loan portfolio as at the end of December 2014 (CBK Monthly Economic Review December 2014), the non-performing loans may be considered to be below the banks' acceptable threshold which, as determined in Hou and Dickinson's study, may cause a bank not to change its lending patterns.

The data analysis also revealed that the DPR and NPR have a positive correlation with the GLR whereas the CPR and OEAR have negative correlations with the GLR. This would imply that an increase in the size of deposits and non-performing loans would lead to an increase in the size of the loan portfolio while an increase in the share capital investment and other earning assets would lead to a decrease in the size of the loan portfolio. The relationship between the size of deposits and the size of the loan portfolio is consistent with the findings of a study conducted by Olokoyo (2011) in Nigeria. However, the relationship between the share capital investment and the size of the loan portfolio deviated from the expected relationship as stipulated in The Effects of Bank Capital on Lending (2011) where it was proposed that an increase in capital will lead to an increase in the size of the loan portfolio. These results may have resulted from the studied commercial banks in Kenya not having increased their share capital consistently over the studied period. Other earning assets had a negative correlation with the size of the loan portfolio which was consistent with our expectation. Finally, the non-performing loans had a positive correlation with the size of the loan portfolio which is inconsistent with our expectation but which may have arisen due to the non-performing loans being a small proportion of the size of the loan portfolio and thus insignificant.

Finally, the data analysis indicated that a unit increase in the deposits ratio will lead to a 0.592 increase in the gross loan ratio of commercial banks in Kenya, a unit increase in the share capital investment ratio will lead to a 0.417 decrease in the gross loan ratio of commercial banks in Kenya, a unit increase in the other earning assets ratio will have a resultant 0.631 decrease in the gross loan ratio of commercial banks in Kenya and a unit

increase in the controlling variable, non-performing loans ratio, will result in a 0.097

increase in the gross loan ratio of commercial banks in Kenya.

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the summary of the findings as outlined in the previous chapter as well as the conclusions and recommendations of the study. It also includes the limitations of the study as well as suggestions for further research.

5.2 Summary of Findings

The study objective was to establish how the levels of non-performing loans affect the size of the loan portfolio in commercial banks in Kenya. The population consisted of the 43 licensed commercial banks in Kenya. Out of the 43 commercial banks, the financial statements of 22 banks were fully available for sufficient data collection. This constituted a response rate of 51% which was ample for drawing conclusions. The study collected secondary data from the financial statements of the commercial banks and the annual bank supervision reports prepared by the Central Bank of Kenya. The research was quantitative in nature implying that descriptive statistics analysis was employed. The researcher also used a multivariate regression analysis to determine the relationship between the independent variables and the dependent variable.

The studied 110 data points for each variable were found to be asymmetrical to the right of their means and all the variables had a positive kurtosis. Further, the study results indicated that some of the independent variables, namely the size of deposits, share capital investment and other earning assets, explain and can therefore statistically significantly predict the size of the loan portfolio of the commercial banks. The results

also indicated that the non-performing loans do not have a statistically significant effect on the size of the loan portfolio. In addition, the independent variables were found to explain 55.3% of the variability of the dependent variable which constitutes a good explanatory percentage as it is in the upper quartiles.

The study concludes that an increase in the non-performing loan level will cause an increase in the size of the loan portfolio in commercial banks in Kenya but not in statistically significant terms. In addition, the study concludes that an increase in the size of deposits will lead to an increase in the size of the loan portfolio whereas an increase in the share capital investment and other earning assets will lead to a decrease in the size of the loan portfolio in commercial banks in Kenya.

5.3 Conclusions

The research study has achieved its objective of establishing how the levels of non-performing loans affect the size of the loan portfolio in commercial banks in Kenya. Based on the study findings, an increase in the non-performing loan levels will lead to a statistically insignificant increase in the size of the loan portfolio in commercial banks in Kenya.

In addition, the study findings have determined that an increase in the size of deposits and a decrease in the other earning assets and share capital investment will lead to a statistically significant increase in the size of the loan portfolio. The findings have also determined that the size of deposits has the greatest effect on the size of the loan portfolio amongst the studied independent variables and the non-performing loans has the least effect.

5.4 Recommendations

Based on the study findings, it is the researcher's recommendation that a commercial bank in Kenya should increase the volume of its deposits and decrease its other earning assets in order to increase the size of its loan portfolio. As these two independent variables have the greatest unit effect on the dependent variable amongst the independent variables studied, the study recommends that to have the most significant increase in the size of the loan portfolio, commercial banks should alternately increase the size of deposits or decrease the other earning assets.

In addition, as the non-performing loans were found not to have a significant effect on the size of the loan portfolio, it is the study's recommendation that commercial banks in Kenya should strive to maintain their non-performing loans below the acceptable threshold and avoid the possible effects of the non-performing loans being above the acceptable threshold. From Hou and Dickinson's study (2007), the acceptable threshold for US commercial banks was determined to be 0.6% and thus commercial banks in Kenya need to determine the acceptable threshold below which the non-performing loans have no significant effect on the size of the loan portfolio as well as monitor the non-performing loans to ensure they continuously remain below this level.

With regard to the effect of share capital investment on the size of the loan portfolio, the researcher recommends further research be done on the commercial banks in Kenya to ascertain whether an incremental capital investment does indeed cause a decrease in the size of the loan portfolio as the results of the study contradicted the expectations of the

researcher that an increase in share capital investment will lead to an increase in the size of the loan portfolio.

5.5 Limitations of the Study

The initial topic of the study was the effect of non-performing loans on the volume of lending in commercial banks in Kenya. Due to the limited availability of the data on the advances made by a bank in a year, the volume of deposits made by customers in a year as well as the incremental non-performing loans in a year, the study's focus area was amended so that sufficient data could be collected from secondary sources for research purposes.

In addition, as the financial statements of the 43 commercial banks in Kenya over the last five years are not required to be made public, only the statements for 22 banks were fully available for the study. As the university requires the completion of the research document at a specified date, there were time constraints which restricted the researchers' data collection from the individual commercial banks. Nevertheless, the researcher managed to collect data from the financial statements availed to the public by the banks.

5.6 Suggestion for Further Studies

As the information from all 43 commercial banks in Kenya was not available, there still exists a research gap where a study can be conducted with information from the entire population. Such a study would need to be conducted over a longer time period in order to give the potential researcher enough time to collect all the financial statements from all 43 banks individually as almost half of the banks' financial statements have not been made public.

Further, a future researcher could investigate the relationship between non-performing loans and the growth of loans or alternatively, the volume of lending in commercial banks in Kenya. It would, however, be important for this researcher to ascertain that this information is available for research purposes before conducting the study.

For consideration as well, a study could be pursued to determine the acceptable threshold of non-performing loans in commercial banks in Kenya and ascertain whether the level of non-performing loans being below this level does not affect the size of the loan portfolio or alternatively, the growth of loans. A study by Hou and Dickinson (2007) determined this threshold to be 0.6% in US-based commercial banks and it would be good to know what this threshold is for commercial banks in Kenya.

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APPENDICES

Appendix 1: List of licensed commercial banks in Kenya as at 31st March 2015

1. ABC Bank (Kenya)
2. Bank of Africa
3. Bank of Baroda
4. Bank of India
5. Barclays Bank Kenya
6. CFC Stanbic Holdings
7. Chase Bank Kenya
8. Citibank
9. Commercial Bank of Africa
10. Consolidated Bank of Kenya
11. Cooperative Bank of Kenya
12. Credit Bank
13. Development Bank of Kenya
14. Diamond Trust Bank
15. Dubai Bank Kenya
16. Ecobank Kenya
17. Equatorial Commercial Bank
18. Equity Bank
19. Family Bank
20. Fidelity Commercial Bank Limited
21. First Community Bank
22. Giro Commercial Bank
23. Guaranty Trust Bank Kenya
24. Guardian Bank
25. Gulf African Bank
26. Habib Bank
27. Habib Bank AG Zurich
28. Housing Finance Company of Kenya
29. I&M Bank
30. Imperial Bank Kenya
31. Jamii Bora Bank
32. Kenya Commercial Bank
33. K-Rep Bank
34. Middle East Bank Kenya
35. National Bank of Kenya
36. NIC Bank
37. Oriental Commercial Bank
38. Paramount Universal Bank
39. Prime Bank (Kenya)
40. Standard Chartered Kenya
41. Trans National Bank Kenya
42. United Bank for Africa

43. Victoria Commercial Bank

Source: CBK Bank Supervision Annual Report 2014

Appendix 2: Data Points Used for Regression Analysis

	Year	GLR	DPR	CPR	OEAR	NPR
Bank 1	2010	0.53	0.72	0.02	0.50	0.03
	2011	0.61	0.74	0.02	0.41	0.03
	2012	0.58	0.75	0.01	0.44	0.02
	2013	0.59	0.73	0.01	0.43	0.02
	2014	0.57	0.73	0.01	0.44	0.02
Bank 2	2010	0.43	0.70	0.01	0.58	0.01
	2011	0.59	0.75	0.01	0.41	0.01
	2012	0.59	0.72	0.01	0.42	0.01
	2013	0.60	0.70	0.01	0.41	0.02
	2014	0.57	0.69	0.01	0.45	0.05
Bank 3	2010	0.71	0.88	0.01	0.46	0.07
	2011	0.73	0.92	0.01	0.47	0.04
	2012	0.73	0.95	0.01	0.51	0.05
	2013	0.73	0.95	0.01	0.50	0.06
	2014	0.68	1.00	0.01	0.55	0.05
Bank 4	2010	0.60	0.78	0.01	0.48	0.03
	2011	0.66	0.79	0.01	0.47	0.02
	2012	0.65	0.77	0.01	0.50	0.02
	2013	0.74	0.82	0.01	0.45	0.04
	2014	0.80	0.89	0.01	0.47	0.03
Bank 5	2010	0.36	0.80	0.12	0.65	0.02
	2011	0.42	0.83	0.10	0.59	0.02
	2012	0.45	0.82	0.11	0.58	0.03
	2013	0.45	0.84	0.08	0.57	0.05
	2014	0.55	0.85	0.06	0.47	0.06
Bank 6	2010	0.41	0.61	0.14	0.64	0.08
	2011	0.45	0.61	0.13	0.58	0.04
	2012	0.46	0.68	0.18	0.56	0.02
	2013	0.53	0.69	0.21	0.50	0.04
	2014	0.53	0.71	0.27	0.50	0.04
Bank 7	2010	0.74	1.03	0.08	0.63	0.01
	2011	0.78	0.87	0.09	0.59	0.01
	2012	0.78	0.91	0.07	0.51	0.02
	2013	0.73	0.89	0.08	0.54	0.04
	2014	0.63	0.85	0.08	0.49	0.04
Bank 8	2010	0.89	1.13	0.01	0.55	0.01
	2011	0.94	1.11	0.01	0.47	0.01
	2012	0.95	1.13	0.01	0.51	0.01
	2013	1.00	1.13	0.01	0.49	0.01
	2014	1.00	1.14	0.01	0.52	0.01
Bank 9	2010	0.63	0.71	0.06	0.44	0.04
	2011	0.66	0.80	0.05	0.45	0.03
	2012	0.65	0.89	0.04	0.48	0.03

	2013	0.73	0.79	0.03	0.39	0.04
	2014	0.56	0.83	0.02	0.45	0.04
Bank 10	2010	0.59	0.80	0.02	0.44	0.02
	2011	0.68	0.85	0.02	0.35	0.02
	2012	0.62	0.81	0.02	0.40	0.02
	2013	0.64	0.76	0.02	0.40	0.02
	2014	0.64	0.77	0.02	0.37	0.03
Bank 11	2010	0.57	0.72	0.36	0.46	0.07
	2011	0.59	0.73	0.33	0.44	0.08
	2012	0.58	0.77	0.26	0.44	0.07
	2013	0.59	0.77	0.23	0.42	0.05
	2014	0.61	0.79	0.21	0.41	0.06
Bank 12	2010	0.77	0.89	0.03	0.33	0.03
	2011	0.79	0.90	0.03	0.30	0.03
	2012	0.72	0.82	0.03	0.36	0.02
	2013	0.75	0.81	0.02	0.40	0.04
	2014	0.75	0.73	0.02	0.29	0.03
Bank 13	2010	0.61	1.03	0.08	0.58	0.03
	2011	0.57	0.99	0.06	0.57	0.03
	2012	0.53	1.03	0.05	0.65	0.03
	2013	0.57	1.03	0.04	0.60	0.02
	2014	0.53	0.69	0.03	0.47	0.02
Bank 14	2010	0.83	1.09	0.05	0.59	0.02
	2011	0.89	1.11	0.04	0.54	0.01
	2012	0.79	0.96	0.03	0.53	0.01
	2013	0.85	0.88	0.03	0.45	0.01
	2014	0.66	0.63	0.02	0.35	0.01
Bank 15	2010	0.53	0.81	0.10	0.49	0.02
	2011	0.58	0.83	0.08	0.44	0.02
	2012	0.54	0.81	0.06	0.50	0.01
	2013	0.59	0.84	0.05	0.47	0.03
	2014	0.63	0.75	0.05	0.50	0.04
Bank 16	2010	0.58	0.76	0.11	0.40	0.07
	2011	0.60	0.78	0.07	0.40	0.05
	2012	0.59	0.76	0.06	0.44	0.07
	2013	0.71	0.70	0.07	0.35	0.10
	2014	0.71	0.71	0.11	0.39	0.19
Bank 17	2010	0.51	0.77	0.14	0.54	0.12
	2011	0.53	0.76	0.13	0.49	0.05
	2012	0.56	0.92	0.12	0.47	0.06
	2013	0.61	0.89	0.15	0.42	0.09
	2014	0.70	0.86	0.14	0.36	0.18
Bank 18	2010	0.50	0.81	0.06	0.52	0.02
	2011	0.55	0.85	0.06	0.46	0.01
	2012	0.46	0.85	0.06	0.55	0.01

	2013	0.51	0.84	0.06	0.49	0.03
	2014	0.52	0.83	0.05	0.51	0.02
Bank 19	2010	0.39	0.63	0.13	0.59	0.11
	2011	0.42	0.72	0.08	0.55	0.05
	2012	0.43	0.73	0.07	0.52	0.06
	2013	0.47	0.73	0.10	0.47	0.07
	2014	0.65	0.75	0.10	0.41	0.05
Bank 20	2010	0.56	0.67	0.01	0.76	0.02
	2011	0.47	0.53	0.01	0.61	0.01
	2012	0.51	0.56	0.01	0.58	0.01
	2013	0.42	0.56	0.01	0.65	0.01
	2014	0.52	0.57	0.01	0.54	0.02
Bank 21	2010	0.68	0.54	0.04	0.33	0.05
	2011	0.81	0.58	0.04	0.21	0.05
	2012	0.76	0.56	0.03	0.26	0.06
	2013	0.77	0.57	0.02	0.25	0.06
	2014	0.76	0.60	0.03	0.27	0.07
Bank 22	2010	0.74	0.77	0.08	0.78	0.02
	2011	0.51	0.68	0.07	0.50	0.01
	2012	0.61	0.75	0.09	0.41	0.02
	2013	0.55	0.70	0.09	0.49	0.03
	2014	0.52	0.74	0.09	0.48	0.03