EFFECT OF COMMERCIAL BANK FAILURES ON FINANCIAL PERFORMANCE OF TIER III BANKS IN KENYA

MATHEKA BEATRICE KAMENE

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTERS OF BUSINESS ADMINISTRATION, SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI

2021

DECLARATION

This research project is my original work and has not been submitted for examination in any other university.

Signature........BKA............... Date 30 September 2021

Matheka Beatrice Kamene

D61/78039/2015

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

Signature........................... Date 30 September 2021

Prof. Cyrus Mwangi

Department of Finance & Accounting

University of Nairobi

ii

ACKNOWLEDGEMENTS

DEDICATION

I dedicate this work to my loving husband Abednego and our children Shari and Keysha for the inspiration and support they gave me. May this project be an inspiration to my children and siblings (Duncan, Dorothy, Faith, Simon, Jimmy and Gift). To my father, Mr. William Mutuku and mother, Mrs. Penina Matheka, am grateful for giving me a firm foundation in academics and for financial support all through my studies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS

BCCI: Bank of Credit and Commerce International

CAMEL: Capital Adequacy, Asset Quality, Management Quality, Earnings and Liquidity

CBK: Central Bank of Kenya

ICAAP: Internal Capital Adequacy Assessment Process

NPLs: Non-performing loans

NSE: Nairobi Stock Exchange

PBT: Profit Before Tax

ROA: Return on Assets

ROE: Return on Equity

SPSS: Statistical Package of Social Sciences

TRWA: Total Risk Weighted Assets

UK: United Kingdom

US: United States

WCI: Weighted Composite Index

ABSTRACT

This study examined how bank failure announcements for Dubai Bank, Imperial Bank Limited and Chase Bank Limited affected the financial performance of tier III banks in Kenya. The population of study consisted 18 tier III banks in Kenya that were in operation from December 2016 to June 2018. The analysis was on a quarterly basis and covered a period of two years before and two years after the bank failure announcements. Kenyan banks are categorized as large, medium and small. Tier III banks are those categorized under small peer group. Financial performance was measured using Return on Assets (ROA) while other financial variables (liquidity, asset quality and capital adequacy) were also used to test the effect bank failure announcements had. Data for the 18 tier III banks was obtained and analyzed using event study methodology and trend analysis. Statistical Package for Social Sciences (SPSS) was used in the analysis by performing a paired t-test of difference of means of the data before bank failure versus actual performance after bank failure announcements. Paired test of difference in means for actual performance after bank failure and the expected performance after bank failure was also done. The study also used charts to perform a trend analysis. After the failure of Dubai Bank, Imperial Bank and Chase Bank Limited, the Kenyan economy witnessed several shifts in commercial banks. Some banks and mainly the tier III banks were acquired by big banks both local and foreign, others were put under CBK support for a while, others sold part of their fixed assets to boost their liquidity and capital levels and some are still struggling to be liquid as per regulatory requirements. The results showed p-values of < 0.05 for ROA, liquidity and asset quality leading to a conclusion that the difference in means is significant for these variables. Accordingly, bank failure announcement had a negative and significant correlation with ROA and liquidity and a positive and significant correlation with asset quality. On the other hand, p-value for capital adequacy was > 0.05 leading to the conclusion that the difference in means is not significant for capital adequacy. Therefore, bank failure announcements affected ROA, liquidity and asset quality negatively while no significant effect was observed on capital adequacy for tier III banks. Accordingly, the deterioration in performance of tier III banks in post event window could be associated to the bank failure announcements. As a result, the study recommends that regulators should put in place stringent measures and implement multi-dimensional early warning system towards preventing bank failures that may affect other institutions negatively.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Diamond and Dybvig (1983) in their study found out that when a bank fails, depositors expect other banks to go down hence they may quickly withdraw their deposits to take to banks they perceive to be stable. Financial institutions are interconnected and incase of a bank failure, there is intereference in the financial system which may cause a deterioration in financial performance of other financial institutions. Kanas (2005) observed that indicators of financial distress in a bank make customers to move their funds from banks whether solvent or not. They do not bother to investigate if the problems with the failed bank are in the other banks due to the fear of losing their funds. This is the reason why if one bank goes down, other banks in the economy may also be affected positively or negatively since depositors may withdraw the funds from the failed bank and deposit them in other banks or even invest the money in equity, government securities or other investments.

In the past, a number of bank failures in several countries in the world have been witnessed. These failures led to more rigorous ways of regulation by regulators in all countries (Kaufman, 1994). These failures were as a result of various reasons including but not limited to loss of confidence by depositors and investors, poor corporate governance and insolvency. When a bank faces challenges of poor governance, issues of liquidity, low confidence levels by the public, its reputation goes down and as a result depositors of that bank may withdraw their deposits. A bank with few deposits runs the risk of poor financial performance since its sources of funding is constrained. The regulator may then decide to put the distressed bank under liquidation and thereafter wind it up. Winding up of a bank entails the sell of its assets to pay off creditors and distribute the rest to the shareholders after all debts have been settled. This inturn makes the general public to question the solvency of similar banks (banks in the same class).

From the time the recent bank failures occured in 2015 and 2016, the Kenyan economy witnessed several shifts in commercial banks. Some banks and mainly the tier III banks were acquired by big banks both local and foreign, others have been under the Central Bank of Kenya (CBK) support for a while, others sold part of their fixed assets to boost their liquidity and capital levels and some are still struggling to be liquid. Despite there being a number of new banks that were licensed after 2016, there are currently 38 banks in Kenya compared to 43 banks as at end of year 2015, an indicator of shrinkage of the financial sector. It is an indicator that small banks may have been significantly affected by the bank failure announcements. It is however not clear how the performance and other variables of the small banks were afftected by bank failures. Therefore, this study focused on the effect bank failures have on tier III banks in Kenya.

1.1.1 Commercial Bank failure

Kaufman (1994) indicated that when the net worth/capital of a bank goes to negative, in such situations the bank is deemed to have economically failed. Bank failure can also be defined as when a bank becomes insolvent making it unable to meet its obligations to both creditors and depositors. Indicators of bank failure are fundamental, very unusual and pose a threat to the viability of a bank. Such indicators include serious liquidity issues, capital deficiencies, poor corporate governance, poor asset quality as well as unsafe and unsound business conditions. Bank failure effects can be financial, political or economic.

Indicators of bank failure are fundamental, very unusual and pose a threat to the viability of a bank. Such iindicators include serious liquidity issues, capital deficiencies, poor corporate governance, poor asset quality as well as unsafe and unsound business conditions. Bank failures are usually very costly both to the bank, investors and the regulator. In the aftermath of a failure, regulators tighten

regulations and method of supervision to avoid future repeat of the same problems. In this regard, it is important for supervisors of banks to detect severely stressed banks early enough.

News of a bank that is illiquid spread quickly to the general public which causes depositors in other banks to withdraw their funds, what is referred to 'flight to safety' by customers; if this is not managed, systemic risks may arise and cause panic to other banks (Apostolik, Donohue and Went, 2009). Aharony and Swary (1983) indicated that fraud and internal irregularities as well as high default rates in loans were the major causes for bank failures. A bank that has gone under may opt to get funding from financially sound banks in order to pay its debts. In some cases, banks that have indicators of failure may be put under management of the regulator while when the conditions get worse they can be put under liquidation and some may be wound up.

Many studies in the area of bank failures have been previously done. Maloba (2016) and Muriungi (2016) used event study analysis to study the effect of bank failures in kenya on stock returns of banks listed at the Nairobi Stock Exchange (NSE). In this study, bank failure referred to banks that were placed under receivership or liquidated. In addition, bank failure was measured as an event where several events were analysed covering the period before and after bank failure announcements. History has shown Kenyan banks that were liquidated between 1993 and 1997 were ten, 2000 to 2005 were seven and between 2007 to 2012, seven banks were wound up. Dubai Bank, Imperial Bank Limited and Chase bank Limited were declared bankrupt on 14th August 2015, 13th October 2015 and 7th April 2016 respectively. The three announcements are the most recent failures in the Kenyan economy.

1.1.2 Financial Performance

The extent to which financial objectives of an institution are achieved is termed as financial performance. Financial performance is also the process by which firms operations are measured. It

can be referred to the extent in which financial goals of a financial institution are being achieved over time. It also forms a basis on what kind of decisions to be undertaken by stakeholders (Musau, Muathe & Mwangi, 2018). Financial performance can be reflected in the earnings per share, profits, return on assets, liquidity levels, market share, revenue levels (Pandey, 1999) among others. The financial performance analysis can be done cross-sectionally for similar firms in the same industry or through trend analysis over a certain period of time. Financial results are the best reflection of how an institution is doing in terms of achieving its business goals. Financial results are very useful to the organization as well as to stakeholders and investors. Performance measurement helps in tracking strategy implementation, assess completion of goals and also in appraising staff and senior management for purposes of rewarding them (Ittner & Larcker, 1998).

Performance in banks can be measured through the CAMEL Rating as used by most regulators, the parameters of CAMEL rating are adequate capital, quality of assets, the capacity of management, earnings and liquidity (Cole & Gunther, 1998). Capital adequacy as a performance indicator measures if an institution is adequately capitalised in line with CBK Prudential Guideline No. CBK/PG/03 on Capital Adequacy. Asset quality relates to the quality of of loans issued by banks to borrowers, the extent to which the loans are performing. Capacity of Manangement is in relation to if the bank has skilled, qualified and effective management team running the bank and earnings are profitability measures. Performance in banks can also be measured by Return on assets (ROA) and Return on Equity (ROE). The return on equity (ROE) and the return on assets (ROA) have been widely used and are considered appropriate measures of financial performance. This study used ROA in measuring financial performance.

1.1.3 Bank Failure and Financial Performance

A financially sound bank gives assurance and confidence to depositors, employees, shareholders and other stakeholders in the economy. For such assurance to be in place, there is need to for financial institutions to measure their financial position on an ongoing basis. This ensures that banks are operating efficiently and effectively and incases of poor perfomance, the same is identified early enough and measures put in place to improve the situation. Theoretically, when the various stakeholders have high confidence with banks, it is expected that they will invest in financial institutions leading to better performance. Similarly, if the confidence is erroded, most investors are expected to withdraw their funds from those banks leading to poor financial performance of the institutions. News of bank failures cause a bad reputation and may have a larger impact to the industry and the economy at large. In the spirit of monitoring the performance of banks in Kenya, the Central Bank of Kenya requires banks to publish un-audited financial statements on a quarterly basis and at the end of each year the audited reports.

A number of researchers have carried out studies on bank failure and performance of commercial banks. Kandrac (2014) indicated that bank failures can lead to various economic disturbances like breaking of banking relationships which could lead to worse effects economically incase of failure of a bank that engages in relationship lending. Cheserek (2007) stated that ratios used to measure return on assets, asset quality and capital adequacy are possible predictors of bank failure. Bernanke (1983) concluded that bank failures usually affect the future economy significantly. Kupiec and Ramirez (2009) by way of Vector Auto Regression (VAR) found out that bank failures lead to long term negative effects on economic growth. Peavy and Hempel (1988) concluded that bank failure was an independent event which did not significantly affect banks in other regions. Kanas (2005) indicated that United Kingdom (UK) showed contagion effects while there was none in the other two countries under study. Muriungi (2016) concluded that bank failure announcement affects the

performance of stock returns of listed banks in the NSE, Owino (2005) in his study revealed that stock returns of quoted banks decrease with bank failure announcement.

1.1.4 Tier III Commercial Banks

Banks are classified in terms of market size into three categories using a Weighted Composite Index (WCI). The WCI is a function of the level of total net assets, shareholders funds, number of loan accounts, total deposits and number of deposit accounts as a percentage of the entire market (2017 Bank Supervision Annual Report). Tier I banks are those in the large peer group category and have a market share of WCI greater than 5 percent, tier II banks have WCI between 1 percent and 5 percent and tier III below 1 percent. There were nine large banks, nine medim sized banks and twenty one small sized banks as at end of December 2015. Tier III banks are those categorized under small peer group.

In the 2007 to 2009 recession period, there was increased number of bank failures caused by poor economic environment and performance nation wide. The crisis that happened in 1980s in the banking industry was mainly due to high levels of unserviced loans, under-capitalization and weaknesses in management of banks. In the year 1992, Kenya suffered a systemic banking crisis and between 1986 and 1998, 37 bank failures were experienced. Between 1993 and 1997 ten banks failed and were put under liquidation, 2000 to 2005 seven banks were liquidated, 2007 to 2012, seven banks were wound up followed by three banks that went under between 2015 and 2016.

From the time the recent failure announcements were made in 2015 and 2016, the banking sector experienced increased consolidation through mergers and acquisition and generally a shrinkage in the financial sector; I&M Holdings Ltd acquired Giro Bank in February 2017, in May 2017 SBM Bank Ltd acquired Fidelity Commercial Bank, in August 2017 Diamond Trust Bank Kenya acquired Habib Bank (K) Ltd (HBL), merging of NIC Bank with Commercial Bank of Africa in September

2019, acquisition of National Bank of Kenya by KCB in 2019, acquisition of Transnational Bank by Access Bank of Nigeria in December 2019, subscription of 51 percent of the share capital of Mayfair Bank Limited (MBL) by Commercial International Bank (Egypt) S.A.E effective May 2020 which lead to a change of name from MBL to Mayfair CIB Bank Limited, acquisition of Jamii Bora Bank (now Kingdom Bank Limited) by the Co-operative Bank of Kenya.

1.2   Research Problem

Kaufman (1994) stated that when a bank fails, there is high chance that other banks in the economy will be affected by that failure and this do happen within a short span. It is in this regard that financial systems are said to be more likely to experience contagion risk at a faster rate. Earlier studies on bank failure indicate how banking contagion spread more widely resulting to losses by investors as well as the economy. Hence, the failure of one bank may implicate other financial institutions. In the year 2017, the Kenyan banking sector experienced increased consolidation through several mergers and acquisitions. The acquisitions are perceived to have been as a result of failure of Dubai Bank, Imperial Bank and Chase Bank Limited that happened between 2015 and 2016.

Previous international studies in the world suggest that there is a belief that bank failures could have damaging effects to the economy by going to the extent of affecting other banks in the region and beyond (Kaufman, 1994), Peavy and Hempel (1988) studied on systemic risk as a result of failure of Penn Square Bank and the results were mixed up, Saunders and Wilson (1996) analyzed the behavior of deposit flows for the period 1930-1932 and found evidence of contagion. Kanas (2005) tested for contagion in international banking after the failure of Bank of Credit and Commerce International which showed evidence of contagion in one country and none in the other two countries. Kandrac (2004) examined the relationship between bank failure and local economic performance and found that bank failure announcements had significant effect on the economy.

Local studies have also been carried out in the area of bank failure where, Muriungi (2016) examined how stock returns for banks listed at the Nairobi Stock Exchange were affected by the announcement of bank failure and found that bank failure announements significantly affected the performance of stock returns, Cheserek (2007) examined the determinants of bank failure of banks in Kenya. Owino (2005) examined the effect of a commercial bank failure on stock returns of quoted banks by use of event analysis and the results of the study revealed that on the stock average, stock returns of quoted banks decrease with failure of a commercial bank. From analysis and research carried out, both locally and internationally, there were no existing studies found that analysed the implication of bank failure on tier III banks. Most of the studies covered the effect bank failures had on the economy, country or the stock returns of listed banks. Therefore, a research gap was found in the area of effect of bank failure on performance of tier III banks. In this regard, this study filled this gap by answering the question, what is the effect of bank failure on the financial performance of tier III banks in Kenya?

1.3 Research Objectives

The aim of this study was to analyse the effect of bank failure on the financial performance of tier III banks in Kenya.

1.4 Value of the Study

Results of this research showed how small banks in Kenya were affected by bank failure announcements that happened in the period between 2015 and 2016. The bank failure announcements that happened between 2015 and 2016 were for Dubai Bank, Imperial Bank and Chase Bank Limited. The results of the study will be useful to CBK in that evidence of the effects of bank failure announcements on tier III banks will ensure that the regulator intervene for resolution and rescue in a timely manner whenever indicators of going down are manifested in financial

institutions. The timely intervention will prevent the bank failure effects from spreading to other players in the sector and the industry at large. Further, early intervention will minimise costs associated with bank failure, depositor losses will be avoided and depositor confidence will be mantained.

The results of the study will be useful to the commercial banks in operation in that, since there is evidence of negative effect of bank failure announcements on tier III banks, banks then have to ensure they are fully prepared to absorb such market shocks in the event of another bank failing. This can be achieved by putting in place best contigency funding plans and also seeking intermediation on time before distress. Banks will see the importance of ensuring adequate capital that include recommended capital buffers, maintaining Internal Capital Adequacy Assessment Process on annual basis where the bank will ensure adequate assessment is done that ensures the bank has adequate capital that covers all material risks facing the institution. All banks will see the need to always mantain liquidity over and above the regulatory requirements. High capital and liquidity levels will absorb shock in times of bank failure announcements hence reduce the impact.

The results of this research add to the existing literature in the area of bank failure and its effects on commercial banks performance and specifically on the performance of tier III banks. This acts as a source of reference for scholars, academicians and other researchers in not only understanding how bank failures affect performance for Commercial banks but also it will provide areas for further research. It will also be a source of literature to bank supervisors.

The study provides important information to investors and customers of financial institutions which can be used in decision making. Customers and investors most times refer to the publicly available information on banks such as financial statements and research findings in making investment decisions. The results herein, therefore, will be used for reference by various stakeholders.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on the underlying theoretical and empirical theories on bank failures and financial performance of commercial banks. It begins by reviewing the theoretical literature on bank failures and financial performance of banks, determinants of bank performance, empirical studies both local and international, conceptual framework then a summary and conclusion on the literature review highlighting the research gap existing in the topic of study.

2.2 Theoretical Review

This review focused on theories behind the study of bank failures and performance of tier III banks.

2.2.1 Contagion Theory

Born in 1841, Gustave Le Bon was a leading French psychologist known to be the founder of contagion theory. He is known for having interest in different areas of study but best known for contagion theory or the crowd effect. Contagion theory proposes that a group of people tend to strongly influence the behavior of individuals leading to irrational and emotional decisions. Contagion effect can also refer to where a risk in one market spills over to other markets leading to severe economic effects or when individual behavior is influenced by that of a crowd. Gustave Le Bon perspective on 'the crowd' was that when in a crowd, a person's conscience is submerged to the extent that they follow the majority in the crowd. However, Contagion theory is not always true as opposed by the convergence theory.

Some studies have been done on contagion such as Diamond and Rajan (2001) in a research on liquidity shortages and banking crisis indicated that bank failures could be contagious, the results showed that bank failures could affect liquidity negatively leading to liquidity shortages in the entire

system and a down fall of the banking system. Kupiec and Ramirez (2009) stated that bank failures could give rise to more damaging effects in the economy like negative externalities and loss in output which could have worse effects than those of a failure of a non-banking entity. Therefore, failure of one bank may affect several or all banks in the industry. Allen and Gale (2000) looked at how banks react to contagion and found out that in an incomplete financial structure, shocks in one region will spread quickly to other regions or sectors. However, Saez and Shi (2004) demonstrated that contagion can be prevented in financial institutions that are indirectly connected by a liquidity pool. Further, in a study by Kanas (2005), there was no evidence of contagion in some jusridictions, an indication that in countries with adequate regulations, contagion is preventable.

When many depositors withdraw their deposits from a bank that has indicators of failure or due to reputation damage, other individuals tend to follow suit and rush to withdraw their deposits too. This contagious behavior in most instances lead to bank failure since the bank will not have enough deposits due to the massive withdrawals driven by lack of confidence by the public. The results of this study showed existence of contagion effect as evidenced by the positive effect bank failure announcements had on liquidity, ROA and asset quality of tier III banks. There was a positive and significant relationship between asset quality, earnings, liquidity and bank failure, while capital adequacy was found to have insignificant relationship.

2.2.2 Theory of Market Power

In 1988, Jean Tirole founded market power theory under his book the theory of industrial organization. Tirole was born in 1953 and was a French professor of economics who received a Nobel award for analysis of market power and regulation. He is currently a professor at Toulouse 1 Capitole University in France and has specialized in different areas including industrial organization, economics and banking.

The ability of an organization to influence and set prices for an entire market is known as market power. The theory proposes that an organization has market power by dominating a significant part of the market. Price setting usually lead to higher profits over time. Keeley (1990) in his study stated that bank failures could arise due to low profits driven by intense competition among banks. To achieve financial performance a certain level of market power is required. This theory states that entry barriers to the market has an impact on profit.

Allen et al., (2011) found the existence of market power where he showed that banks that are performing poorly are usually forced to borrow from strong and stable banks with market power. The barrier of entry and exit in a sector like in the financial sector where firms are required to meet certain minimum requirements like capital levels are a source of market power.

In relation to this study, price setters are those banks with market power while those without are price takers. Tier I banks have market power, reason they attract most customers in the economy, huge customer base is a determinant of the size of deposits, liabilities and the overall performance of the bank. This can be interpreted as one of the reasons tier I banks are more stable in comparison with tier III banks. The relevance of this theory in the study is the indication that in the event of a bank failure, tier I banks may attract most of the country's customers despite the stringent standards they have in terms of lending and offering other services, while the tier III banks are likely to lose customers. The results of the study supported market power in that, after announcement of bank failures in 2015 and 2016, the liquidity, ROA and asset quality for tier III banks deteriorated significantly. Based on this, it can be concluded that the performance indicators were affected due to 'flight to safety' by customers from tier III banks to tier I banks that were perceived to be stable. Despite the high requirements needed in tier I banks, they still attracted customers due to their stability and market power.

2.2.3 Theory of Rational Expectation

The theory of rational expectation originated with John Fraser Muth in 1961 and was later used in macro economics by Robert Lucas. John Muth was an American economist born in 1930 who formulated this theory in the context of micro economics. The theory of rational expectation goes that individuals base their decisions on rationality, the available information and past experiences. It argues that the current situation can determine a future economic occurence.

Bad reputation on banks makes depositors to panic and withdraw funds from those banks with the fear of losing their investment. On rational basis, a failure of a bank currently may affect the performance of banks at a future date as well as the economy at large; this is on account of investors and the general public make rational decisions with a perception in mind of the impact a current situation may have in future. Market participants behaviour currently is driven by the perception they have about the future and such behaviour does validate the outcome of their expectations (Lucas and Sargent, 1981).

The results of the study supported the rational expectation on tier III bank's performance after bank failure announcement. The rational person expected that the bank failure announcements would lead to some lack of confidence in the tier III banks. This led to some depositors moving their deposits from tier III banks to more secure banks or investments. However, the parameters that were negatively affected by the bank failure announcements were ROA, liquidity and asset quality. Capital adequacy was however, not affected by the bank failure announcement which could not be in line with rational expectation in this case.

2.3 Determinants of Financial Performance

Performance of a bank is determined by many factors, which include but not limited to liquidity, bank failures, asset quality, size of the bank, earnings and capital adequacy.

2.3.1 Liquidity

Liquidity is a measure of the ability of an institution to meet its obligations in full as and when they fall due. Liquidity distress in one bank can affect the entire banking sector since banks' operations usually are interconnected through banking relationships. It is a requirement from by CBK for all banks to ensure they have a liquidity contingency plan and maintain a twenty percent statutory minimum of liquidity. Liquidity is measured by its deposit liabilities, short term and matured liabilities.

Diamond and Rajan (2001) argued that low levels of liquidity could lead to loss of investment opportunities and can put a bank in bad position where it will borrow at exploitative interest rates leading to a decline in returns. Holding high liquidity levels may be of benefit to banks in financing investments in instances where support from outside is impossible. Moreover, adequate liquidity enables banks to increase their lending as well as take advantage of attractive investment opportunities. In this study, liquidity ratio was measured as Net Liquid Assets divided as a percentage of Short Term Liabilities. Net Liquid Assets include Treasury Bills, Treasury Bonds, net balances with deposit-taking Micro Finance Institutions, net balances with mortgage Finance Companies, net balances with Financial Institutions, net balances with banks abroad and domestic Commercial banks, net balances with Central Bank of Kenya, notes and coins held. Short term liabilities are mainly deposit balances in the bank less amounts due to other financial institutions.

2.3.2 Bank Failure

One or more banks failing in the economy could affect the performance of other banks and even non-banking institutions in the economy. A failure would lead to loss of confidence by depositors and investors due to the spread of negative news who thereafter may decide to withdraw their deposits and investments in banks of that similar class to banks that are perceived to be stable. (De Grauwe, 2008).

Kaufman (2011) indicated that the failure of one bank could make both solvent and insolvent banks to be affected. In this regard, bank failures are a key indirect contributor to the performance of some of the banks in the economy. In this study, the failure of banks was measured as an event at the time of announcement of the failure. Performance was measured two years before and after the announcement.

2.3.3 Capital Adequacy

Capital is the most critical indicator of the relative strength of an institution. Adequate capital is a key parameter used by regulators and stakeholders to measure the stability of a bank. According to Bank Supervision Annual report 1998, shareholder's contribution in an institution is usually reflected in the capital levels, this capital acts as a cushion in a bank against any losses. The Basel Committee on Banking Supervision and the Central Bank of Kenya established guidelines for capital adequacy for the financial institutions which led to a requirement for every banking institution to maintain a certain level of capital. Farid (2010) indicated that all banks are required to prepare and maintain an Internal Capital Adequacy Assessment Process (ICAAP) document that aims at assessing the risks the institution faces and the additional capital required in line with the bank's risk profile. Adequate capital levels act as a cushion in times of crisis and an institution cannot be able

to invest without adequate capital. Total Capital divided by Risk weighted assets was used as the measure of capital adequacy in this study.

2.3.4 Asset Quality

Quality of assets has a direct relationship with the performance of commercial banks. The quality of assets in a financial institution is measured by the proportion of Non-performing loans to total gross loans. An increase in Non-Performing Loans leads to increase in provisions and provisions reduce profits. Loan portfolio is part of the asset portfolio in a bank and is a major source of income hence the direct relationship with profits. Non-performing loans (NPLs) can cause huge losses to a bank, hence, ratios relating to NPLs are good measures of performance. Low NPL ratio usually is an indicator of healthy performance. Even though asset quality could also be measured by Net NPLs divided by gross advances, this study used total NPLs to gross advances.

2.3.5 Earnings

There are different measures of earnings in commercial banks which include profitability, ROA and Return on Equity (ROE). High ROA and ROE generally reflects that an institution is performing well financially and has a lower likelihood of failing (Cole and Gunther, 1998). ROA is measured by profits before tax divided by the total assets of the institution. This study used ROA as the measure for financial performance or earnings.

2.4 Empirical Studies

Peavy and Hempel (1988) using a standard event study methodology, did a study to uncover how returns for some holding financial institutions were affected by the failure of Penn Square Bank. Those institutions with Penn Square loan participations experienced repeated failures in daily returns during the period under study. Further, banks in the same economic area had less severe but

constantly deteriorating returns while those away from the region were insignificantly affected. The conclusion was that the failure was an independent event which did not significantly affect banks in other regions. The study covered three years data of big banks in the selected countries, a bigger scope in terms of years and more banks would give more reliable results.

Kanas (2005) tested for contagion in international banking by use of an event study methodology. The study was done after the failure of Bank of Credit and Commerce International (BCCI) and focused on large banks in United Kindom, United States and Canada where BCCI had set its operations. Negative abnormal returns and cumulative abnormal returns were tested for banks in the three countries through the event study methodology adopted. Results of BCCI which was one of the largest bank failures world wide showed strong pure contagion effects in one country UK while in US and Canada there was no evidence of contagion. This study focused on different countries, there is need to focus on the effects a bank failure has on banks in its own jusrisdiction.

Kandrac (2014) examined the relationship between bank failure and local economic performance. He used a quasi-experimental propensity score matching technique to show failures that happened between 2008 to 2010 had a significant effect on the performance of the economy post bank failure announcements. However, the study could not cover a longer period due to limitation of data.

Kaufman (1994) examined how much contagion could spread in the banking sector and found out from the research that an initial failure did not directly cause further failures. Aharony and Swary, (1983) did studies to examine the performance of shares after announcement of a bank failure. They used data from stock markets and measured the extent to which surviving banks lost shareholders as evidenced by movement in share returns. The results indicated contagion effects as reflected by the negative abnormal returns.

Muriungi (2016) by use of event study analysed how stock returns for banks listed at the Nairobi Stock Exchange were affected by bank failures that happenned in 2015 and 2016. The results of the study indicated that the average abnormal returns demonstrated significance at the day of the announcement during the three bank failure announcement. Therefore, it was concluded that bank failure announcement affects the performance of the stock returns of listed banks. The study was however limited to banks listed at the NSE and used an estimation window of 120 days with an event window of 11 days.

Maloba (2016) analysed the implication commercial bank failures had on the stock returns of banks listed in the Nairobi Stock Exchange. The study was done by use of event analysis after the failure of Chase Bank Limited in April 2016. Analysis of the stock returns for ten banks that were listed was done and the statistical tool of analysis used was Microsoft Excel. The results of the study showed that stock returns for listed commercial banks were affected negatively by the bank failure announcement. The study however, did not analyse the effect this announcement had on other banks not listed in the NSE such as the tier III banks. Further, the study focused only on one bank failure event, Chase Bank Limited that happened in April 2016. It would be interesting to see the results based on the three bank failure announcemnets that happened in 2015 and 2016.

In his study, Gathaiya (2017) analysed the issues that affected collapsed banks in Kenya by use of diagnostic research design and content analysis approach. The period covered by the study was 2015 to 2016 and the subject failures were the failure of Dubai Bank Limited, Imperial Bank Limited and Chase Bank Limited. The study concluded that the major contributors to the collapsing of most banks in Kenya related to insider lending, poor management practices, lack of proper risk management, conflict of intrest, poor corporate governance, regulatory gaps, poor supervision and inadequate internal controls. The study however, was pegged on three objectives out of many factors

existing that affect bank failure. The three objectives focused in the study were the influence of corporate governance, non-performing loans and regulatory issues on collapsed banks in Kenya.

Cheserek (2007) did an analysis on the determining factors of failure of banks in Kenya. The study covered a period of five years between 1998 and 2005 and analysed using Statistical Package of Social Science. The results showed that bank failures did not have significant relationship with profit after tax, loans, equity and ROA but it was significantly related to total assets, the quality of assets and capital adequacy. In this study, data was analysed using SPSS package and gaps noted were that key ratios used in the study did not show a trend that is consistent and only 21 banks out of 42 were analysed. Further, the study evaluated only three variables of the CAMEL instead of the five variables.

Owino (2005) examined the effect of a commercial bank failure on stock returns of quoted banks by use of event analysis. The methodology adopted was event study analysis. The study focused on banks quoted at NSE and compared returns during the event window to 90 days' prior the event. The results of the study revealed that on the stock average, stock returns of quoted banks decrease with failure of a commercial bank.

Ogilo et al., (2018) by use of quantitative descriptive research design, carried out a study to determine the relationship between liquidity risk and the failure of commercial banks in Kenya for a period of three years from 2013. They also established the implications failure of banks had on other parameters such as the quality of bank assets, quality of management, sensitivity to market and profits. Even though the study had key findings and quality recommendations, a number of gaps do exist. The study left out Capital adequacy which is a key parameter in performance measurement, their focus was on Liquidity, asset quality, quality of management sensitivity to market and profits.

Further, the scope of the study was limited to three years and annual financial statements rather than quarterly financial statements. The study did not focus on macro-economic variables.

2.5 Conceptual Framework

The objective of this research was to analyse the implication bank failures have on performance of Tier III banks in Kenya. Financial performance which was measured in terms of ROA was one of the dependent variables and bank failure the independent variable. The study also showed how liquidity, capital adequacy and asset quality for tier III banks were affected by bank failure announcements, hence, they also formed part of the dependent variables.

Independent variable   **Dependent variables**

| **Event Announcement**

• Bank Failure |

| **Financial Performance:**

• Return on Assets

Liquidity

Capital Adequacy

Asset Quality |
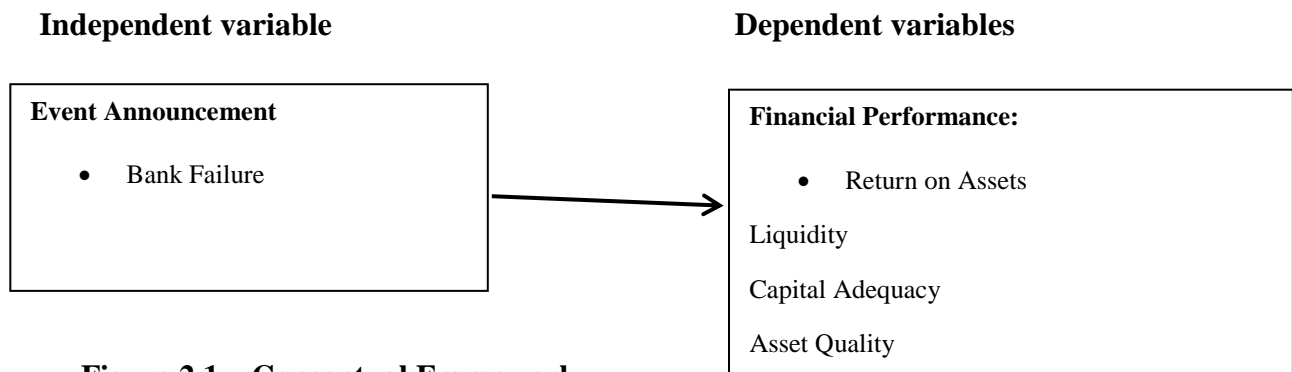
Figure 2.1 – Conceptual Framework

The model used event study where bank failure was the independent variable to investigate the implications it had on performance of small banks.

2.6 Summary of Literature review

Chapter two entailed review of existing theories relevant to the study and empirical studies on bank failure and performance of commercial banks. The study reviewed three theories; Contagion Theory, the Theory of Market Power and Theory of Rational Expectation. Both local and international studies were looked at in this chapter and several gaps identified on the studies.

The results of the empirical researches gave mixed results; in some instances it was observed that the failure was an independent event which insignificantly affected banks away from the region of the failed bank, in most instances the failure of a bank showed strong evidence of contagion effects which affected the performance of stock returns. From the results of another study, it was found out that there was a positive and significant relationship between asset quality, earnings, liquidity and bank failure, while there existed a negative relationship between bank failure and quality of management and market sensitivity while Capital adequacy and bank size were found to have insignificant relationship with failure of commercial banks in Kenya. From the review, the study found out that most of the local studies on bank failures and performance focused on banks that were listed at the Nairobi Stock Exchange only. In which case it is rare to find a tier III bank listed at the NSE. From the litereature review above, no research had been done in Kenya on the implication bank failures have on performance of tier III banks. This research gap was addressed through this study.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the research design, population of study, collection of data, data analysis and techniques.

3.2 Research Design

The study used paired test of difference in means and descriptive research design in analysing the effect of bank failures on the financial performance of tier III banks. The study involved an event and the event considered was the announcement of three bank failures that happened in 2015 and 2016. This method was selected because the study aimed at comparing the means of the data before bank failure announcements and mean on the actual performance after bank failures. The actual performance was also compared with expected performance after the bank failures. The study was carried out by analysing financial information of commercial banks before and after the failures obtained from the websites of institutions, the Central Bank of Kenya (CBK) website and past studies.

3.3 Population of Study

The study population covered all the tier III Banks in Kenya as at December 2016 which were 21 in number. However, the study used 18 of the total tier III banks and excluded tier III banks that were acquired in the post failure announcement period. The study focused on the period before Dubai Bank failure and period after Chase Bank failure to see the effect the bank failures had on performance of tier III banks. Imperial Bank Limited failure happened in between Dubai Bank and Chase Bank Limited. To ensure reliability, the study covered analysis for two years pre-failure and two years post-failure. The event window was determined to cover December 2015 to June 2016.

3.4 Data Collection

Secondary data was obtained for all financial institutions under study from their websites and CBK website on a quarterly basis. The period covered was two years before and two years after the announcement of the three bank failures, Dubai Bank Limited, Imperial Bank Limited and Chase Bank Limited. Data was collected from December 2013 to September 2015 which was the pre-failure period and from September 2016 to June 2018 for post failure period. Event window being December 2015 to June 2016.

3.5 Data Analysis

Analysis of data was done with an aim of answering the research question and establishing the effect bank failure announcement has on performance of tier III banks in Kenya. Descriptive analysis involved use of charts in analysing the data before and post failure. Since the study had an aspect of an event, identification of the event including the announcement dates was the first step. In this study, the events were Dubai Bank failure, Imperial Bank failure and Chase Bank failure announcements that happened 14th August 2015, 13th October 2015 and 7th April 2016 respectively. Secondly, identification of estimation, event and post-event windows. The study covered 18 tier III banks in Kenya during the event period and focused on two years prior and two years post the bank failures.

Estimation Window   Event Window   Post-event Window

-2 years   0 (December 2015 to June 2016)   +2 years
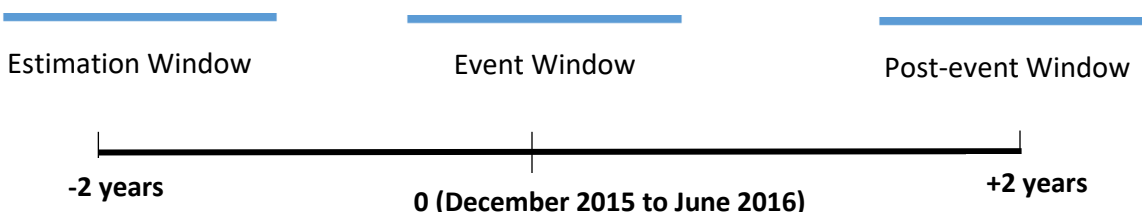
Using SPSS, expected performance post-event window was determined and the paired t-test of difference in means was computed. Expected performance in the event period was estimated using

two year historical performance for each bank before the bank failure announcements and was computed using coefficients of a linear regression as $Y = a + bx$,

Where Y is expected performance, b is the slope, a is the intercept and x is the peer performance for tier III category of banks for each quarter. Two pairs of data were analyzed using the paired t-test of difference in means using the Statistical Package of Social Sciences. Pair 1 was a comparison of means for data before bank failure announcements and the actual performance observed after the bank failure announcements while pair 2 was a comparison of means of the actual performance observed visa-vis the expected performance after bank failure announcements.

The test of difference in means and correlation analysis using SPSS was used in determining the effect of bank failure on performance of tier III banks.

Hypothesis testing was done where;

The null hypothesis: The means of the two pairs of data are not different or performance of tier III banks and bank failure announcements are independent.

Alternative hypothesis: The means of the two sets of data are different or performance of tier III banks and bank failure are dependent.

Decison Rule: The null hypothesis is rejected if the p-value<0.05 at at 5% level of significance.

3.5.1 Test of Significance

The test of significance was done using SPSS at 5% significant level. The null hypothesis is rejected if p-value <0.05 at 5% level of significance.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of the analysis and findings of the study with reference to the study objectives. In particular, 4.2 discusses the variable trends, 4.3 discusses the empirical model, section 4.4 presents the t-test analysis and discussion and section 4.5 presents the summary.

4.2 Variable Trends

Trend analysis for variables of tier III was done and the results presented in the charts below. The results are a reflection of the movement in the parameters from two years before the bank failure announcements to two years after the bank failure announcements. Trend analysis has been done for ROA, Capital Adequacy, Asset quality and Liquidity.

Figure 4.2: Return on Asset Trend Analysis
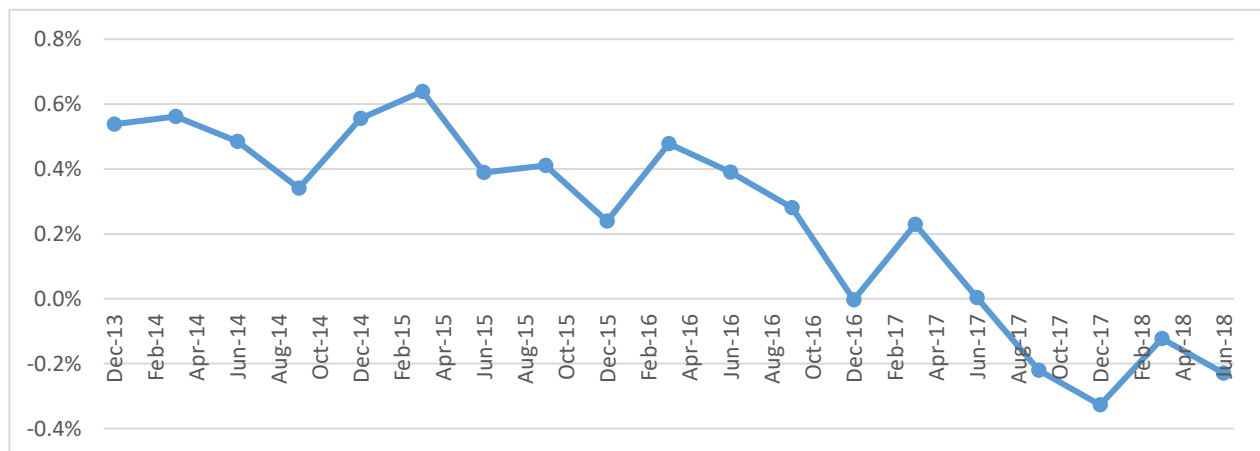
Source: Research findings (2021)

The period post bank failure announcements covered from June 2016 to June 2018. The results of the study as shown in Figure 4.2 above indicate that total ROA for tier III banks generally recorded a downward trend in most quarters in the period post bank failure in comparison with the pre-failure period. This is as evidenced by sharp decrease in ROA from June 2016 through to December 2016 and a further sharp decline in April 2017 to November 2017. The ROA was below 0.3 percent and

went up to negative 0.3 percent in the period post bank failure announcement compared to a ROA ratio of 0.3 percent in the period before the announcements. This could be attributed to the bank failure announcements done in August 2015, October 2015 and April 2016. The next question would then be, is this post-bank failure changes significant? The significance of the results will be tested in section 4.4 of this chapter.

Figure 4.3: Total Capital/ TRWA Trend Analysis
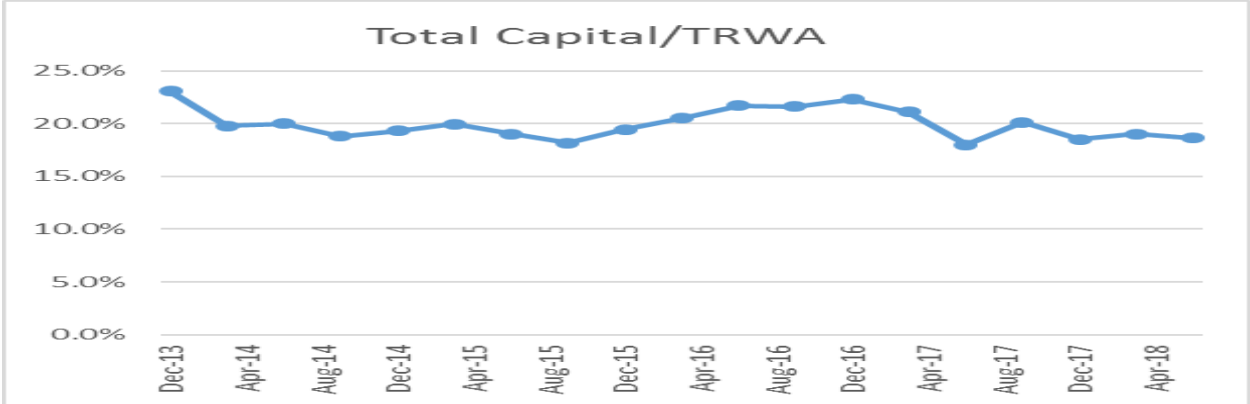
Source: Research findings (2021)

Capital adequacy as measured by total capital to Total Risk Weighted Assets (TRWA), recorded a slight upward trend from September 2015 to December 2016 and dropped back in the remaining periods to same level as before bank failure announcements. Generally, the trend after bank failure announcements is almost similar to before the announcements with capital adequacy ratio ranging from 18 percent to 22 percent in both periods. The minimum capital adequacy ratio set by CBK is at 14.5 percent and the results show that tier III banks were generally compliant over the post bank failure announcement period and the trend observed did not look any different from the pre-failure period. This could mean that capital adequacy for tier III banks was not affected by bank failure announcements. Section 4.4 of this chapter will give the significance t-test results for reliance.

Figure 4.4: Gross Non-Performing Advances/ Gross Loans Trend Analysis
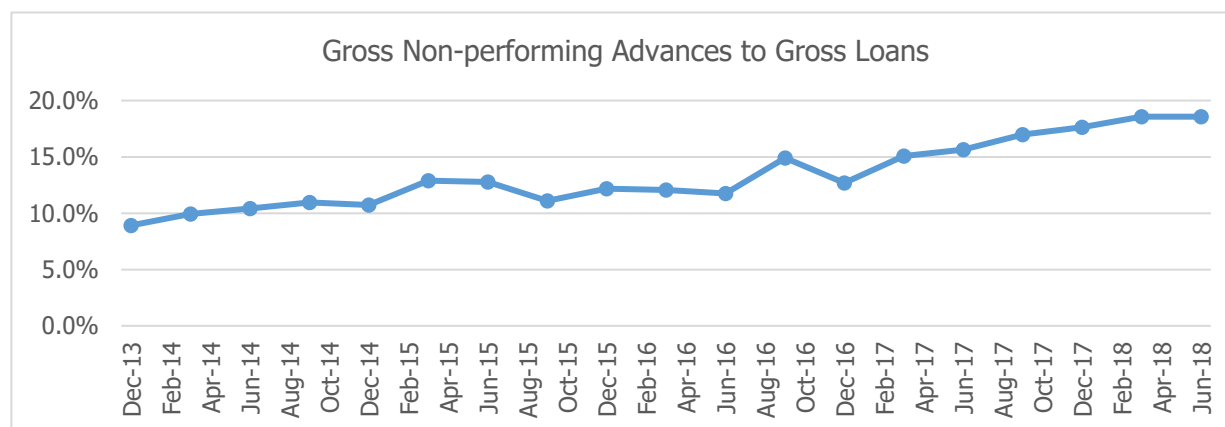
Source: Research findings (2021)

Gross Non-Performing Loans to Gross Advances which is a measure of asset quality had an upward trend in most of the period after bank failure announcements. The higher the asset quality ratio, the less quality are the loans issued by the institution. This is because, a high asset quality ratio indicates that the proportion of Non-Performing Loans (NPLs) is high compared to the total gross loans. The asset quality ratio as at April 2018 was at 19% compared to 10% as at April 2014. The asset quality ratio generally showed an increasing trend from June 2016 to June 2018 compared to the period before bank failure announcement. This upward trend in the ratio is an indication of deterioration in the quality of loans. Section 4.4 answers the question "Is this upward trend significant?"

Figure 4.5: Liquidity Ratio Trend Analysis
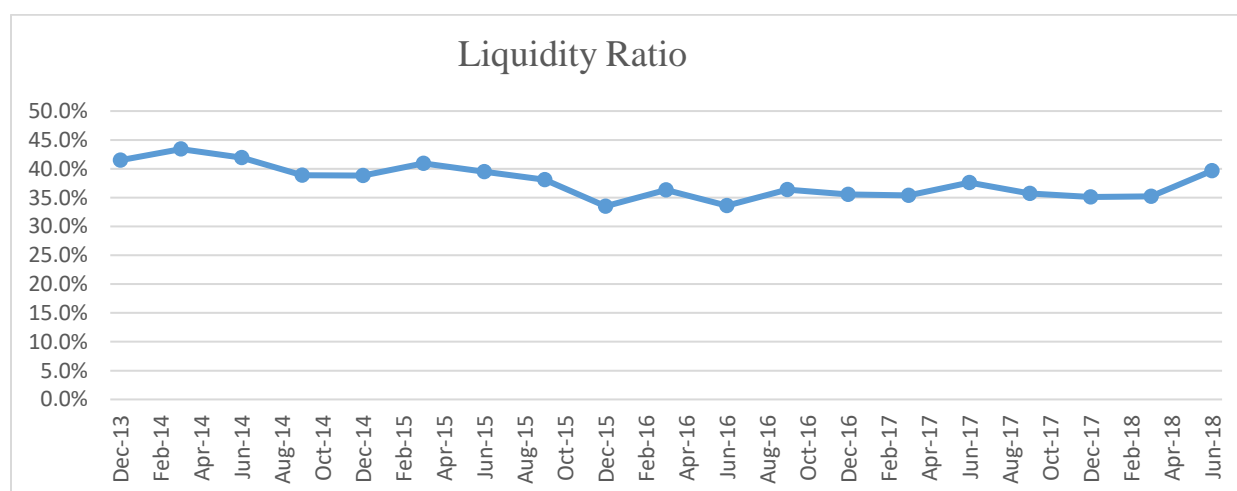
Source: Research findings (2021)

Decline in liquidity ratio was observed from December 2015 to June 2018 in comparison with the period before bank failure announcements. Liquidity ratio in the period post bank failure announcement was at an average of 35 percent compared to 40 percent before the bank failure announcements. Hypothesis testing under section 4.4 gives conclusive results on whether the movement observed was significant.

4.3 Estimated or Empirical Model

Appendix 2 presents the data for actual performance before bank failure announcement, expected performance after bank failure and actual performance after bank failure announcement. The last column of each of the aforementioned in appendix 2, shows the average performance for tier III per quarter. The event window covered December 2015 to June 2016 on account of the first bank failure announcement was in August 2015 and we assume the effect was not felt in September 2015, while the last bank failure announcement for Chase Bank Limited was made in April 2016.

Using SPSS, a paired t-test on test of difference of means was used to determine whether the mean difference between two sets of observations was significant. Two pairs of data were used for purposes of reliability. The observations compared in the study were actual performance before failure to actual/observed performance (pair 1) after the event window on a quarterly basis. Another set of data (pair 2) that was compared is the actual performance after failure versus the expected performance after bank failure announcement. Using SPSS, the expected performance was computed using the market model in which case the linear regression coefficients and the average tier III return for each period were obtained. The market model used in the study is as shown below;

Y= a + bx

Where b is the slope, a is the intercept and x is the peer performance for tier III category of banks for each quarter. The peer performance is the average for all the tier III banks for each period. Y is the expected performance predicted using co-efficient a and b.

4.4 T-test Analysis

A paired sample t-test is used in determining if the mean between two sets of data is significantly different. In which case the null hypothesis assumes that the means of the two data sets are equal while the alternative hypothesis assumes that the means of the two data sets are different. Using SPSS, paired t-test analysis of difference in means was done at 95% confidence interval. The results of the test are as shown in the following tables;

Table 4.4.1 - T-Test Statistical Results For Average ROA

Paired Samples Test										
		Paired Differences								Significance
			Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
		Mean			Lower	Upper				
Pair 1	Before failure - Actual After Failure	0.38%	0.36%	0.13%	0.08%	0.68%	2.97	7	.010	.021
Pair 2	Actual After Failure - Expected after Failure	-0.61%	0.35%	0.12%	-0.90%	-0.32%	-4.96	7	<.001	.002

From table 4.4.1 above, the p-value for two tailed t-test for difference in means was at p=0.021 for pair 1 and p=0.002 for pair 2. This means that p<0.05 for both pairs, hence significant for ROA at 95% level of confidence. P-value is significant if it is less than 0.05 (5%) at 95% confidence interval. From the results above, the effect of bank failure announcement on ROA was significant, since p-value is less than 0.05.

Table 4.4.2 - T-Test Statistical Results For Average Asset Quality

Paired Samples Test										
		Paired Differences								Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Before Failure - Actual after failure	-5.38%	1.50%	0.53%	-6.63%	-4.13%	-10.16	7	<.001	<.001
Pair 2	Actual after failure - Expected after failure	1.38%	1.19%	0.42%	0.39%	2.39%	3.29	7	.007	.013

Table 4.4.2 above gives a summary of the t-test results for asset quality, the p-value for two tailed t-test for difference in means was at p<0.001 for pair 1 and p=0.013 for pair 2. This means that p<0.05 for both pair 1 and 2, hence significant for asset quality at 95% level of confidence. The means of the samples were significantly different before and after failure as well the mean expected after bank failure announcement was significantly different from the mean of actual asset quality observed after the announcements. From the results above, the effect of bank failure announcement on asset quality was significant, since p-value is less than 0.05.

Table 4.4.3 - T-Test Statistical Results For Average Liquidity

Paired Samples Test										
		Paired Differences								Significance
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	One-Sided p	Two-Sided p
					Lower	Upper				
Pair 1	Before failure - Actual after Failure	7.9%	4.53%	1.60%	4.12%	11.69%	4.94	7	<.001	.002
Pair 2	Actual after Failure - Expected after failure	-4.5%	1.99%	0.71%	-6.17%	-2.84%	-6.39	7	<.001	<.001

Table 4.4.3 above gives a summary of the t-test results for liquidity, the p-value for two tailed t- test for difference in means was at p=0.002 for pair 1 and p<0.001 for pair 2. This means that p<0.05 for both pair 1 and 2, hence significant for liquidity at 95% level of confidence. The means of the samples before and after failure were significantly different as well the mean expected after bank

failure announcement was significantly different from the mean of actual liquidity after the announcements. From the results above, the effect of bank failure announcement on liquidity was significant, since p-value is less than 0.05.

Table 4.4.4 - T-Test Statistical Results For Average Capital Adequacy

Paired Samples Test										
		Paired Differences							Significance	
			Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				One-Sided p	Two-Sided p
		Mean			Lower	Upper	t	df		
Pair 1	Before Failure - Actual after failure	0.29%	2.57%	0.91%	-1.85%	2.44%	.322	7	.379	.757
Pair 2	Actual after failure - Expected after failure	-0.54%	1.99%	0.71%	-2.21%	1.13%	-.767	7	.234	.468

Table 4.4.4 above gives a summary of the t-test results for capital adequacy, the p-value for two tailed t- test for difference in means was at p=0.757 for pair 1 and p=0.468 for pair 2. This means that p>0.05 for both pair 1 and 2, hence not significant at 95% level of confidence. This implies that, the means of the samples before and after bank failure announcement were not significantly different. The mean of the expected sample after bank failure announcement visa vis the actual capital adequacy after bank failures was not significantly different. Accordingly, the effect of bank failure announcement on capital adequacy for tier III was not significant, since p-value is greater than 0.05.

4.5 Summary and Discussion of Findings

The three bank failure announcements happened in August 2015, October 2015 and April 2016 and since the study uses quarterly data, two years before and two years after the three failures, the event window was taken as December 2015 to April 2016. Paired t-test of difference of means was carried out using SPSS and test of significance performed. As shown in the tables in section 4.4 above, p-

value for two tailed test for ROA was 0.021 and 0.002 for pair 1 and 2 respectively; p-value for asset quality was 0.001 and 0.013 for pair 1 and 2 respectively; p-value for liquidity was 0.002 and 0.001 for pair 1 and 2 respectively while p-value for capital adequacy was 0.757 and 0.468 for pair 1 and pair 2 respectively. The p-value is significant if it is less than 0.05 (5%) since confidence interval is at 95%. Therefore, if $p<0.05$ there is a statistically significant difference in the means of the samples and if $p> 0.05$, the means are not significantly different.

P-value for ROA, liquidity and asset quality was <0.05 hence significant while for capital adequacy was not significant at p-value >0.05. These results are consistent with the trend analysis shown in section 4.2 where capital adequacy ratios after the event window did not show a different trend compared to the period before bank failure announcements while for ROA, liquidity and asset quality, the trend after the event window showed an increasing trend in comparison to the period before the event window. The null hypothesis, that performance of tier III banks and bank failure are independent is therefore rejected at a confidence level of 95%. It can be concluded that bank failure announcements affected the ROA, liquidity and asset quality for tier III banks. The results of this research indicate that ROA, liquidity and asset quality for tier III banks are negatively affected by bank failure announcements.

CHAPTER FIVE: SUMMARY AND CONCLUSION

5.1 Introduction

This chapter covers a summary of the findings and conclusions drawn from the study. It also lists some limitations of the study and recommendations for further research.

5.2 Summary of the Findings

This study was carried out to establish the effect bank failure announcements had on the financial performance of tier III banks in Kenya. Financial performance was measured using ROA while other variables used were liquidity, asset quality and capital adequacy. In the year 2017, after the bank failure announcements, the Kenyan banking sector experienced increased consolidation through several mergers and acquisitions. Banks that were acquired in the period post the bank failure announcements were struggling financially post the announcements and were mainly under the tier III category. There was a perception that the tier III banks may have been affected by the bank failure announcements which made them struggle financially which was a focus of this study. The extent to which the bank failure announcements affected tier III banks was not known.

Results of test of significance in Chapter 4 showed that the means for ROA, liquidity and asset quality for tier III banks before and after bank failure announcements were statistically different. Further, the means for expected performance versus the actual performance after bank failure was statistically different for ROA, liquidity and asset quality. The t-test analysis for ROA, liquidity and asset quality showed $p<0.05$ leading to a conclusion that the mean difference before and after failure is significant and therefore, these parameters were affected by the bank failure announcements. On the other hand, the p-value for capital adequacy was 0.757 and 0.468 for pair 1 and pair 2 respectively which is $p>0.05$ hence the mean difference was not significant. This led to the conclusion that capital adequacy was not affected by the bank failure announcements.

The mean for liquidity ratio before failure was at 42% with expected liquidity ratio being at 38.7% while the actual ratio after failure was at 34%. Using SPSS, this showed a negative and significant correlation of -0.69 between liquidity and bank failure announcements. The mean for ROA before failure was at 0.27%, expected ROA at 0.5% and actual after failures at -0.11%. The correlation for ROA was at -0.5 for pair 1 and -0.7 for pair 2. Therefore, bank failure announcements led to a significant decline in the performance of tier III banks in the period after announcement. Asset quality (NPL to Gross loan ratio) recorded a positive and significant correlation of 0.8 with bank failure announcement. Increase in the NPL to Gross loans ratio is an indication of deterioration of the asset quality for the institutions. Bank failure announcements led to the deterioration of the asset quality for tier III banks in the period post bank failure. Capital adequacy recorded a correlation of 0.2 and the t-test statistic results were not significant.

The results of this study show some evidence of contagion in support of the contagion theory identified in Chapter 2. Contagion theory proposes that a group of people tend to strongly influence the behavior of individuals leading to irrational and emotional decisions. After the bank failure announcements, some depositors in the tier III banks might have influenced each other and moved their deposits from the tier III banks that were at the time perceived to be unstable. This 'flight to safety' by customers of the tier III banks could have led to a decline in deposits, total gross loans and liquidity. A decrease in deposits directly affects liquidity levels due to a reduction in funding while a reduction in the number of depositors could mean the number of bank's customers reduced. Reduction in number of customers affected the number of loan accounts or number of customers available to borrow. Moreover, a decrease in deposits in a bank reduces the funding available for lending to other customers meaning that the number of loans went down subsequently. This supports the deterioration of asset quality in terms of reduction in the amount of gross loans in the period after bank failure announcements, holding NPLs constant. On the other hand, asset quality might have

deteriorated due to an increase in NPLs. With a number of customers having transferred their deposits to other investments, it is likely that some might have left their existing loans in these tier III banks without being serviced hence high NPLs. However, for capital adequacy, banks are required to maintain a certain level of capital (including a buffer) at any given time to help in cushioning the bank in periods of shock. The earnings before tax might not have decreased significantly to the extent of affecting reserves of tier III banks hence the reason there was no significant change in capital adequacy levels before and after the events. Furthermore, some tier III banks boosted their capital levels through such actions as selling of assets or obtaining more funding externally. Banks that struggled much in the period post bank failure announcements were acquired by other institutions while others obtained additional funding through sell of buildings that might have boosted their capital levels. It is also important to note that, the sample of tier III banks after bank failure announcements excluded the banks that were acquired between April 2016 and June 2018.

Further, the results of the study support the theory of market power in that tier I banks have market power and usually attract most customers in the economy. Tier I banks have huge customer base which is a determinant of the size of deposits, liabilities and the overall performance of the bank. This makes them to be perceived more stable that tier III banks. Accordingly, after the tension created by bank failure announcements, tier I banks may have been perceived to be safer by depositors making individuals prefer depositing their money with the tier I banks instead of tier III banks. This led to a negative impact on liquidity, overall performance in terms of ROA and also asset quality for tier III banks. Asset quality may have been affected in the sense that customers moved their funds to other banks and this may have stopped direct check-off for loans in the small banks leading to a rise in the NPLs. Tier III banks whose market power is lower compared to tier I banks could not therefore, retain their customers after the spread of negative news.

Based on the theory of rational expectation, customers may have used the information available or bad news spreading in making decisions. After the bank failure announcements, there was spread of negative information on tier III banks which might have led to bad reputation on their stability. As a result, it can be concluded that depositors in small banks panicked and in turn moved their deposits from tier III to other stable and secure investments which led to loss of customers by the Tier III banks. Upon shift of deposits by customers, leaving behind existing loans with the small banks, customers could have been tempted not to continue servicing their loans in the absence of a direct check-off system.

ROA which is a function of profits and total assets was affected by the withdrawal of deposits by customers. A reduction in the number of customers led to reduction in number of loan take up hence a reduction in total assets. The profits for tier III reduced post bank failure announcements due to a reduction in interest income on gross loans and advances, where loans and advances decreased with a decrease in number of customers in the bank and amount of funding available to the bank.

From literature review in Chapter 2, no specific research had been done on the effect of bank failure announcement on the performance of tier III banks. However, other studies were done on the effect bank failure announcements had on stock returns and performance of all banks as well as those listed at the Nairobi Stock Exchange. The results of these previous studies gave mixed results but the results of this study are consistent with some of the studies covered under literature review, where, there was a positive and significant relationship between asset quality, earnings, liquidity and bank failure, while capital adequacy was found to have insignificant relationship. These results related to all commercial banks in Kenya. In this study, there is insignificant relationship between capital adequacy for tier III banks and bank failure announcement while there is a significant relationship between ROA, liquidity, asset quality and bank failure announcements.

5.3 Conclusions

The research concludes that bank failure announcements affects the performance of tier III banks in the period post failure announcement. The results of the study indicate that ROA, liquidity and asset quality were significantly affected by the bank failure announcements as supported by the negative and significant correlation. However, the bank failure announcements did not significantly affect capital adequacy for tier III banks and there was a weak correlation between bank failure announcements and capital adequacy for tier III banks. Capital adequacy is a measure of a bank's capital to its risk and is an indicator of a bank's stability (Musyoka, 2017). All banks are required to maintain a certain level of capital as per the CBK Prudential Guideline and in most instances capital is injected by shareholders. Accordingly, it could be argued that the withdrawal of funds by depositors affected the deposit level for banks and not the capital levels, reason why capital adequacy was not significantly affected.

Based on the results of this study, it is clear that future bank failure announcements will have a negative impact on the performance of small banks. The many acquisitions that happened in 2017 as a result of deterioration in performance could be linked to the panic caused by the bank failure announcements made in late 2015 and 2016. Some Tier III banks struggled for a number of years to the extent of getting financial support from CBK and sale of assets to raise capital. Accordingly, regulators of commercial banks should monitor performance of banks strictly so as to identify indicators of failure early enough. This will ensure identification and monitoring of problematic banks for effective resolution and recovery. Regulators should put in place stringent measures and implement multi-dimensional early warning system towards preventing bank failures that may affect other institutions negatively.

5.4 Limitations of the Study

The study focused on the impact of bank failure announcements on performance of tier III banks as measured by ROA. However, there are other measures of performance such as profitability, net-interest margins and Return on Equity. Even though there are other measures of performance in banks, ROA is also a good measure as used in the study.

The study used total capital to risk weighted assets as a measure of capital adequacy but there are other measures of capital adequacy such as core capital to risk weighted assets. Therefore, the findings are based on the used measures since other measures may yield different results. However, total capital is the best measure of capital adequacy.

The study covered bank failure announcements that happened in 2015 and 2016, two years before the failures and two years post the failures. The findings in this study are based on these specific failures. Enhanced study covering other bank failure announcements in Kenya as well as in other jurisdictions could be studied.

5.5 Recommendations for Further Research

The study focused on tier III banks in Kenya, further studies should be done on the effect of bank failure announcements on the performance of tier I and tier II banks. It will be interesting to see the impact bank failure announcements had on tier I banks especially with the perception that most depositors who moved from tier III banks transferred their deposits to tier III or other secure investments.

The population for this study was tier III banks in Kenya. Similar studies on the effect of bank failure announcements on tier III banks should be carried out in other jurisdictions outside Kenya. Some previous researches indicate that the impact of bank failure announcements could be dependent on the regulatory measures in place and government support. Therefore, the effect of bank

failure announcements on tier III banks could be done in another jurisdiction to validate the results of previous researches.

There are other measures of performance apart from ROA, capital adequacy, liquidity and asset quality which can be used in determining the impact of bank failure announcements on performance of Tier III banks. Other studies could be carried in this area of study but with other measures of performance or using different measurements for earnings, capital adequacy, liquidity and asset quality.

REFERENCES

Aharony, J., & Swary, I. (1983). Contagion effects of bank failures: Evidence from Capital Markets. *The Journal of Business*, *56*(3), 305-22.

Allen, F., Carletti, E., & Marquez, R. (2011). Credit market competition and capital regulation. *The Review of Financial Studies*, *24*(4), 983-1018.

Allen, F., & Gale, D. (2000). Financial contagion. *Journal of Political Economy*, *108*(1), 1-33.

Apostolik, R., Donohue, C., & Went, P. (2009). Foundations of banking risk: An overview of banking, banking risks, and risk-based banking regulation.

Bernanke, B. S. (1983). Nonmonetary effects of the financial crisis in the propagation of the Great Depression. *The American Economic Review*, *73*(3), 257-276.

Cole, R. A., & Gunther, J. W. (1998). Predicting bank failures: A comparison of on-and off-site monitoring systems. *Journal of Financial Services Research*, *13*(2), 103-117.

Cheserek, B. K. (2007). The determinants of bank failures: A survey of commercial banks in Kenya *Unpublished MBA Project,* University of Nairobi.

De Grauwe, P. (2008). The banking crisis: Causes, consequences and remedies. CEPS policy brief No. 178, November 2008.

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy*, *91*(3), 401-419.

Diamond, D. W., & Rajan, R. G. (2001). Liquidity risk, liquidity creation, and financial fragility: A theory of banking. *Journal of Political Economy*, *109*(2), 287-327.

Gathaiya, R. N. (2017). Analysis of issues affecting collapsed banks in Kenya from year 2015 to 2016. *International Journal of Management and Business Studies*, *7*(3), 9-15.

Ittner, C. D., & Larcker, D. F. (1998). Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. *Journal of Accounting Research*, *36*,1-35.

Farid, J. A. (2010). *Internal Capital Adequacy Assessment Process (ICAAP)-Overview & Core Concepts.*

Kanas, A. (2005). Pure contagion effects in international banking: The case of BCCI's failure. *Journal of Applied Economics*, *8*(1), 101-123.

Kandrac, J. (2014). *Bank failure, relationship lending, and local economic performance* (No. 2014-41). Board of Governors of the Federal Reserve System (US).

Kaufman, G. G. (2011). A program for minimizing the private and public costs of bank failures. *Financial Market Regulation*, 81-92.

Kaufman, G. G. (1994). Bank contagion: A review of the theory and evidence. *Journal of Financial Services Research*, *8*(2), 123-150.

Kupiec, P. H., & Ramirez, C. D. (2009). Bank failures and the cost of systemic risk: Evidence from 1900 to 1930. *Journal of Financial Intermediation*, *22*(3), 285-307.

Lucas, R. E., & Sargent, T. J. (1981). *Rational expectations and econometric practice* (Vol.1). University of Minnesota Press.

Maloba, I. N. (2016). Effect of bank failures in Kenya on stock returns of commercial banks listed at the Nairobi Securities Exchange. *Unpublished MBA Project,* University of Nairobi.

Muriungi, K. M. (2016). Effect of commercial bank failure announcement on stock returns of banks listed at the Nairobi Securities Exchange. *Unpublished MBA Project,* University of Nairobi.

Musau, S., Muathe, S., & Mwangi, L. (2018). Financial inclusion, bank competitiveness and credit risk of commercial banks in Kenya. *International Journal of Financial Research 9* (1). 203-218.

Musyoka, B. K. (2017). Effect of bank failures in Kenya on stock returns of commercial banks listed at the Nairobi Securities Exchange. *Unpublished MBA Project,* University of Nairobi.

Owino, N. O. (2005). Effect of capital adequacy on the financial performance of commercial banks in Kenya. *Unpublished MBA Project,* University of Nairobi.

Ogilo, F., Omwoyo, J., & Onsomu, Z. (2018). The relationship between liquidity risk and failure of commercial banks in Kenya. *Unpublished MBA Project,* University of Nairobi.

Pandey, I. M. (1999). *Financial Management* (8th ed.). New Delhi: Vikas Publishing House PVT Ltd.

Peavy III, J. W., & Hempel, G. H. (1988). The Penn Square bank failure: Effect on commercial bank security returns. *Journal of Banking & Finance*, *12*(1), 141-150.

Sáez, L., & Shi, X. (2004). Liquidity pools, risk sharing, and financial contagion. *Journal of Financial Services Research*, *25*(1), 5-23.

Saunders, A., & Wilson, B. (1996). Contagious bank runs: Evidence from the 1929–1933 period. *Journal of Financial Intermediation*, *5*(4), 409-423.

Waweru, N., & Kalani, V. M. (2008). Commercial banking crises in Kenya: Causes and remedies. *Global Journal of Finance and Banking Issues*, *3*(3).

APPENDICES

Appendix 1: List of Tier III Banks in Kenya as of December 2016

1	ABC Bank Ltd
2	Consolidated Bank of Kenya Ltd
3	Credit Bank Ltd
4	Development Bank of Kenya Ltd
5	First Community Bank Ltd
6	Guaranty Trust Bank Ltd
7	Guardian Bank Ltd
8	Gulf African Bank Ltd
9	Habib Bank A.G. Zurich
10	Jamii Bora Bank Ltd (Now Kingdom Bank Limited)
11	M - Oriental Commercial Bank
12	Middle East Bank (K) Ltd
13	Paramount Bank Ltd
14	Spire Bank Limited
15	Trans- national Bank Ltd (Now Access Bank PLC)
16	UBA Kenya Ltd
17	Victoria Commercial Bank Ltd
18	Sidian Bank Ltd
19	Giro Commercial Bank Ltd (Acquired by I&M Bank Limited in 2017 - excluded from the study)
20	Habib Bank Ltd (Acquired by Diamond Trust Bank Limited in 2017 hence, excluded from the study)
21	Fidelity Commercial Bank Ltd (Acquired by SBM Holding Limited in 2017, hence excluded from the study)

Appendix 2: Secondary Data Used in Data Analysis

Data for Return on Assets

ROA BEFORE BANK FAILURES

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB		Average for Tier III
Dec-13	0.34%	-0.3%	1.6%	0.9%	1.3%	0.9%	0.3%	0.5%	0.5%	0.7%	-1.1%	-0.3%	0.0%	0.68%	0.5%	0.1%	-6.6%	0.01%		0.00%
Mar-14	0.42%	1.2%	0.7%	0.8%	0.9%	1.0%	0.5%	0.2%	0.3%	0.7%	0.1%	0.3%	0.3%	0.38%	0.4%	0.8%	-1.3%	-0.16%		0.40%
Jun-14	0.36%	1.0%	0.7%	0.8%	0.9%	1.0%	0.5%	0.3%	0.1%	0.7%	0.1%	0.0%	0.3%	0.59%	0.3%	0.3%	-2.6%	0.60%		0.33%
Sep-14	0.13%	1.1%	0.6%	0.7%	0.9%	1.0%	0.6%	0.1%	0.6%	0.9%	-1.0%	0.1%	-0.1%	0.52%	0.5%	0.4%	-2.4%	0.78%		0.32%
Dec-14	-0.48%	1.6%	0.4%	1.0%	1.2%	2.5%	0.4%	0.3%	-0.2%	0.3%	-1.0%	-3.1%	-1.4%	0.50%	-0.1%	0.3%	-1.6%	0.04%		0.04%
Mar-15	0.19%	1.0%	0.5%	1.1%	0.8%	0.8%	0.4%	0.2%	0.4%	0.6%	-0.1%	0.0%	0.0%	0.32%	0.2%	0.3%	0.1%	-0.53%		0.35%
Jun-15	0.27%	0.8%	0.5%	1.7%	0.9%	0.8%	0.3%	0.1%	0.2%	0.7%	0.4%	0.3%	0.0%	0.66%	0.3%	0.6%	-0.8%	-0.30%		0.43%
Sep-15	0.13%	0.4%	0.6%	1.1%	1.0%	0.8%	0.4%	0.1%	0.4%	0.9%	-0.1%	-0.9%	0.2%	0.71%	0.3%	0.7%	-1.6%	0.08%		0.28%

ACTUAL ROA AFTER BANK FAILURES

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB		Average for Tier III
Dec-15	-2.60%	0.6%	0.2%	0.8%	0.7%	1.2%	-0.1%	-0.2%	-1.0%	0.0%	0.1%	-3.9%	-1.9%	0.67%	-0.3%	0.0%	-1.5%	1.53%		-0.32%
Mar-16	-0.18%	0.7%	0.7%	1.2%	0.8%	0.9%	0.3%	0.0%	0.7%	0.4%	-0.2%	-1.3%	0.3%	0.22%	0.3%	0.4%	0.3%	-0.29%		0.30%
Jun-16	0.24%	0.4%	0.7%	0.7%	1.0%	1.1%	0.3%	-0.2%	0.2%	-0.4%	-0.2%	-1.5%	0.4%	0.82%	0.0%	0.2%	0.9%	-0.25%		0.25%
Sep-16	-0.13%	0.4%	0.6%	0.7%	1.0%	1.1%	0.3%	0.0%	0.0%	1.0%	-0.9%	-2.3%	0.3%	0.35%	0.0%	0.2%	-0.1%	-0.06%		0.13%
Dec-16	0.04%	-1.2%	0.2%	0.5%	0.8%	0.5%	-0.3%	-2.9%	-1.2%	0.9%	-0.6%	-1.5%	0.3%	0.16%	0.0%	0.3%	-0.1%	-1.30%		-0.30%
Mar-17	-0.02%	-0.4%	0.3%	0.7%	1.0%	0.7%	0.1%	-0.6%	0.4%	0.6%	-0.1%	-1.1%	0.3%	0.03%	0.3%	0.4%	0.1%	0.59%		0.18%
Jun-17	0.01%	-0.5%	0.4%	0.4%	0.9%	0.5%	-0.1%	-0.7%	0.1%	0.4%	-0.9%	-1.2%	0.5%	0.15%	0.4%	0.1%	0.0%	-0.40%		0.00%
Sep-17	-0.10%	-1.2%	0.3%	0.7%	0.9%	0.6%	0.4%	-1.0%	0.3%	0.4%	-1.0%	-2.6%	0.3%	0.14%	0.4%	0.3%	0.1%	-1.34%		-0.13%
Dec-17	0.18%	-1.2%	-0.2%	-0.8%	0.7%	0.6%	-0.1%	-3.1%	0.5%	0.2%	-1.1%	-8.7%	0.1%	0.19%	0.1%	0.2%	0.0%	0.33%		-0.68%
Mar-18	0.01%	-0.5%	0.5%	0.5%	0.7%	0.4%	0.2%	-0.4%	0.2%	0.4%	-1.1%	-2.2%	0.4%	0.08%	0.2%	0.2%	0.1%	-1.25%		-0.08%
Jun-18	0.07%	-0.3%	0.4%	0.5%	0.7%	0.4%	0.4%	-0.1%	-0.1%	0.3%	-0.6%	-3.0%	0.6%	0.02%	0.1%	0.2%	0.2%	-0.03%		-0.01%

EXPECTED ROA POST BANK FAILURES

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB		Average for Tier III
Dec-15	0.22%	0.73%	0.62%	1.16%	0.98%	0.77%	0.54%	0.10%	0.46%	0.99%	-0.26%	0.15%	0.13%	0.76%	0.47%	0.63%	-2.36%	0.69%		0.2%
Mar-16	0.17%	0.85%	0.71%	1.03%	0.99%	1.09%	0.42%	0.23%	0.31%	0.71%	-0.33%	-0.43%	-0.08%	0.56%	0.30%	0.45%	-2.13%	0.10%		0.5%
Jun-16	0.19%	0.81%	0.68%	1.08%	0.98%	0.97%	0.46%	0.18%	0.36%	0.81%	-0.30%	-0.22%	0.00%	0.63%	0.36%	0.52%	-2.21%	0.32%		0.4%
Sep-16	0.21%	0.75%	0.64%	1.14%	0.98%	0.83%	0.52%	0.12%	0.44%	0.94%	-0.27%	0.05%	0.09%	0.73%	0.44%	0.60%	-2.32%	0.59%		0.3%

44

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB		Average for Tier III
Dec-16	0.28%	0.60%	0.53%	1.30%	0.97%	0.44%	0.66%	-0.02%	0.63%	1.27%	-0.19%	0.74%	0.33%	0.97%	0.65%	0.81%	-2.60%	1.30%		0.0%
Mar-17	0.23%	0.72%	0.62%	1.17%	0.98%	0.76%	0.54%	0.10%	0.47%	1.00%	-0.26%	0.17%	0.13%	0.77%	0.48%	0.64%	-2.37%	0.72%		0.2%
Jun-17	0.27%	0.60%	0.53%	1.29%	0.97%	0.45%	0.66%	-0.02%	0.62%	1.26%	-0.19%	0.72%	0.33%	0.97%	0.64%	0.81%	-2.59%	1.29%		0.0%
Sep-17	0.32%	0.48%	0.44%	1.42%	0.96%	0.15%	0.77%	-0.14%	0.77%	1.52%	-0.12%	1.27%	0.52%	1.16%	0.81%	0.98%	-2.81%	1.85%		-0.2%
Dec-17	0.34%	0.42%	0.40%	1.47%	0.95%	0.01%	0.82%	-0.19%	0.84%	1.64%	-0.09%	1.53%	0.61%	1.25%	0.89%	1.06%	-2.91%	2.12%		-0.3%
Mar-18	0.30%	0.53%	0.48%	1.36%	0.96%	0.28%	0.72%	-0.09%	0.71%	1.41%	-0.15%	1.03%	0.43%	1.08%	0.74%	0.90%	-2.71%	1.60%		-0.1%
Jun-18	0.32%	0.47%	0.44%	1.42%	0.96%	0.14%	0.78%	-0.14%	0.78%	1.53%	-0.12%	1.29%	0.52%	1.17%	0.81%	0.98%	-2.82%	1.87%		-0.2%

Data for Liquidity

LIQUIDITY RATIO BEFORE BANK FAILURES																			Average for Tier III
	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB	
Dec-13	33.2%	30.5%	50.0%	34.1%	27.30%	82.2%	39.7%	43.9%	27.2%	33.5%	27.9%	34.9%	37.0%	49.8%	42.3%	63.4%	87.2%	23.1%	42.62%
Mar-14	28.7%	33.3%	67.0%	34.2%	26.80%	85.9%	35.7%	32.0%	33.7%	39.2%	27.8%	30.6%	41.3%	43.7%	44.9%	63.9%	94.4%	30.8%	44.11%
Jun-14	36.2%	27.4%	63.1%	30.2%	31.00%	84.8%	31.3%	47.2%	24.1%	40.2%	32.4%	28.7%	34.8%	43.8%	46.5%	63.4%	94.9%	29.4%	43.86%
Sep-14	28.3%	28.8%	53.8%	27.3%	30.80%	84.8%	31.3%	39.6%	20.8%	33.7%	31.1%	32.7%	32.1%	40.8%	45.4%	59.7%	98.4%	41.1%	42.25%
Dec-14	26.4%	34.0%	51.2%	30.4%	31.90%	83.5%	31.9%	39.1%	25.2%	34.3%	34.0%	27.7%	31.6%	38.6%	42.3%	57.3%	98.2%	39.8%	42.08%
Mar-15	29.6%	36.9%	55.2%	37.6%	33.00%	79.8%	38.2%	45.7%	26.1%	36.3%	34.6%	32.8%	26.7%	40.7%	49.4%	57.1%	74.4%	38.9%	42.94%
Jun-15	31.4%	33.2%	53.2%	41.7%	27.50%	73.5%	39.7%	21.7%	27.3%	37.0%	34.3%	39.0%	29.6%	35.0%	45.9%	56.4%	74.0%	36.7%	40.95%
Sep-15	26.8%	24.8%	47.4%	39.8%	31.00%	73.0%	41.5%	21.3%	23.5%	34.8%	33.9%	39.9%	28.5%	32.1%	45.2%	50.0%	62.7%	28.9%	38.06%

ACTUAL LIQUIDITY RATIO AFTER BANK FAILURES																			
Dec-15	23%	27%	35%	37%	34%	70%	38%	20%	16%	30%	39%	40%	19%	25%	44%	44%	68%	44%	36%
Mar-16	26%	29%	43%	36%	32%	75%	37%	27%	20%	32%	36%	37%	25%	32%	45%	50%	75%	40%	39%
Jun-16	23%	27%	35%	37%	34%	70%	38%	21%	16%	30%	39%	40%	20%	26%	44%	45%	68%	44%	36%
Sep-16	26%	29%	43%	36%	32%	75%	37%	27%	20%	33%	36%	37%	25%	32%	45%	50%	75%	40%	39%
Dec-16	25%	28%	41%	36%	33%	73%	37%	25%	19%	32%	37%	38%	23%	30%	44%	49%	73%	41%	38%
Mar-17	25%	28%	40%	36%	33%	73%	37%	25%	19%	32%	37%	38%	23%	30%	44%	48%	73%	41%	38%
Jun-17	27%	29%	47%	35%	32%	77%	37%	30%	22%	34%	35%	36%	27%	34%	45%	53%	78%	38%	40%
Sep-17	25%	28%	41%	36%	33%	74%	37%	25%	19%	32%	37%	38%	24%	30%	45%	49%	74%	41%	38%
Dec-17	25%	28%	40%	36%	33%	73%	37%	24%	18%	31%	37%	39%	23%	29%	44%	48%	72%	42%	38%
Mar-18	25%	28%	40%	36%	33%	73%	37%	24%	18%	31%	37%	39%	23%	29%	44%	48%	72%	42%	38%
Jun-18	29%	31%	53%	35%	30%	80%	36%	35%	25%	35%	33%	34%	31%	39%	45%	57%	84%	35%	41%

EXPECTED LIQUIDITY RATIO POST BANK FAILURE

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB	Average for Tier III
Dec-15	38.3%	26.3%	48.8%	34.5%	26.99%	70.8%	36.5%	20.2%	19.8%	36.8%	27.3%	27.3%	15.9%	33.6%	39.8%	42.6%	52.3%	32.5%	35.0%
Mar-16	40.9%	27.6%	54.7%	32.7%	31.93%	76.0%	34.5%	18.0%	21.5%	35.9%	29.5%	28.1%	29.2%	34.6%	39.2%	40.2%	44.3%	24.4%	35.7%
Jun-16	39.7%	24.7%	54.0%	28.3%	37.85%	76.6%	21.8%	11.4%	21.4%	37.6%	24.6%	17.9%	25.0%	29.0%	37.1%	41.1%	69.6%	24.2%	34.6%
Sep-16	39.5%	29.2%	59.8%	35.9%	35.81%	78.7%	16.7%	15.4%	21.9%	36.9%	20.6%	20.7%	31.9%	28.9%	38.6%	41.6%	58.5%	27.3%	35.4%
Dec-16	38.6%	22.3%	58.1%	37.4%	31.34%	76.7%	1.1%	12.3%	23.3%	38.9%	26.0%	20.5%	32.4%	37.2%	37.7%	42.3%	36.8%	30.8%	33.5%
Mar-17	44.9%	19.1%	62.1%	35.2%	31.58%	74.5%	6.5%	6.0%	24.8%	38.9%	25.2%	21.3%	30.2%	38.3%	35.8%	43.4%	48.9%	28.5%	34.2%
Jun-17	30.1%	16.2%	56.1%	39.3%	35.42%	73.9%	10.1%	-4.3%	33.3%	39.3%	30.1%	20.8%	29.9%	30.1%	35.5%	42.1%	59.4%	27.0%	33.6%
Sep-17	28.8%	10.8%	58.0%	35.7%	24.91%	75.0%	-3.5%	-8.5%	33.4%	42.8%	30.4%	12.8%	28.2%	32.1%	29.8%	41.0%	62.0%	26.8%	31.1%
Dec-17	33.9%	19.2%	54.0%	32.9%	28.36%	75.9%	-3.9%	-9.6%	37.8%	41.3%	23.0%	13.6%	27.6%	32.6%	31.7%	40.2%	53.1%	47.8%	32.2%
Mar-18	34.5%	31.3%	54.4%	28.5%	28.77%	75.7%	-7.3%	-10.7%	37.4%	41.6%	21.6%	11.1%	25.9%	31.1%	35.3%	44.0%	54.7%	50.7%	32.7%
Jun-18	41.0%	25.1%	55.0%	32.8%	37.98%	74.1%	-6.9%	-12.4%	44.1%	44.7%	27.8%	7.2%	21.0%	33.6%	35.6%	45.5%	174.5%	54.9%	40.9%

Data for Asset Quality

ASSET QUALITY BEFORE BANK FAILURE

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB	Average for Tier III
Dec-13	4.0%	9.3%	4.3%	6.3%	0.00%	4.0%	13.9%	7.0%	7.3%	8.1%	14.0%	14.4%	7.4%	11.9%	10.9%	23.4%	3.2%	17.6%	9.3%
Mar-14	3.5%	7.4%	5.5%	6.3%	0.00%	3.4%	16.0%	8.6%	11.4%	6.9%	15.5%	11.1%	7.9%	15.0%	9.5%	24.0%	2.2%	16.4%	9.5%
Jun-14	3.6%	7.9%	5.4%	6.5%	0.00%	3.3%	13.6%	10.6%	10.1%	7.6%	20.9%	12.1%	7.3%	10.4%	10.6%	21.6%	25.2%	19.6%	10.9%
Sep-14	3.5%	7.7%	4.6%	6.8%	0.00%	3.0%	13.6%	12.4%	16.3%	6.0%	23.4%	12.1%	7.4%	8.6%	9.5%	20.7%	9.9%	29.9%	10.9%
Dec-14	6.0%	6.9%	3.7%	7.3%	0.00%	2.4%	14.4%	9.2%	15.0%	7.8%	26.0%	26.5%	9.0%	8.0%	10.9%	19.7%	6.6%	29.8%	11.6%
Mar-15	6.0%	10.6%	5.0%	9.9%	0.00%	2.0%	14.8%	8.6%	15.1%	7.9%	28.1%	34.0%	11.0%	8.5%	10.1%	15.2%	3.0%	29.9%	12.2%
Jun-15	6.9%	11.8%	5.2%	6.3%	0.00%	1.9%	14.3%	6.6%	16.7%	7.9%	29.8%	35.8%	10.4%	9.9%	10.7%	12.0%	2.7%	29.3%	12.1%
Sep-15	7.0%	12.1%	4.9%	5.9%	0.00%	2.1%	14.5%	5.5%	19.1%	7.9%	29.2%	36.1%	8.1%	8.7%	13.6%	11.0%	2.3%	27.0%	11.9%

ACTUAL ASSET QUALITY AFTER BANK FAILURES

	ABC	SIDIAN	GTB	GAB	VIC	HABIB	DEV	JAMII	FCB	GRD	CONSO	SPIRE	CREDIT	ACCESS	MOCB	PARA	UBA	MEB	Average for Tier III
Dec-15	21.6%	12.0%	4.4%	8.8%	0.00%	2.2%	21.1%	7.2%	23.9%	10.1%	19.3%	33.7%	6.5%	10.0%	15.4%	12.6%	2.1%	27.1%	13.2%
Mar-16	22.0%	13.1%	4.2%	9.1%	0.00%	2.3%	20.8%	7.6%	22.3%	10.1%	19.3%	30.9%	5.8%	12.2%	14.3%	15.4%	2.0%	27.8%	13.3%
Jun-16	24.6%	15.7%	4.2%	7.1%	0.00%	2.3%	21.0%	9.0%	21.0%	8.9%	17.3%	29.7%	5.6%	13.1%	11.8%	15.9%	2.1%	28.4%	13.2%
Sep-16	26.3%	15.7%	7.2%	8.7%	0.00%	3.0%	20.9%	14.6%	23.9%	9.6%	18.2%	29.7%	7.8%	11.7%	12.6%	15.5%	2.0%	27.5%	14.2%
Dec-16	26.7%	16.5%	6.9%	9.7%	0.00%	2.9%	26.5%	20.4%	32.0%	8.2%	20.1%	16.0%	7.8%	12.1%	12.3%	12.5%	2.2%	29.0%	14.5%
Mar-17	21.9%	16.5%	7.4%	8.1%	0.00%	3.9%	27.1%	19.0%	33.0%	7.7%	21.1%	17.3%	7.5%	11.5%	11.5%	14.8%	2.4%	29.4%	14.4%
Jun-17	22.3%	19.1%	5.4%	8.7%	0.11%	9.9%	26.8%	19.5%	29.3%	7.9%	22.3%	19.2%	8.4%	11.8%	11.3%	13.5%	2.4%	30.7%	14.9%

Sep-17	26.2%	16.2%	7.2%	8.1%	0.09%	10.1%	23.4%	20.4%	32.9%	7.8%	24.1%	23.5%	8.2%	14.8%	10.3%	14.8%	2.4%	37.7%		16.0%
Dec-17	30.1%	19.4%	9.5%	9.7%	0.09%	10.4%	22.4%	20.8%	39.7%	10.5%	25.7%	34.9%	8.4%	20.7%	10.7%	14.6%	4.5%	43.7%		18.7%
Mar-18	29.5%	16.4%	9.9%	12.5%	0.09%	9.8%	22.1%	22.0%	40.8%	10.3%	27.8%	37.3%	7.7%	20.1%	10.1%	15.7%	3.5%	47.2%		19.0%
Jun-18	32.3%	17.3%	10.4%	11.0%	0.00%	9.3%	21.8%	21.1%	44.3%	9.3%	29.4%	41.0%	10.4%	20.8%	10.0%	16.3%	7.5%	42.3%		19.7%

EXPECTED ASSET QUALITY POST BANK FAILURES																			
Dec-15	6.01%	10.25%	4.94%	7.54%	0.00%	2.15%	14.44%	8.38%	16.42%	7.59%	28.20%	30.67%	9.71%	8.94%	10.75%	14.88%	5.59%	29.16%	11.98%
Mar-16	5.92%	10.15%	4.92%	7.48%	0.00%	2.21%	14.44%	8.39%	16.18%	7.59%	27.74%	29.92%	9.60%	9.05%	10.75%	15.22%	5.71%	28.76%	11.89%
Jun-16	5.68%	9.89%	4.89%	7.32%	0.00%	2.36%	14.43%	8.45%	15.54%	7.56%	26.52%	27.93%	9.31%	9.35%	10.74%	16.12%	6.04%	27.70%	11.66%
Sep-16	8.15%	12.55%	5.23%	8.91%	0.00%	0.75%	14.55%	7.91%	22.05%	7.80%	38.96%	48.29%	12.25%	6.31%	10.80%	6.90%	2.72%	38.52%	14.04%
Dec-16	6.41%	10.67%	4.99%	7.79%	0.00%	1.89%	14.46%	8.29%	17.45%	7.63%	30.16%	33.89%	10.17%	8.46%	10.76%	13.42%	5.07%	30.87%	12.35%
Mar-17	8.27%	12.68%	5.25%	8.98%	0.00%	0.67%	14.55%	7.89%	22.36%	7.81%	39.56%	49.28%	12.39%	6.16%	10.81%	6.45%	2.56%	39.05%	14.15%
Jun-17	8.71%	13.15%	5.31%	9.27%	0.00%	0.39%	14.58%	7.79%	23.52%	7.85%	41.77%	52.89%	12.91%	5.62%	10.82%	4.81%	1.98%	40.97%	14.57%
Sep-17	9.77%	14.28%	5.46%	9.94%	0.00%	-0.30%	14.63%	7.57%	26.29%	7.95%	47.05%	61.54%	14.15%	4.33%	10.84%	0.89%	0.57%	45.57%	15.58%
Dec-17	10.28%	14.84%	5.53%	10.27%	0.00%	-0.64%	14.65%	7.45%	27.64%	8.00%	49.65%	65.78%	14.77%	3.69%	10.85%	-1.03%	-0.12%	47.82%	16.08%
Mar-18	11.02%	15.63%	5.63%	10.74%	0.00%	-1.12%	14.69%	7.30%	29.58%	8.07%	53.36%	71.86%	15.64%	2.79%	10.87%	-3.78%	-1.11%	51.05%	16.79%
Jun-18	11.01%	15.63%	5.63%	10.74%	0.00%	-1.11%	14.69%	7.30%	29.57%	8.07%	53.33%	71.82%	15.64%	2.79%	10.87%	-3.77%	-1.10%	51.03%	16.79%

Data for Capital Adequacy

CAPITAL ADEQUACY BEFORE BANK FAILURES																			
	ABC	**SIDIAN**	**GTB**	**GAB**	**VIC**	**HABIB**	**DEV**	**JAMII**	**FCB**	**GRD**	**CONSO**	**SPIRE**	**CREDI**	**ACCESS**	**MOCB**	**PARA**	**UBA**	**MEB**	**Average for Tier III**
Dec-13	12.7%	21.5%	32.5%	21.5%	20.31%	56.9%	23.6%	29.1%	13.5%	18.0%	10.8%	13.3%	25.5%	31.4%	30.4%	41.4%	72.7%	36.3%	28.4%
Mar-14	13.1%	19.8%	29.1%	16.6%	19.05%	34.9%	20.8%	22.5%	10.0%	15.5%	8.6%	12.4%	20.5%	24.0%	26.0%	30.0%	30.0%	30.0%	21.3%
Jun-14	14.8%	18.1%	27.3%	16.1%	19.16%	37.8%	24.5%	23.8%	9.1%	15.2%	8.7%	12.8%	20.1%	23.6%	25.8%	30.1%	25.5%	29.7%	21.2%
Sep-14	14.2%	18.3%	24.1%	15.7%	18.63%	35.4%	24.8%	22.5%	8.4%	15.1%	7.8%	13.2%	19.6%	21.3%	24.2%	26.5%	40.8%	32.0%	21.3%
Dec-14	15.9%	20.6%	25.9%	13.5%	19.17%	37.2%	29.6%	26.9%	11.4%	16.6%	11.0%	10.7%	17.0%	21.7%	25.6%	25.5%	58.6%	33.7%	23.4%
Mar-15	15.6%	19.6%	29.3%	17.0%	18.36%	30.6%	29.0%	22.3%	11.6%	16.5%	11.7%	15.1%	17.2%	22.0%	24.3%	25.5%	45.7%	31.7%	22.4%
Jun-15	18.1%	19.3%	28.7%	14.6%	16.99%	30.4%	28.5%	17.6%	15.2%	15.7%	8.9%	16.6%	18.0%	20.7%	23.5%	27.7%	34.9%	30.5%	21.4%
Sep-15	18.7%	18.7%	27.0%	15.1%	17.00%	24.8%	28.8%	15.3%	15.2%	16.1%	8.7%	15.4%	15.1%	20.4%	22.5%	24.7%	25.5%	29.8%	19.9%

ACTUAL CAPITAL ADEQUACY AFTER BANK FAILURES																			
Dec-15	16.4%	24.7%	27.7%	15.8%	19.30%	26.9%	27.3%	16.3%	15.2%	17.6%	9.4%	17.5%	14.9%	21.5%	34.2%	24.1%	23.8%	33.1%	21.4%
Mar-16	16.6%	25.3%	27.5%	18.7%	18.66%	27.9%	25.5%	16.0%	15.7%	17.4%	8.8%	15.0%	14.9%	21.4%	31.8%	24.4%	23.5%	31.4%	21.1%

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
Jun-16	16.9%	25.0%	28.2%	18.6%	19.67%	28.8%	25.5%	15.7%	15.8%	17.4%	8.6%	18.7%	20.0%	21.0%	40.4%	24.4%	43.3%	32.0%		23.3%
Sep-16	17.2%	23.7%	27.6%	19.5%	19.18%	28.3%	25.3%	15.8%	15.5%	17.7%	7.8%	17.4%	20.1%	20.0%	38.9%	26.5%	37.1%	31.8%		22.7%
Dec-16	17.1%	23.2%	27.1%	18.7%	25.45%	32.3%	25.1%	19.4%	14.0%	19.6%	7.9%	16.3%	22.8%	21.5%	38.7%	27.4%	38.7%	31.6%		23.7%
Mar-17	15.6%	23.4%	25.2%	18.1%	25.54%	25.8%	25.8%	17.4%	14.8%	19.0%	8.1%	15.9%	17.9%	23.2%	38.0%	26.3%	44.2%	31.9%		23.1%
Jun-17	16.1%	22.7%	24.6%	17.8%	25.65%	24.6%	23.5%	15.3%	14.5%	19.1%	6.9%	15.2%	15.3%	22.3%	35.6%	27.2%	32.0%	31.5%		21.7%
Sep-17	17.1%	21.0%	25.9%	16.7%	23.09%	24.5%	22.8%	16.0%	15.1%	19.5%	5.8%	12.7%	14.8%	21.2%	35.5%	27.6%	33.5%	30.7%		21.3%
Dec-17	15.8%	16.5%	26.9%	16.2%	22.74%	27.1%	23.6%	19.3%	15.3%	20.2%	5.1%	12.7%	15.9%	30.2%	33.9%	27.4%	38.8%	42.6%		22.8%
Mar-18	17.4%	16.1%	26.9%	16.0%	21.12%	27.3%	23.6%	19.5%	16.2%	20.2%	3.9%	-5.7%	15.1%	21.1%	30.3%	28.5%	40.2%	42.3%		21.1%
Jun-18	15.4%	14.3%	24.6%	15.3%	20.16%	24.7%	23.9%	19.6%	16.4%	20.7%	5.2%	-8.8%	15.1%	20.9%	30.5%	30.3%	39.0%	42.4%		20.5%
EXPECTED CAPITAL ADEQUACY AFTER BANK FAILURES																				
Dec-15	15.71%	19.30%	27.58%	15.82%	18.40%	34.15%	26.51%	21.78%	11.79%	15.92%	9.38%	13.80%	18.55%	22.39%	24.82%	27.87%	39.21%	31.36%		21.91%
Mar-16	14.62%	19.91%	29.03%	17.40%	19.05%	40.53%	25.47%	24.25%	11.82%	16.42%	9.88%	13.49%	20.59%	24.91%	26.47%	31.55%	47.87%	32.58%		23.66%
Jun-16	13.42%	20.57%	30.64%	19.14%	19.76%	47.56%	24.32%	26.97%	11.85%	16.98%	10.44%	13.15%	22.83%	27.69%	28.29%	35.61%	57.42%	33.93%		25.59%
Sep-16	13.53%	20.51%	30.50%	18.98%	19.70%	46.92%	24.43%	26.72%	11.84%	16.92%	10.39%	13.18%	22.63%	27.44%	28.13%	35.24%	56.55%	33.81%		25.41%
Dec-16	12.84%	20.90%	31.42%	19.98%	20.11%	50.96%	23.77%	28.28%	11.86%	17.24%	10.70%	12.99%	23.92%	29.04%	29.18%	37.57%	62.05%	34.58%		26.52%
Mar-17	14.04%	20.23%	29.81%	18.24%	19.39%	43.93%	24.92%	25.56%	11.83%	16.69%	10.15%	13.33%	21.67%	26.26%	27.35%	33.51%	52.49%	33.24%		24.59%
Jun-17	17.17%	18.49%	25.61%	13.70%	17.53%	25.57%	27.91%	18.46%	11.76%	15.24%	8.70%	14.21%	15.81%	19.00%	22.60%	22.91%	27.54%	29.72%		19.55%
Sep-17	15.01%	19.69%	28.50%	16.82%	18.81%	38.21%	25.85%	23.35%	11.81%	16.24%	9.70%	13.60%	19.85%	24.00%	25.87%	30.21%	44.72%	32.14%		23.02%
Dec-17	16.65%	18.78%	26.31%	14.46%	17.84%	28.64%	27.41%	19.64%	11.77%	15.48%	8.95%	14.06%	16.79%	20.21%	23.39%	24.68%	31.70%	30.31%		20.39%
Mar-18	16.14%	19.06%	26.99%	15.19%	18.14%	31.61%	26.92%	20.79%	11.78%	15.72%	9.18%	13.92%	17.74%	21.39%	24.16%	26.40%	35.74%	30.88%		21.21%
Jun-18	16.52%	18.85%	26.48%	14.64%	17.91%	29.37%	27.29%	19.93%	11.77%	15.54%	9.00%	14.03%	17.02%	20.50%	23.58%	25.11%	32.71%	30.45%		20.60%