EFFECT OF BANK FAILURES IN KENYA ON STOCK RETURNS OF COMMERCIAL BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

I declare that this project is my original work and no part of this paper has been written or published anywhere or presented for a degree in any university

IRENE NABWIRE MALOBA   SIGN**...................................**

This project has been submitted for examination with my approval as the university supervisor

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ACKNOWLEDGEMENT

DEDICATION

I dedicate this project to my late parents who taught me the importance of hard work and

perseverance. The fruit is as a result of good values they instilled in me.

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LIST OF ABBREVIATIONS AND ACRONYMS

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

CEPS   Centre for European Policy Studies

EMH   Efficient Market Hypothesis

IMF   International Monetary Fund

NSE   Nairobi Securities Exchange

ABSTRACT

The study was as a result of the banking crisis experienced in Kenya. The main objective was to identify the effect of commercial bank failures on the stock returns of commercial banks listed at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the ten commercial banks listed at the NSE. The study was an event analysis of the failure of Chase Bank that was announced by the Central Bank of Kenya on 7th April 2016. The study analyzed the reaction of stock returns of ten listed commercial banks ten days before failure of Chase bank and ten days after the failure. Data analysis was done with the aid of Microsoft's Excel (2013). T-test was conducted to establish the significance of the bank failure effect on stock returns. The conclusion derived from the study was that bank failure has a negative effect on stock returns of commercial banks listed at the NSE. The study also concludes that the stocks of listed commercial banks are highly sensitive to bank failures and react immediately to any bank failure announced by the Central Bank of Kenya. This implies bank failure information announced by CBK is very useful when valuing the securities. Besides that, no investors made any abnormal profits following bank failures. The study further concludes that no commercial banks stocks react swiftly to any bank failure information. The study therefore recommends that Central Bank of Kenya should come up with stringent rules and regulations of the banking sector to prevent pains and mass withdrawals that lead to bank failures which in turn results to loss for stock investors.

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CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Financial distress has been experienced by a number of countries in recent decades. According to IMF (1998), several countries in both industrialized, emerging and transition economies experienced banking crisis that needed a major revamp of their banking systems. For instance, Citibank bank group wrote off losses of over $39 billion (Elliot, 2008). The crises of 1986 - 1989, 1993/1994 and 1998 culminated in major bank failures in Kenya, that is 37 banks failed as at 1998 (Ngugi,2001; Kithinji and Waweru,2007). Several studies have identified the characteristics that cause banks to fail. Three banks in Kenya have been placed under statutory management since August 2015 with the latest being chase bank affected by bank run.

In most cases, banking crisis emanates from the credit creation service which is the basic function of banking. This results in liquidity crisis and eventuality reduction in the value of the assets, CEPS No. 178, Nov 2008. If a collective movement of distrust grips the depositors, who may decide at the same time to withdraw their deposits, banks will be unable to satisfy these huge withdrawals due to the illiquid nature of their assets. A liquidity crisis will then erupt which can as well affect sound banks. This may afterwords erode the equity base of the banks as well as decline in the stock returns in case of listed banks.

1.1.1 The Bank Failures

The basic function of banks is to provide credit creation service that enables the economy to operate and grow. However, this function is dependent on the fragility of the banking system. If a collective movement of distrust grips the depositors, who may decide at the same time to withdraw

their deposits, banks will be unable to satisfy these huge withdrawals due to the illiquid nature of their assets. This results in a liquidity crisis. Normally, these crises do not occur since people are confident about the banking system. However, the confidence erodes quickly when a bank or more banks face a solvency problem. The solvency problems may be as a result of nonperforming loans or other factors which results in the possibility of bank runs. Sound banks can also be brought down by a liquidity crisis that erupts. The sound banks become innocent bystanders hit in just like insolvent banks due to collective movement of distrust. These in turn creates a devilish interaction between liquidity and solvency crisis which is set in motion. As a result, banks that are sound have to sell their assets to confront the huge deposit withdrawals. These fire sales of assets lead to decline in asset prices which reduces the value of banks' assets. The equity base of the banks will in turn erode and results in an insolvency situation. The cycle may start and continue creating solvency problems which ignites a new liquidity crisis in the banks which forms a continuous cycle and so on (CEPS, 2008).

Quite a number of studies have identified the factors that lead to bank failures. Besides excessive risk-taking encompassed by insider lending, poor management has emerged as a key factor contributing to failures within the banks. However, the factors that determine a bank failure have not received much attention. One hypothesis, according to Hannan and Rhodes (1987), place banks that are poorly-managed as likely targets for acquisition. This is because bankers who believe can improve quality of management for the target as well as their profitability become interested.

The regulator evaluates banks on five criteria which include: capital adequacy, asset quality, management, earnings and liquidity (CAMEL). Banks with low earnings, risky asset portfolios and low liquidity are likely to fail more than other banks.

The question of bank failures has received much attention since it has been observed and its effect felt globally. The economic researchers who dealt with the 1930's US banking crisis addressed this question using two approaches and each centres upon a particular problem analyzed. Meyer and Pifer (1970) came up with a model which analyses failure of a bank by comparing each failed bank with a solvent bank under similar national and local economic conditions and identified financial variables, which are can be potential cause of insolvency. Hwang, Lee and Lian (1997) determined the most stable factors that influence the probability of bank failure and those factors which can be changed over time.

Many parts of the world including Kenya insist on the management of a bank's capital adequacy position being instrumental in sustaining its liquidity and by extension a key ingredient in maintaining its solvency. Without sufficient capital a bank can find itself unable to grow its deposit base and its loans portfolio. In addition to capital adequacy, a tight regulation, such as that of raising the minimum liquidity ratio, may lead banks to reduce their credit offer and, as a result, give rise to a fall in productive investments.

There has been significant changes to financial markets on a global scale in the las few decades. Structural changes involving traditional operators in the fields of banking, asset management or insurance business led to modifications of regulatory and supervisory setting of the financial systems. Moreover the serious financial crises especially at the end of the 1990's showed, the global financial architecture is still fragile and comparably easy to attack. Effective regulation is therefore meant to reduce failure and loss to depositors (Nicholl Peter, 1996).

It is important to note however, that in spite of the efforts by the government to streamline the banking sector through introduction of statutory regulatory measures containing more banks in 1983, many banks were liquidated or put under receivership within the period that followed introduction of the mentioned control mechanisms. More banks collapsed during this period as a result of poor governance, weak internal controls and management malpractices.

Take an example of Continental Credit Finance Limited and the Continental Bank of Kenya Limited that collapsed in 1986, followed by Capital Finance Limited in 1987, and a number of banks which had collapsed merged to form Consolidated Bank of Kenya limited in 1989. Besides this 13 banks collapsed in 1993 and 5 banks collapsed between 1996 and 1999. Trust Bank, being the 6th largest bank in Kenya – measured by deposits – also collapsed in 1999 as a result of insider lending to shareholders and directors. The most recent bank failure took place in October 2015 when Imperial bank was put under receivership, followed by Imperial Bank and Chase bank in April 216.

1.1.2 Stock Returns

Stock Investors expect share prices to react to any special event as a matter of course. However, they are mostly not certain about the magnitude and timing of those reactions. Sometimes they are also not sure of the direction it might take. These unexpected events can change can change the stock returns of a firm by changing the profit potential or riskiness of that firm. If the financial markets pick up the information about an impending event, that event can change stock returns days or weeks before it actually occurs and continue to influence stock returns for some time thereafter. This is according to Robert Schweitzer, (1989).

He further explains that equity markets digest all new public information about a firm quickly and transmit it swiftly into changes in stock returns. This underlies the methodology now being used frequently in financial analysis.

According to (Marcus, Bodie and Kane, 2009), the reaction to news is always spontaneous and the prices move drastically on the material day the information is made public. Thereafter, there is no major drift in stock prices once the information is made public.

The above hypothesis shades insight on the three versions of efficient market hypothesis; the weak form where stock returns reflect only public information, the semi-strong form which allows stock returns reflect both private and public information, and the strong form which encompasses private information , public information and insider information in the share price.

Other studies that have supported this hypothesis include; Aharony and Swary (1980) who focused on changes in dividend, Keown and Pinkerton (1981) studied reaction to announcements of mergers and Asquith and Mullins (1986) who dealt with the aftermaths of issuance of common stock,among many others.

Event studies examine the stock returns/ prices for an industry, in this case the banking sector before and after the announcement of a special event, for instance placement of a bank under statutory management.

1.1.3 Effect of commercial bank failures on Stock returns.

According to a study by Moses, Eisemann Metta, and Deschamps (1979) the probability that a bank would fail and it's leverage impact on unsystematic risks is reflected in stock returns. Investors react to the negative information by selling off their stocks in the banking industry. This is driven by the fact that the crisis may affect sound banks as well which lead to reduction in

earnings. Since most of the investors was selling, the supply override the demand hence decline in the stock returns. The credit Crisis resulted in 30% drop in stock returns in the US, (CEPS 2008). The announcement of regulation of insurance companies in California resulted to decline in share prices. This is according to a study carried out by Fields, Gosh and Kidwell (1990). Therefore the instability observed in the banking sector always have a negative impact on the industry stock returns.

1.1.4 Commercial Banks in Kenya

The research cover commercial banks in Kenya because of the recent experienced failures in the banking industry. In addition, with increased financial deepening, the Banking sector has experienced a tremendous growth with banks engaging in both domestic and regional expansion.(FSD,2009) as well as introduction of new banks. As a result, the high competition has culminated improper reporting which has seen banks reinstating profits due to insider loans previously understated.

According to the central bank of Kenya report, the banking sector comprises of 42 commercial banks, The report further indicates that the banking sector recorded performance as indicated by growth in bank customer's deposits and bank loans. The banking sector balance sheet grew by 15% with loans advances and government securities accounting for 56.5% of the asset side. Customer's deposits were the main components of the liabilities side

1.2 Research Problem

When a firm faces some bad news that substantially alters the prospects for its earnings or its riskiness, investors typically react quickly by bidding down the price of its stocks. But not all bad

news affect firms' stock returns to the same degree. Analysts have begun to use event studies to determine the extent of stock return's reaction to announcement of bad news, (Robert Schweitzer 1989). Many examples of bad news events can be found in the banking Literatures. Failures in the banking industry have been experienced not only in Kenya but worldwide with its impacts on the economy being adversely felt. However, little special attention has been paid on one particular impact. The focus therefore is on the reaction of stock returns of the listed banks to the failures experienced in the industry.

According to the financial sector development report (2009), the banking sector in Kenya has taken advantage of the deregulation policies of the central bank to expand hence enhancing financial deepening. The increase in financial services in Kenya with recent failures experienced has made the central bank to put in place regulatory measures with regard to corporate governance and capital adequacy to ensure a more resilient banking sector and to protect depositors and investors from losses that may arise incase their banks go under.

Looking at three different bank failures- Franklin National Bank of New York, Hamilton National bank of Tennessee in 1976 and U.S National Bank of San Diego in 1973 - Joseph Aharony and Itzhak Swary (1983) assessed the reaction of bank stock returns using a data sample of other banks' stock returns. The stock returns of these banks showed little response to the announcement of the three bank failures. Later, G. Rodney Thompson and Robert Lamy, (1986) researched on the announcement effects associated with the failure of Penn Square Bank of Oklahoma in 1982. They found out a significant negative abnormal return of about 1% on the event day for a sample of 54 major banks listed on New York stock exchange. In another case, Swary (1986) studied the market's reaction to the bad news announcement in 1984 that Continental Illinois National Bank was in financial distress. This event study, conducted on a portfolio of large banks, found

significant negative abnormal returns (approximately 3 %age points) following the news of continental's problems. These returns could be explained by investors' downward valuation of other bank's stock.

Most event studies have dwelled on the effect of stock splits, merger or takeover announcements and dividend announcements as events that affect stock returns. Bank failures have however been investigated in other bourses, which operate on a different economic environment to that of the Nairobi stock exchange. The study seek to answer the following question;What is the impact of bank failures to stock returns of the listed commercial banks in Kenya?

1.3 Research Objective

To investigate the impact of commercial bank failures on the stock returns of the listed banks.

1.4 Value of the Study

The findings of the study can help Investors/ stock market players to make informed investment decisions with regards to selecting their investment portfolios in stocks, entry and exit periods for the investments. The study enable them to analyze and predict stock price movements around announcement of major events like commercial banks being placed under receivership. The research also add, to the existing body of knowledge, arguments and findings which other academicians and business researchers borrow.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides an insight on the theories around investors' behavior and bank failures as well as related scholarly work done on the topic. The main focus of this chapter is to give the readers and users of the information with clear understanding of what has been and the theories supporting the study. The chapter starts with Theoretical review, Empirical studies and summary of the study.

2.2 Theoretical Review

2.2.1 Contagion Theory

The occurrence of financial crises has resulted in many researchers concluding that the financial sector is susceptible to shocks. This shocks first affects a particular region or sector or even one institution, then they spread and there after affect the economy at large (Allen, Babus & Carletti, 2009). Contagions take two different approaches: one, direct linkages and indirect balance-sheet linkages. Allen and Gale (2000) looked at the contagious effects via direct linkages and analysed how the banking system react to this contagion even though the banks are connected using different network structures. He found out that banks usually insure against liquidity shocks perfectly through interbank deposits. However, there are connections made form swapping deposits which expose the banking system to contagion (Allan and Thomas, 2009). Allen and Gale (2000) explains that cases with incomplete networks become more prone to contagion compared to complete structures. Well connected networks are more resilient because part of the losses made by one bank's portfolio is transferred to other banks through the interbank agreements. In other words,

they demonstrate by taking the case of an incomplete network where the bank failure might trigger the entire banking system to fail. Allen and Gale (2000) then prove that, if banks are connected through a complete structure with the same set of parameters, then the system becomes more resilient to the contagious effects.

2.2.2 Moral Hazard

A moral hazard refers to a situation where one party takes high risk knowing that the implication will be felt by the other party and not the one taking the risk. This case translates into a special case of information asymmetry (one party to a transaction an added advantage with more information than the other party). Sometimes Central banks, governments or other institutions encourage risky lending by bailing out institutions. This is because the bailed out banks believe that they do not have to bear the full burden of losses likely to be incurred. Lending institutions are needed to take risks by offering loans for them to be profitable, and in most cases loans that are risky usually have the potential for making very highest returns. (Krugman, 2009). The risky loans may pay handsomely if the investment turns succeeds, otherwise they might lead to bailouts using taxpayer's money if the investment turns out badly.

The situation can also arise in a principal agent problem, where the agent has more information about a particular action than the principal. If the interests of the two are not aligned, then the agent can act inappropriately.(Mcoy,2007).

2.2.3 Herding Models and Learning Models

Herding behavior is defined as the tendency by investors to move to the same side of the market. This behaviour is viewed as a significant threat to the efficiency and stability of the financial markets. The focus here is mostly on institutional investors like banks and other financial

institutions. It describes institutions or individuals to showing a tendency of similarity in their behavior hence acting like a herd. This herding behaviour might be unintentional or intentional. The unintentional herding is mainly driven by fundamental factors and arises due to institutions examining the same factors and receiving correlated private information. This leads the investors arriving at the same conclusions with regards to individual stocks (Kremer and Nautz, 2011). Intentional herding on the other hand is more driven by sentiments. It involves investors imitating other market participants which leads to simultaneous financial behaviour regardless of prior information or beliefs. This particular herding can result in asset prices not reflecting fundamental information, destabilization of markets and exacerbation of volatility. It can thereafter create or contribute, to bubbles and crashes on financial markets (Kremer and Nautz, 2011).

2.2.4 Significance of banks to the performance of stock market and economy at large

Commercial banks play a significant role in the global economy. They constitute a significant part of the equity market. The market capitalization of world financial sector is estimated at $6 trillion. This implies that banks constitute an enormous share of the world economy. The capitalization of the equity market, that is , outstanding loans and bonds in the world was nearly US$ 175 trillion in 2008 and by end of 2010 according to Roxburgh et al, 2011, it had increased to US$ 212 trillion. Commercial banking institutions play a major role in provision of funds for infrastructure, innovation, and creating job opportunities. Overall, the banks play an important role in the economy since they impact the spending behaviour of individual consumers, investments as well as the growth of companies. (Cogan, 2008). According to Diamond, 1984, Commercial banks also play a significant role in monitoring various investments on behalf of different investors. They are able to reduce liquidity risk and create investment opportunities thereafter, (Diamond and Dybvig, 1983).

According to Cole et al., 2008, the returns of stocks of commercial banks are indispensable to the future economic expansion and eventually, prosperity of the nations at large. Most researchers confirm that the growth in the financial sector contributes significantly to the economic expansion and thereafter reduction in poverty. This observation has been made especially in the third world economies, considering the financial sectors in those economies are not well developed. Economic development may be constrained without a good functioning financial sector, (Cogan, 2008).

Stock returns of commercial banks trading at the domestic market securities exchanges reflect the banking sector performance of that particular country (Fariborz and Qiongbing, 2009). Another thing to note is that the stock market indices in most countries tend to be highly correlated with the developments in the banking industry, (Demirguc-Kunt and Levine, 1996). Therefore, the performance of banking sector definitely affect the stocks of unrelated listed companies since it triggers investor confidence. According to Yartey and Adjasi (2007), a %age point increase in the development of banking sector improves development of stock market in Africa by 0.59 %age point. As a result, the macroeconomic stability and economic development is significantly impacted.

2.3 Stock price reaction

Stock price movement is affected by a number of factors. The main determinant being respond to new information which might be negative or positive. Some of the events include, merger and take over announcements, earnings and dividend announcements, and bank failures among others. This can be best explained through the common theory of efficient market hypothesis.

2.3.1 The Efficient Market Hypothesis

The theory states that it is difficult to outperform the market since efficiency in the equity market causes stock prices to reflect all important information i.e private and public. According to the efficient market hypothesis, shares trade at their fair value on securities exchanges, making it difficult for investors to purchase either undervalued stocks or to sell their stocks at inflated prices. Considering this, expert stock selection and market timing should not be a reason to outperform the overall market. Therefore an investor can only get higher returns by buying investments that are riskier and not taking advantage of new information. The theory however, is controversial and often disputed despite being a cornerstone of modern financial theory. Researchers argue it does not make sense to search for stocks that are undervalued or to put efforts in predicting the market trends through performing technical and/or fundamental analysis. However, an equal amount of dissension exist in spite of the fact that academics bring out a lot of evidence supporting the EMH. For instance, investors like Warren Buffett have outperformed the market often for quite a long period of time, but according to the definition of EMH this is impossible. Researchers who have conducted time series -analysis of stock returns in the past found out that the stock prices behaved like geometric random walks. This is a contradiction to the practice of technical analysis, which charts stock price defining movements in future price. However, it did disregard the fundamental analysis, that is, the study of a company's business, its industry and the overall economy which defines future price movements. The Efficient Market Hypothesis developed in the late1960s and early 1970s by Eugene Fama went beyond the random walk hypothesis and rejected both fundamental analysis and technical analysis.

Many empirical researches on stock price behavior or performance of investment managers were done between 1965 and 1970. These climaxed in 1970 with Fama's second landmark paper titled

–Efficient capital markets: a review of the theory and empirical work that appeared in the Journal of Finance. Eugene Fama expounded on his theory of EMH and reviewed the developed literature. Fama conducted empirical tests on the three different types of EMH based on the terminology of his colleague Harry Roberts:

➢ Weak form efficiency – this is where share prices reflect information that is contained in the past price data fully. It does not consider the technical analysis of prices. Essentially it is a random walk hypothesis but it does not fully characterize the stochastic process that explains movement in stock prices.

➢ Semi-strong efficiency –this is where prices reflect all information that is to the available public as well as past prices, earnings reports, economic news among others. Semi-strong efficiency tests are those study share price fluctuations after the announcement of major news like earnings, mergers and acquisitions, stock splits, placement of banks under receivership among others.

➢ Strong form efficiency- Under this efficiency share prices reflect all public and private information. Private information relates to the information that is within the reach of market makers, insider knowledge available to only corporate executive/ managers and/or information that investment advisors spend time and money to compile for their own use. This version of the hypothesis is quite extreme.

2.4 Empirical Studies

Kho, Lee and Stulz (2000) were among the early scholars who empirically approached the issue of bank failures and bailout announcements. They investigated the contagion effect of emerging market crises and bailouts on US bank stock returns. Their study utilized data relating to the

currency crises in Mexico, South Korea, Brazil and Russia from January 1994 to April 1999. The study used the standard event study methodology, and found that the announcement of a bailout plan for Mexican exposed banks resulted in abnormal return of 1.44%, while the non-exposed banks earned 0.51%. Similarly, exposed banks in South Korea recorded abnormal return of 2.09% in reaction to IMF bailout announcement, while their non-exposed counterparts earned only 1.22%. As a result, the US market index earned 1.93% in response to the announcement of the IMF rescue package for Mexico. In the case of Brazil, exposed banks earned 1.95 % on the day negotiations with the IMF opened, while nonexposed banks recorded 0.92 % abnormal return. Furthermore, the abnormal return of exposed banks increased to 3.46 % on the day the Brazilian Government and the IMF issued a joint statement while that of the non-exposed banks was -2.44 %, Vol. 12, No.2 Journal of Monetary and Economic Integration 6. The eventual announcement of the IMF support yielded abnormal return of 2.53 % for exposed banks while non-exposed banks recorded a dismal 0.14 %. Lastly, in the case of Russia; the announcement that the IMF could not rescue Russian exposed banks resulted in abnormal loss of 4.19 % for exposed banks and 0.70 % for non-exposed banks. They therefore concluded that bailout announcements generate significant positive abnormal returns for exposed banks and insignificant abnormal returns for non-exposed banks.

The study was indeed a modest attempt to establish the effect of bailout announcements across a number of economies. However, a number of methodological shortcomings are observable. First and foremost, the study failed to correct for the thin trading bias inherent in the indexes of most emerging markets. Empirical evidence has shown that emerging markets are characterized by securities that are infrequently traded, and this creates a downward bias in their market returns. Secondly, the study did not utilize ARCH/GARCH models that are known to adequately capture

the volatility inherent in stock returns, and thirdly; the study failed to establish the normality of abnormal return which is a pre-condition for the test of significance for abnormal return.

In a related study, King (2009) employed a sample of fifty two bailed out banks drawn from the UK, the Netherlands, Germany, France and the US to analyse the response of bank stock returns to rescue packages announcements. The study used the standard event study methodology to focus on the behaviour of returns fifty trading days before the announcements of government intervention in the affected countries. It was found that government interventions benefited creditors at the expense of shareholders, with bank CDS spreads narrowing down for each of the countries around the announcement dates. The study also revealed that even though there was a brief positive reaction, the stock returns of banks continued to underperform relative to the market in all countries except the US. It was also observed that stock returns of banks that were recipients of government support did worse compared to those of their no recipient counterparts. This suggested that government intervention through the injection of capital did not restore market confidence in the banks. He concluded that the stock market response reflected the nature of the capital injected, the conditions attached to such capital and the protection offered to common stockholders.

The study by King (2009) indeed employed a multi-factor model which increases the accuracy of estimated abnormal return. However, the study did not take into cognizance the likely effect of volatility on the estimated abnormal return. Similarly, the normality of the estimated abnormal return was also not established by the study.

Furthermore, Ait-Sahalia, Andritzky, Jobst, Nowak and Tamirisa (2010) examined the impact of 678 macroeconomic and financial sector policy announcements cutting Vol. 12, No.1 Mohammed Ibrahim across the US, UK, Euro area and Japan during the 2007 financial crisis on interbank credit and liquidity risk premia. The announcements were made over the period 1 June 2007 to 31

March 2009. Using the standard event study methodology, their findings revealed an association between reduction in interbank risk premia and the announcements of interest rate cuts, liquidity support, liability guarantees and recapitalization. It was also found that the decision not to cut interest rates and bail out banks on an interim basis has damning consequences both locally and internationally.

As a further study, King (2012) investigated the effect of bailout announcements by six countries – the US, UK, France, Germany, the Netherlands and Switzerland – on the default credit swap and stock returns of domestic banks and other foreign competitors. Using the standard event study methodology on a sample the 43 largest US and European banks, the study found that the average US bank stock price increased by 28 % in response to the announcement, while the stock returns of UK banks, in contrast, decreased by only 11 %. Furthermore, in the UK, France and the Netherlands, the US banks initially recorded 7.5 % average abnormal return, and this declined to a negative average abnormal return of -14.4 % when details of terms of the bailout agreement were subsequently announced. The study concluded that there is negative correlation of the bank stock prices during the announcement period evidences by cross-border competition effects, with banks receiving foreign support outperforming foreign rivals.

Even though the study by King (2012) recorded a number of improvements in methodological approaches over the one conducted in 2009, some few shortcomings may still be identified. The current study was unable to adequately capture abnormal return as it did not employ ARCH/GARCH models in its estimations. Again, there was no evidence that the estimated abnormal return passed the test for normality.

2.5 Summary

The empirical studies reviewed suffer from a number of methodological issues such as the absence of correction for thin trading, absence of the use of ARCH/GARCH models to capture volatility more accurately and the absence of evidence suggesting the normality of estimated abnormal return. This study fills these gaps by designing an adequate methodological framework that takes into account the effects of thin trading, volatility and normality of estimated variables.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter entails the procedures and methodology that was used in carrying out the research. The methodology was guided by the research objective outlined in chapter one. It starts with research design, followed by population and sample, then data collection and finalizes with data analysis.

3.2 Research Design

The study used an event study research design. Event study refers to an empirical analysis carried out on a stock that has subsequently changed as a result of a significant occurrence. It is a direct consequence of the efficient market hypothesis (Bodie, Kane & Markus 2009).An event can be referred to some development, changes, or announcement that may result in a large movement in the prices assets over a period of time. Examples of these kinds of events includes filing of bankruptcy protection by a company , announcement of a merger or acquisition, defaulting of debt obligation by a company, stock splits, placement of banks under receivership among others. Stock prices, according to EMH theory, reflect all available information and the future expectations about the market. Therefore, a stock's price is equal to its current market price plus the total of its expected future dividends. If the theory holds, then it is possible to analyze the effect of a specific event on a company by looking at the associated effect on the stock price of a firm. The methodology of this event study for the larger part follow the method as described by MacKinlay (1997). However, besides a possible signal of bank failures, the stock returns also reflect changes of the entire market. In order to correct for the market influence, the parameter of interest no longer be the return, but the abnormal return. A market model was employed to

determine expected returns. Abnormal returns relates to the difference between the actual return and the expected return. A market model estimate the expected value of a stock by regressing the historic stock returns of an institution to the value of the market, simulated by an equity index. The equation that a market model estimates is as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$$
$$E(\varepsilon_{it}) = 0$$
$$Var(\varepsilon_{it}) = \sigma_{\varepsilon_i}^2$$

Here Rit is the return of bank number i and Rmt is the market return. The coefficients alpha and beta was estimated using the ordinary least squares method. Epsilon/standard error is the deviation from the expected normal return: the abnormal return. NSE 20 share Index was chosen as index. A period prior to the event (the estimation window) was used for the regressions, which result in expected values for the post event window that do not include information about the event. The investigated event occurred in 2016, which is the placement of Chase bank under statutory management. Therefore, the estimation window for the regression was placed in 2016, covering a total 120 days of observing. The post-event window for the bank failure under study was set at 10 days of observing, a prevalent interval size in similar studies.

A market model was chosen over CAPM, for it has a considerably better fit and it has an expected value of zero for the abnormal return. The systematically failing of CAPM to predict returns, resulting in a non-zero expectation value for the abnormal return, make it a less useful tool. The Fama-French three factor model, with a higher explanatory power, definitely be a more suitable candidate than CAPM (MacKinlay 1997). However, because of its high need for largely unavailable data, the market model still preferred.

This research design has been successfully used by a number of researchers like Keown and Pinkerton (1981) in an empirical investigation of merger announcements and insider trading. They used event study to determine the significance of information leakage during merger announcements. Onchwari (2011) also used event study to determine the impact of stock splits on stock returns

3.3 Study Population

The study analyzed the stocks of commercial banks listed at the Nairobi Securities exchange. A total of ten commercial banks listed at the NSE formed the population for the study.

3.4 Data collection

Secondary data from the NSE share index for the period under study was used. Daily data on stock returns was used since this was a short term event study. The data collected comprise share prices around the event date. Only stick prices of the ten commercial banks listed at the Nairobi Stock Exchange were considered. This method of data collection has been preferred because share prices of the selected banks are readily available at the Nairobi Securities Exchange library. This also saves on time and resources considering the cost implications of acquiring primary data.

3.5 Data Analysis

The event study methodology uses the market model is most cases to analyze data. It tracks the correlation of the stock price of a firm with the actual returns of a baseline reference market. It then tracks the abnormal returns on the specific day of an event which is represents the difference between the actual return of stocks on that day compared to the normal or average return. The difference between the two represents the effect of the event on the company.

The data examined was the daily stock prices of the sample banks and a market index (the NSE 20 Share Index). For a market model the returns are required, so the stock prices was manipulated to yield the stock return:

$$R_{it} = \frac{P_{it} - P_{it-1}}{P_{it-1}}$$

Where Rit is the today's actual return and Pit and Pit-1 are, respectively, todays and yesterday's stock prices.

The market model was applied to every single bank sampled and used to determine the normal returns for the post event window:

$$AR_{it} = R_{it} - E(R_{it})$$
$$E(R_{it}) = a_i + b_i R_{mt}$$
$$Var(AR_{it}) = \sigma_{\varepsilon_i}^2 + \frac{1}{L}\left[\frac{1 + (R_m - \mu_m)^2}{\sigma_{m_t}^2}\right]$$

Here a and b was the estimated coefficients and Rmt was again the market return. The was retrieved $\sigma_{\varepsilon_i}^2$ from the regression of bank i's returns on the returns of the NSE 20 Share Index. Under the null hypothesis, the abnormal return was zero. The necessary tools to test this hypothesis against the alternative hypotheses $AR<0$ now be developed.

The variance of the abnormal return has an additional term, with L the length of the estimation window. Mu, the average market return was divided by the variance of the market. However, the reasonably large estimation window length that was used here, allows us to ignore the additional term.   So $Var(AR_{it}) = \sigma_{\varepsilon_i}^2$ was assumed. Next, the average of the abnormal returns   of all banks was calculated as follows:

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{it}$$

$$Var(\overline{AR_t}) = \frac{\sum_{i=1}^{N}\sigma_{\varepsilon_i}^{2}}{N^2}$$

Where N is the number of securities, which was ten in this case. Notice that an assumption was made here, being, the variances which was assumed to be uncorrelated to each other. Zero correlation for peer returns is unlikely, but it was assumed for simplifying reasons. This implies that most likely the variance was seriously underestimated. In order to draw overall inference, the abnormal returns were aggregated $(\overline{CAR_\tau})$ both in time and across securities.

$$\overline{CAR_\tau} = \sum_{t=1}^{\tau}\overline{AR_t}$$

$$Var(\overline{CAR_\tau}) = \sum_{t=1}^{\tau}Var(\overline{AR_t})$$

Using $(\overline{CAR_\tau})$ the possible effects of bank failures accumulate and it was possible to regard an interval in the post-event window instead of single post event observations. All tools that were needed to test the impact significantly have now been presented.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter analyses and discuss the findings from the secondary data collected from the Nairobi Securities Exchange. The study sought to establish the effect of commercial bank failures on the stock returns of commercial banks listed at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the ten commercial banks listed at the NSE. The study was an event analysis of the failure of Chase Bank that was announced by the Central Bank of Kenya on 7th April 2016. The study analyzed the reaction of stock returns of ten listed commercial banks 10 days before failure of Chase bank and 10 days after the failure. Analysis of the data was done with the aid of Microsoft's Excel (2013). T-test was carried out to establish the

4.2 Reaction of Stock Returns to Bank Failure

The study sought to evaluate the effect of bank failure on the stock returns of commercial banks listed at the Nairobi Securities Exchange. The study analyzed the reaction of stock returns of ten listed commercial banks 10 days before failure of Chase bank and 10 days after the failure. The section also discusses the abnormality of the stock returns and the cumulative abnormality. The detailed stock returns, abnormal returns and cumulative stock returns are as show in Appendix I.

4.2.1 Kenya Commercial bank Limited Stock Returns

The reaction of Kenya Commercial bank Limited stock returns following chase bank failure are as shown in figure 4.2.1.

Figure 4.2.1: KCB Stock Returns
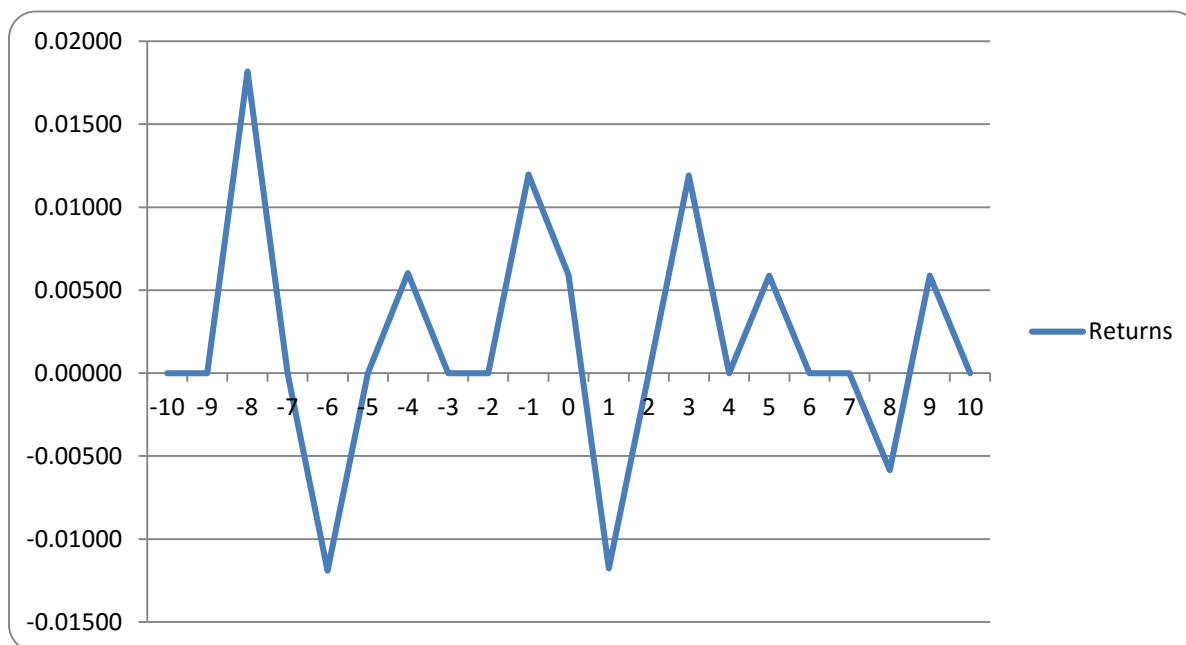
Source: Research Findings (2016)

The stock returns for Kenya Commercial Bank Limited reacted sharply after announcement of chase bank failure resulting to negative returns at day 1 and zero returns at day 2. However, the stocks record a positive return in day 3. The stocks also record zero returns 3 and two days before the event. This can be attributed to the eminent closure of Chase bank following massive panic withdrawals.

4.2.2 Equity Bank Limited Stock Returns

The behaviour of Equity Bank Limited stock returns following the failure of Chase Bank Limited on 7th April 2016 are as illustrated in Figure 4.2.2.

Figure 4.2.2: Equity Bank Stock Returns
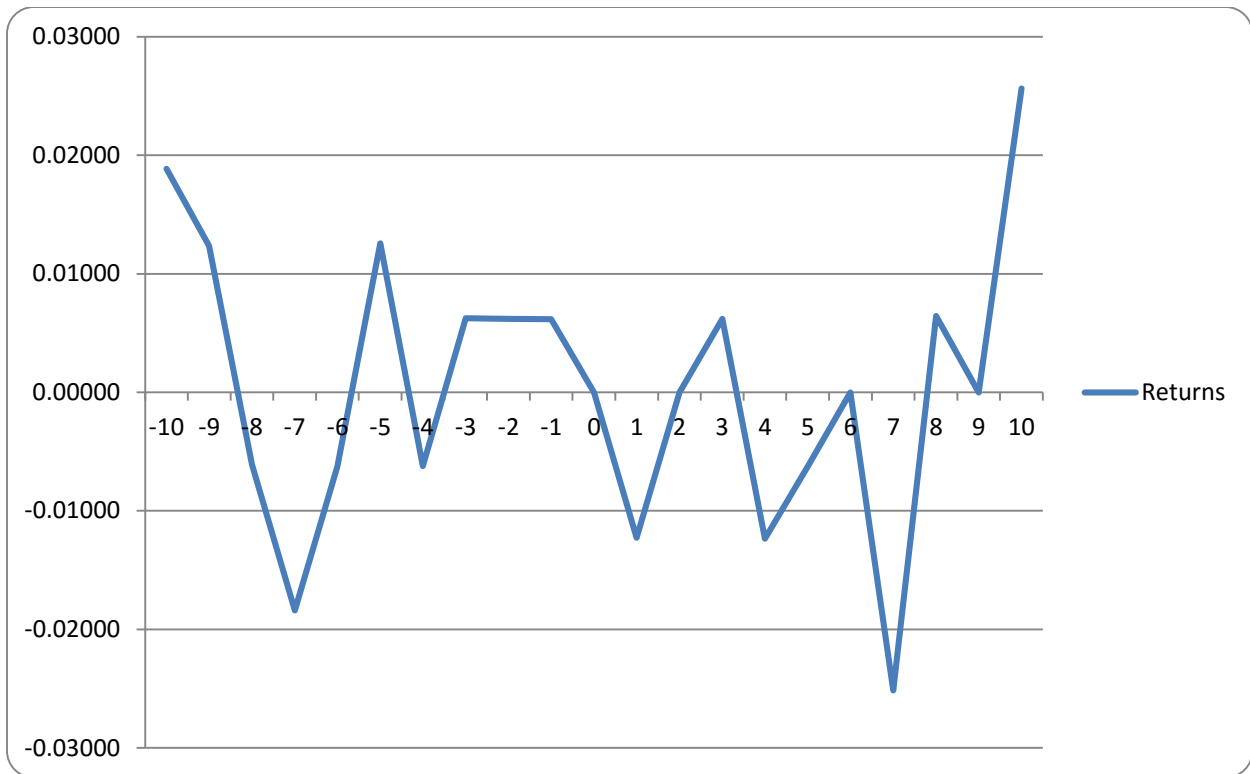
Source: Research Findings (2016)

The stock returns of Equity Bank Limited reacted erratically following the announced of Chase closure by the CBK. The stocks record negative returns on day 1 and 2 days after the failure of Chase bank. Day 3 recorded a slight positive returns followed by negative returns the following day.The effect was felt up to 7 days after the event. Slightly high returns were recorded three days before the failure of Chase bank. Negative returns after Chase bank failure can be attributed to the negative image of the bank following Chase bank failure.

4.2.3 Barclays Bank Limited Stock Returns

The reaction of Kenya Commercial bank Limited stock returns following chase bank failure are as shown in figure 4.2.1.

Figure 4.2.3: Barclays Bank Limited Stock Returns
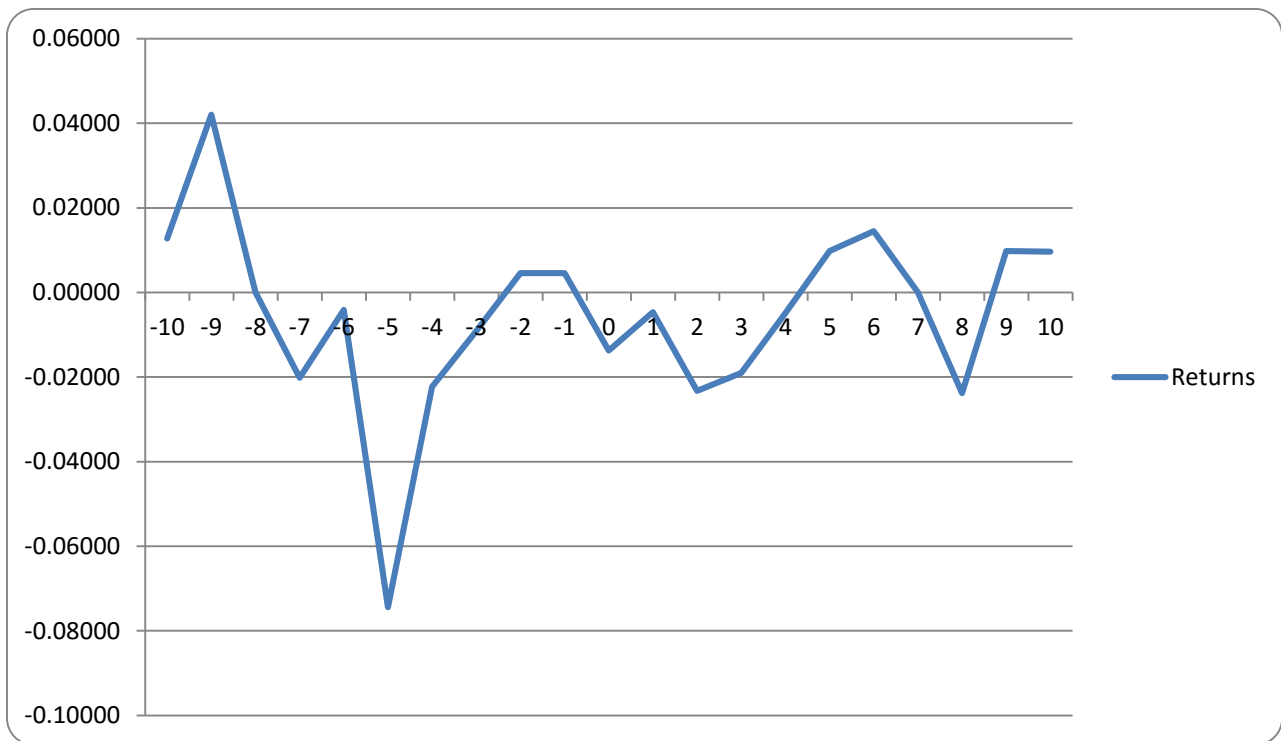
Barclays Bank Limited a mild positive returns 2 days before the failure of Chase bank for its share in both pre-stock split and post-stock split. However, the stock returns remained negative for the first 4 days after announcement of Chase Bank failure after which the returns rose to be positive before dropping to negative returns again in day 8. 10 days after the stock split, the share prices dropped sharply but then rose again. This indicates that the failure of Chase bank had an immediate negative effect on stock returns.

4.2.4 Co-operative Bank Stock Returns

The results for the behaviour of Co-operative Bank stock returns following failure of Chase bank are as shown in figure 4.2.4.

Figure 4.2.4: Co-operative Bank Stock Returns
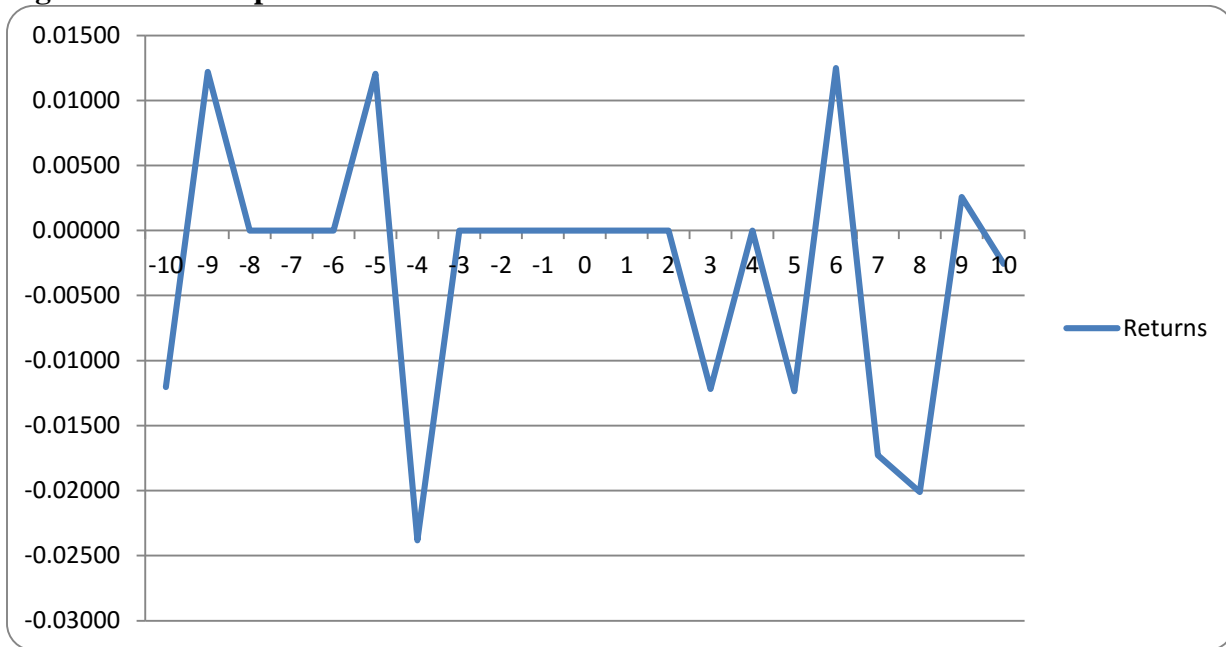
Source: Research Findings

Co-operative Bank recorded negative stock returns 4 days before the event and zero returns for 3 days before and 2 days after the failure of Chase bank. This implies that the Co-operative Bank stocks reacted sharply to the failure of Chase bank. However, 6 days after the failure, the returns rose sharply before dropping back to the negative zone.

4.2.5 Standard Chartered Bank Stock Returns

The results for the behaviour of Standard Chartered Bank share prices are as shown in figure 4.2.5.

Figure 4.2.5: Standard Chartered Bank Stock Returns
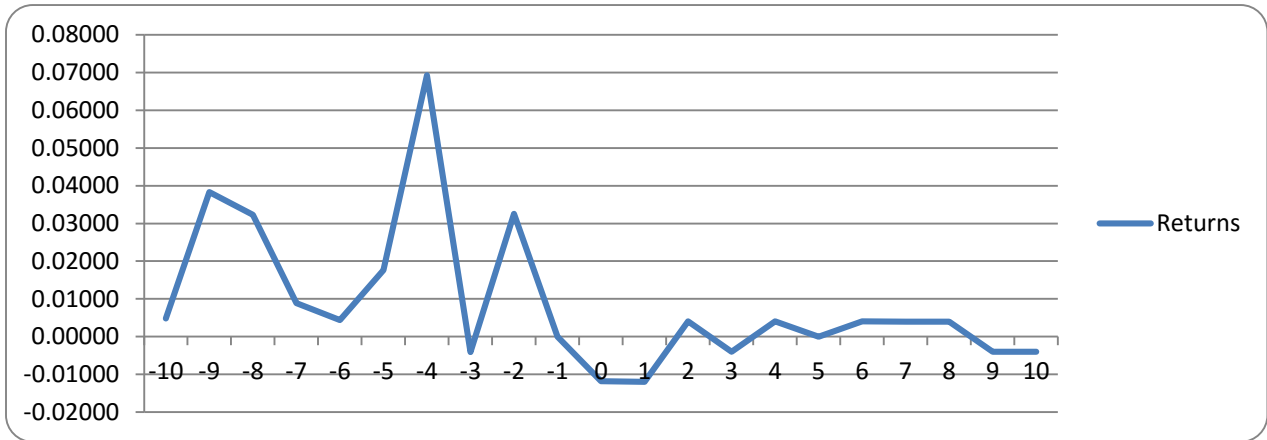
Source: Research Findings (2016)

The results of the study indicated that Standard Chartered Bank stock returns were significantly sensitive to the bank failure. This is evidenced by the sharp decrease to negative returns up to 2 days after the failure followed by mildly positive returns up to the 8th day after the event. This decrease in stock returns can be attributed to the fear of failure in other commercial banks.

4.2.6 Diamond Trust Bank Stock Returns

The results for the behaviour of Equity Bank Limited share prices are as shown in figure 4.2.6.

Figure 4.2.6: Diamond Trust Bank Stock Returns
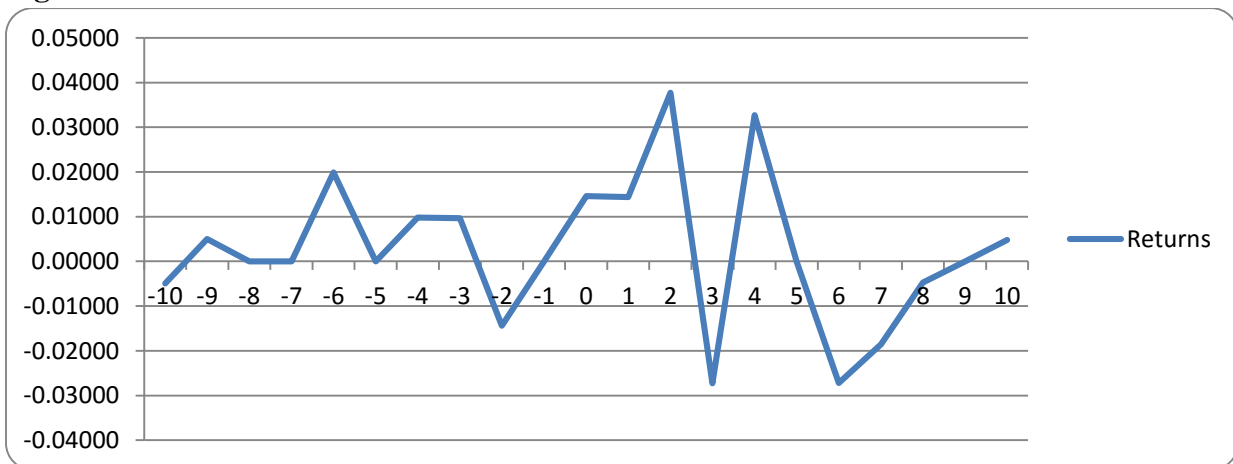
Source: Research Findings (2016)

Diamond Trust Bank stock returns were not sensitive to the failure of Chase bank. Diamond Trust Bank recorded positive returns in stock up to the third day when the adverse effects of Chase bank failure were felt resulting to negative returns. Thereafter, there were ups-and-downs in stock returns up to 10 days after the event.

4.2.7 National Bank Stock Returns

The behaviour of National Bank stock returns to Chase Bank failure are as shown in figure 4.2.7.

Figure 4.2.7: National Bank Stock Returns
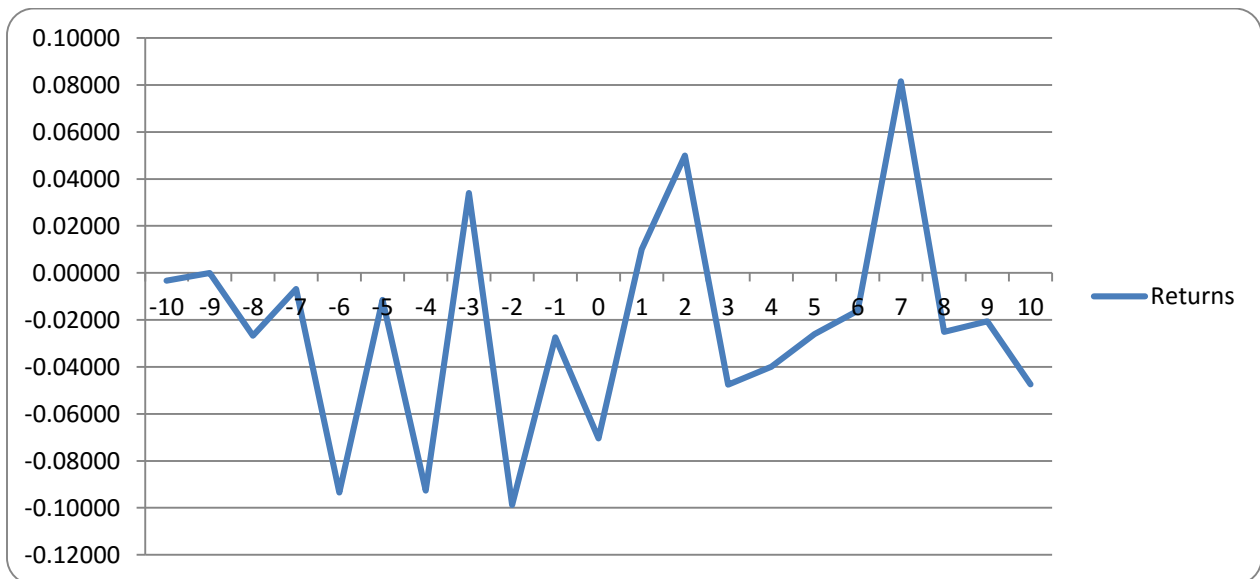
Source: Research Findings (2016)

National Bank stock returns also reacted sharply to the failure of Chase Bank. The bank's stock returns dropped to negative 2 days before and 1 day after the failure of Chase Bank was announced. Positive return was recorded on day 2 after the event but day 3 to day 6 recorded negative returns. This basically indicates that the failure of Chase Bank had adverse effects on the stock returns of National bank.

4.2.8 CFC Bank Stock Returns

The results for the behaviour of Equity Bank Limited share prices are as shown in figure 4.2.8.

Figure 4.2.8: CFC Bank Stock Returns
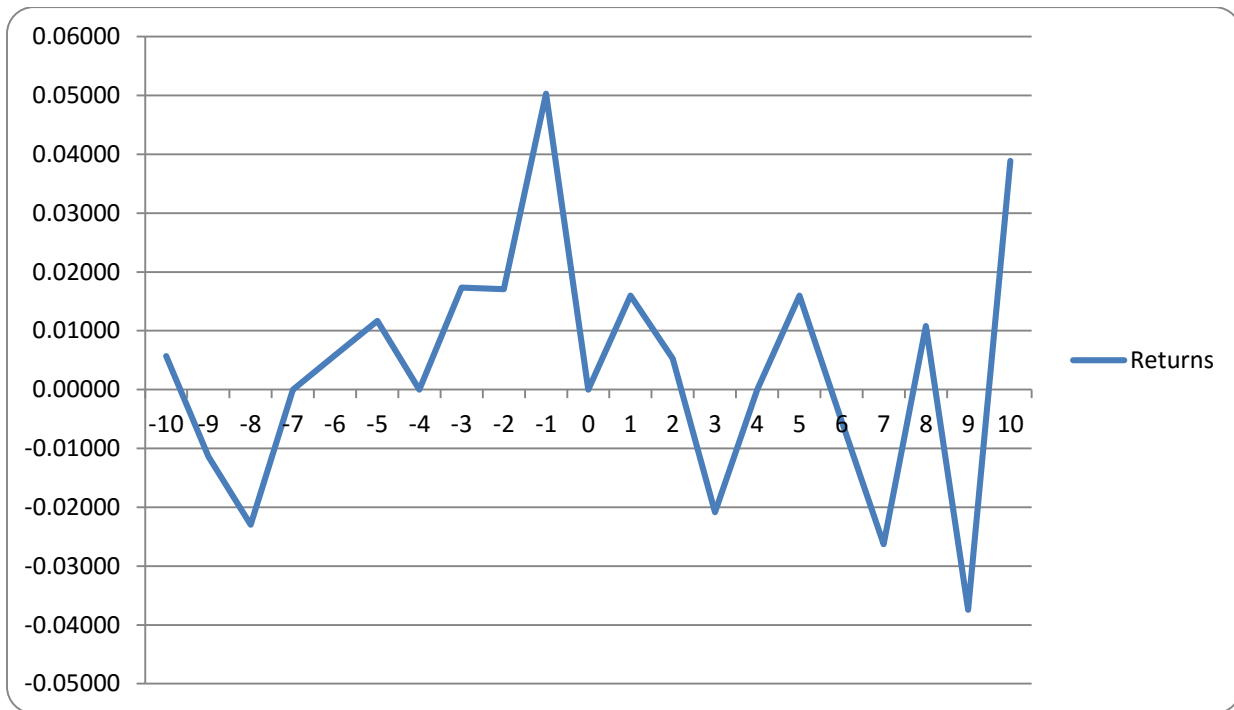
There were ups-and-downs in CFC Bank's stock returns before and after the failure of Chase Bank. The stock returns were positive 3 days before event but dropped to zero returns on the material day. Adverse effects were felt on day 3 and day 9 after the bank failure where the returns were negative in nature.

4.2.9 NIC Bank Stock Returns

The reaction of NIC Bank stock returns following chase bank failure are as shown in figure 4.2.9.

Figure 4.2.9: NIC Bank Stock Returns
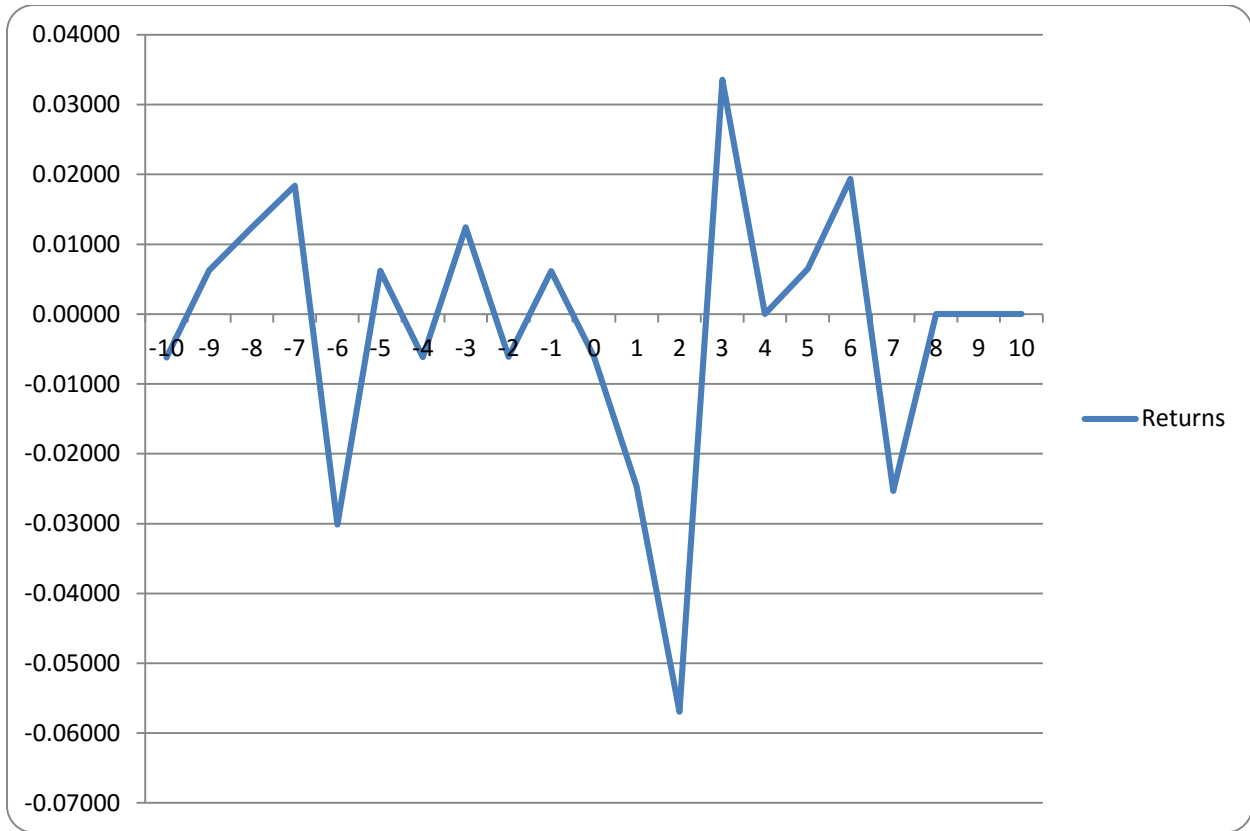

Source: Research Findings (2016)

The stock returns of NIC bank took the toll of the Chase Bank failure. The bank's returns were negative 4 and 2 days before the event while zero returns were recorded on the event day. The returns on day 1 and day 2 were deeply negative as a result of Chase Bank failure. However, the bank's returns were positive between day 3 and day 6 after the event.

4.2.10 I&M Bank Stock Returns

The results for the behaviour of Nation Media Group share prices are as shown in figure 4.2.9.

Figure 4.2.10: I&M Bank Stock Returns
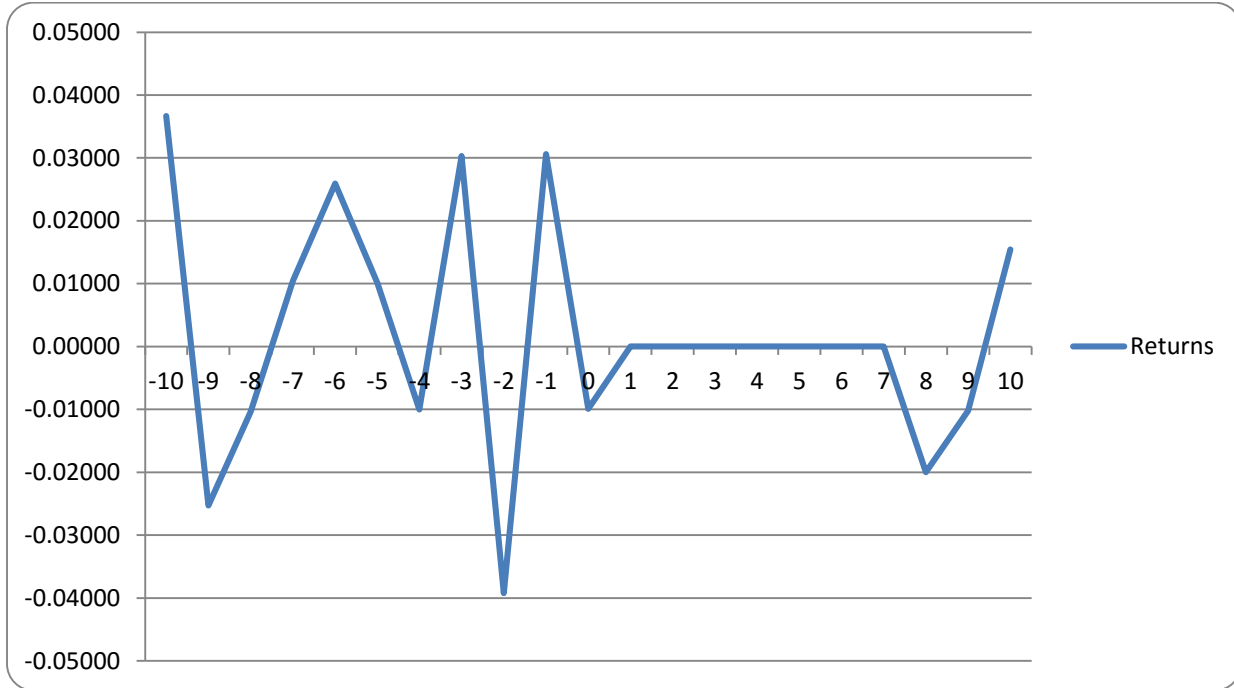
Source: Research Findings

During the pre-event period, the stock returns or I&M Bank fluctuating between positive and negative. However, the failure of Chase Bank changed this rhythm where the returns remained zero between day 1 and day 7 before becoming negative in day 8 and 9. This indicates that I&M stock are highly sensitive to bank failure.

4.3 Abnormality of Stock Returns following Bank Failure

In order to establish the abnormal returns of the listed commercial banks following the failure of Chase Bank, the difference between the banks actual stock returns and expected returns was computed. The results for the abnormal returns are shown in detail in Appendix I. The summary of the abnormal returns are as shown in Table 4.3 together with their level of significance.

Table 4.3: Abnormality of Stock Returns following Bank Failure

Date	Average CAR	AVG T-test
22-03-16	0.00262	0.18
23-03-16	0.00590	0.27
24-03-16	0.00421	0.01
29-03-16	0.00406	-0.03
30-03-16	-0.00322	-0.29
31-03-16	-0.00502	-0.10
01-04-16	-0.01461	-0.41
04-04-16	-0.00663	0.37
05-04-16	-0.01762	-0.52
06-04-16	-0.01123	0.30
07-04-16	-0.02361	-0.67
08-04-16	-0.01927	0.22
11-04-16	-0.01249	0.38
12-04-16	-0.01623	-0.10
13-04-16	-0.01634	0.02
14-04-16	-0.01608	-0.01
15-04-16	-0.01847	-0.09
18-04-16	-0.02257	-0.30
19-04-16	-0.03121	-0.53
20-04-16	-0.03739	-0.24
21-04-16	-0.03730	-0.01

Source: Research Findings (2016)

The study findings revealed that there were high levels of variability in abnormal returns before

the material day. This implies that the stocks were highly volatile and can possibly be the high

anxiety following massive withdrawals from Chase Bank which caused a lot of panic even in other

commercial banks. On the very day the failure of Chase Bank was announced by CBK, negative

abnormal returns were recorded. Positive abnormal returns were recorded in day 1 and day 2 after

the event. However, these abnormal return are less than 1 implying that none of the investors benefited during this period. The findings also indicated that the listed commercial banks react very fast to bank failures which imply that the stock market is efficient. The abnormality was noted to be significant on the 7th and 8th day before the event and 4th, 6th and 10th day after the event as evidenced by t-test values of less than 0.05. The trend of the abnormality following failure of Chase Bank is as shown in Figure 4.3.

Figure 4.3: Average Abnormal Returns
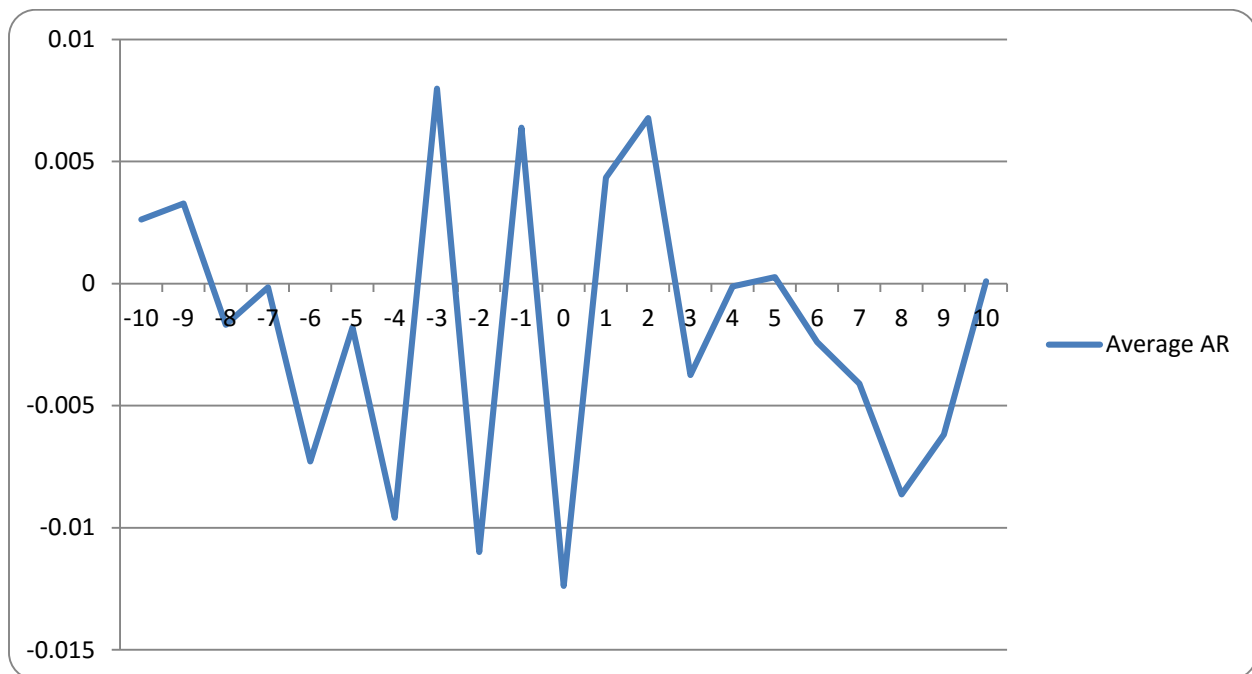
Source: Research Findings (2016)

4.4 The Cumulative Abnormal Returns

The results of the study on Cumulative Average Abnormal Returns of the listed commercial banks following failure of Chase Bank are as shown in Figure 4.4.

Figure 4.4: Cumulative Abnormal Returns (CAR)
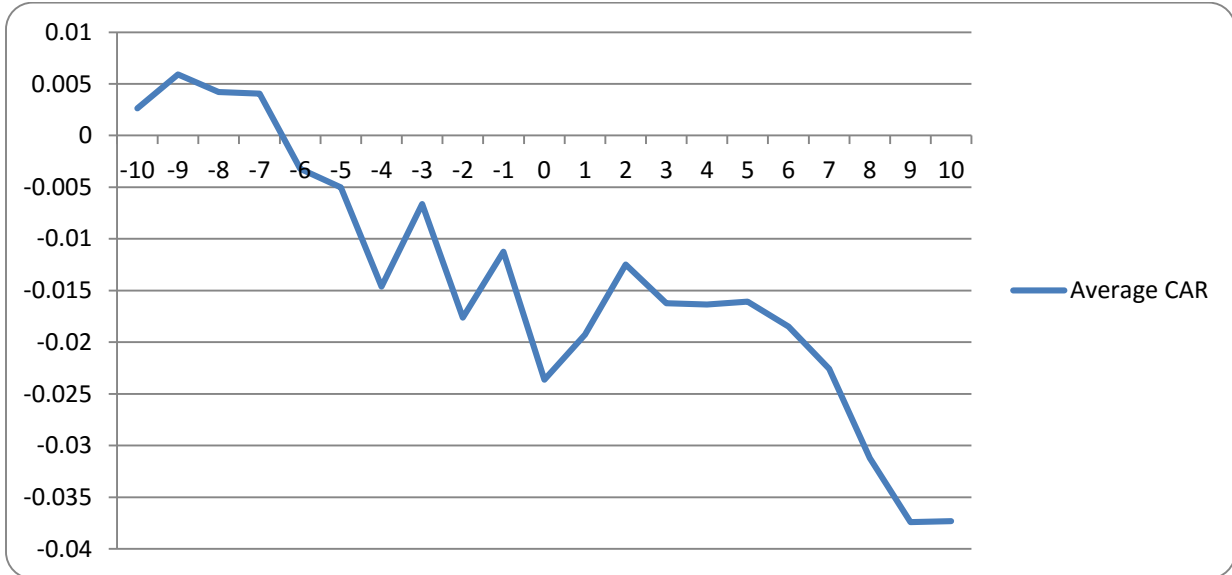
Source: Research Findings (2016)

The study findings indicate a positive Cumulative Average Abnormal Returns between 10th and 7th day before the event. Thereafter, the Cumulative Average Abnormal Returns starts on a downward trend even past the 10th day after the event. This indicates that that bank failure has a cumulative negative effect on the stock returns for commercial banks listed at the NSE.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher discussed summary of the findings, conclusions drawn by the study, recommendations for policy change and suggestions for future research. The study then presents the major limitations of the study.

5.2 Summary of Findings

The study focused on establishing the effect of commercial bank failures on the stock returns of commercial banks listed at the Nairobi Securities Exchange. The secondary data for analysis was gathered from the ten commercial banks listed at the NSE. The study was an event analysis of the failure of Chase Bank that was announced by the Central Bank of Kenya on 7th April 2016. The study analyzed the reaction of stock returns of ten listed commercial banks 10 days before failure of Chase bank and 10 days after the failure. Analysis of the data was done with the aid of Microsoft's Excel (2013). T-test was carried out to establish the significance of the bank failure effect on stock returns.

The stock returns for Kenya Commercial Bank Limited reacted sharply after announcement of chase bank failure resulting to negative returns at day 1 and zero returns at day 2. However, the stocks record a positive return in day 3. The stocks also record zero returns 3 and two days before the event. This can be attributed to the eminent closure of Chase bank following massive panic withdrawals. The stock returns of Equity Bank Limited reacted erratically following the announced of Chase closure by the CBK. The stocks record negative returns 1 and 4 days after the failure of Chase bank. The effect was felt up to 7 days after the event slightly high returns were recorded

three days before the failure of Chase bank. Negative returns after Chase bank failure can be attributed to the negative image of the bank following Chase bank failure.

Barclays Bank Limited a mild positive returns 2 days before the failure of Chase bank for its share in both pre-stock split and post-stock split. However, the stock returns remained negative for the first 4 days after announcement of Chase Bank failure after which the returns rose to be positive before dropping to negative returns again in day 8. 10 days after the stock split, the share prices dropped sharply but then rose again. This indicates that the failure of Chase bank had an immediate negative effect on stock returns. Co-operative Bank recorded negative stock returns 4 days before the event and zero returns for 3 days before and 2 days after the failure of Chase bank. This implies that the Co-operative Bank stocks reacted sharply to the failure of Chase bank. However, 6 days after the failure, the returns rose sharply before dropping back to the negative zone.

The results of the study indicated that Standard Chartered Bank stock returns were significantly sensitive to the bank failures. This is evidenced by the sharp decrease to negative returns up to 2 days after the failure followed by mildly positive returns up to the 8th day after the event. This decrease in stock returns can be attributed to the fear of failure in other commercial banks. Diamond Trust Bank stock returns were not sensitive to the failure of Chase bank. Diamond Trust Bank recorded positive returns in stock up to the third day when the adverse effects of Chase bank failure were felt resulting to negative returns. Thereafter, there were ups-and-downs in stock returns up to 10 days after the event.

National Bank stock returns also reacted sharply to the failure of Chase Bank. The bank's stock returns dropped to negative 2 days before and 1 day after the failure of Chase Bank was announced. Positive return was recorded on day 2 after the event but day 3 to day 6 recorded negative returns.

This basically indicates that the failure of Chase Bank had adverse effects on the stock returns of National bank. There were ups-and-downs in CFC Bank's stock returns before and after the failure of Chase Bank. The stock returns were positive 3 days before event but dropped to zero returns on the material day. Adverse effects were felt on day 3 and day 9 after the bank failure where the returns were negative in nature.

The stock returns of NIC bank took the toll of the Chase Bank failure. The bank's returns were negative 4 and 2 days before the event while zero returns were recorded on the event day. The returns on day 1 and day 2 were deeply negative as a result of Chase Bank failure. However, the bank's returns were positive between day 3 and day 6 after the event. During the pre-event period, the stock returns or I&M Bank fluctuating between positive and negative. However, the failure of Chase Bank changed this rhythm where the returns remained zero between day 1 and day 7 before becoming negative in day 8 and 9. This indicates that the I&M stock are highly sensitive to bank failure.

The study findings revealed that there were high levels of variability in abnormal returns before the material day. This implies that the stocks were highly volatile and can possibly be the high anxiety following massive withdraws from Chase Bank which caused a lot of panic even in other commercial banks. On the very day the failure of Chase Bank was announced by CBK, negative abnormal returns were recorded. Positive abnormal returns were recorded in day 1 and day 2 after the event. However, these abnormal return less than 1 implying that none of the investors benefited during this period. The findings also indicated that the commercial banks react very fast to bank failures which imply that the stock market is efficient. The abnormality was noted to be significant on the 7th and 8th day before the event and 4th, 6th and 10th day after the event as evidenced by t-test values of less than 0.05. The study findings indicate a positive Cumulative Average Abnormal

Returns between 10th and 7th day before the event. Thereafter, the Cumulative Average Abnormal Returns starts on a downward trend even past the 10th day after the event. This indicates that that bank failure has a cumulative negative effect on the stock returns for commercial banks listed at the NSE.

5.3 Conclusion

The study concludes that bank failure has a negative effect on stock returns. The study also concludes that the stocks of listed commercial banks are highly sensitive to bank failures and react immediately to any bank failure announce by the Central Bank of Kenya.

This conclusion agrees with other studies done on the reaction of news announcement to the stock market performance. For instance Kho, Lee and Stulz (2000) established the effect of bailout announcements across a number of economies, King (2009) employed a sample of fifty two bailed out banks drawn from the UK, the Netherlands, Germany, France and the US to analyse the response of bank stock returns to rescue packages announcements. Also, Ait-Sahalia, Andritzky, Jobst, Nowak and Tamirisa (2010) examined the impact of 678 macroeconomic and financial sector policy announcements cutting across the US, UK, Euro area and Japan during the 2007 financial crisis on interbank credit and liquidity risk premia. As a further study, King (2012) investigated the effect of bailout announcements by six countries – the US, UK, France, Germany, the Netherlands and Switzerland – on the default credit swap and stock returns of domestic banks and other foreign competitors. All this studies conclude that there is a negative response of stock performance to bad news announcement.

This implies bank failure information announced by CBK is very useful when valuing the securities. The study also concludes that no investors made any abnormal profits following bank failures. The study further concludes that commercial banks stocks react swiftly to any bank failure information.

5.4 Recommendations

The study found out that bank failures have a negative impact on the stock returns for commercial banks listed at the Nairobi Securities Exchange. The study therefore recommends that Central Bank of Kenya should come up with stringent rules and regulations of the banking sector to prevent pains and mass withdrawals that lead to bank failures which in turn results to loss for stock investors.

The Central bank of Kenya should come up with real time monitoring systems to track the activities of commercial banks as a way of protecting depositors against banking malpractices that leads to bank failures.

5.5 Limitation of the Study

The researcher found it difficult to obtain the secondary data because the contact people at the NSE and Capitals Market Authority had busy working schedules which derailed the completion of the data collection process. The researcher made extra effort in reminding contact people on the urgency of the data in order to meet academic deadlines.

The study was mainly dependent on secondary data available. This means that the accuracy of the data provided was dependent on the information available. This is however a general problem when dealing with secondary data. We countered the problem by crosschecking data from NSE and Capital Markets Authority.

This study was being undertaken within a limited period of time. In order to be able to draw conclusive results the research should have been conducted over a longer period of time. This study was constrained by lack of complete share prices of some commercial banks.

The data collection was costly considering the stock prices are not readily available to the users but have to be purchased from Nairobi Securities exchange.

5.6 Suggestions for Further Research

In future, a study should be conducted to examine if bank failure has short term or long term effect on the stock returns for firms listed at the NSE. The study was useful to CBK who might use the information to come up with long term strategies for preventing bank failures.

A study should also be conducted to find out the effect of bank failures on stock returns of other companies in different industries besides the banking industry.

A similar study should be replicated considering other corporate event such as change in Central Bank Rate, mergers and acquisitions, stock splits, cross listings and rights issuance. This shed light on how other corporate events affect stock returns.

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APPENDIX I: SECONDARY DATA

Date	KCB	R	NSE 20 INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	41.25	0.00000	3957.06	0.004784	0.006386	-0.006386	-0.006386	-0.421648
23-03-16	41.25	0.00000	3991.95	0.008817	0.011170	-0.011170	-0.017556	-0.737518
24-03-16	42.00	0.01818	4001.36	0.002357	0.003508	0.014674	-0.002882	0.968888
29-03-16	42.00	0.00000	3995.56	-0.001450	-0.001008	0.001008	-0.001874	0.066527
30-03-16	41.50	-0.01190	3981.33	-0.003561	-0.003513	-0.008392	-0.010266	-0.554109
31-03-16	41.50	0.00000	3982.09	0.000191	0.000938	-0.000938	-0.011205	-0.061942
01-04-16	41.75	0.00602	3996.38	0.003589	0.004968	0.001056	-0.010149	0.069718
04-04-16	41.75	0.00000	4008.50	0.003033	0.004309	-0.004309	-0.014458	-0.284505
05-04-16	41.75	0.00000	4016.64	0.002031	0.003120	-0.003120	-0.017578	-0.206028
06-04-16	42.25	0.01198	4030.00	0.003326	0.004657	0.007319	-0.010259	0.483258
07-04-16	42.50	0.00592	4054.29	0.006027	0.007861	-0.001944	-0.012202	-0.128335
08-04-16	42.00	-0.01176	3999.33	-0.013556	-0.015367	0.003603	-0.008600	0.237874
11-04-16	42.00	0.00000	3958.57	-0.010192	-0.011377	0.011377	0.002777	0.751183
12-04-16	42.50	0.01190	3925.32	-0.008399	-0.009251	0.021156	0.023933	1.396859
13-04-16	42.50	0.00000	3909.47	-0.004038	-0.004078	0.004078	0.028011	0.269239
14-04-16	42.75	0.00588	3901.45	-0.002051	-0.001722	0.007604	0.035615	0.502062
15-04-16	42.75	0.00000	3920.00	0.004755	0.006351	-0.006351	0.029263	-0.419358
18-04-16	42.75	0.00000	3929.51	0.002426	0.003589	-0.003589	0.025674	-0.236989
19-04-16	42.50	-0.00585	3934.58	0.001290	0.002242	-0.008090	0.017584	-0.534162
20-04-16	42.75	0.00588	3939.50	0.001250	0.002195	0.003687	0.021271	0.243471
21-04-16	42.75	0.00000	3968.75	0.007425	0.009518	-0.009518	0.011753	-0.628474
Date	Equity	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	40.50	0.01887	3957.06	0.004784	0.005397	0.013471	0.013471	0.995336
23-03-16	41.00	0.01235	3991.95	0.008817	0.009888	0.002457	0.015928	0.181553
24-03-16	40.75	-0.00610	4001.36	0.002357	0.002694	-0.008792	0.007137	-0.649597
29-03-16	40.00	-0.01840	3995.56	-0.001450	-0.001545	-0.016860	-0.009723	-1.245703

Date	Baclays	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
30-03-16	39.75	-0.00625	3981.33	-0.003561	-0.003897	-0.002353	-0.012076	-0.173839
31-03-16	40.25	0.01258	3982.09	0.000191	0.000282	0.012297	0.000221	0.908577
01-04-16	40.00	-0.00621	3996.38	-0.003589	-0.004066	0.010277	-0.010056	0.759311
04-04-16	40.25	0.00625	4008.50	0.003033	0.003447	0.002803	0.007252	0.207136
05-04-16	40.50	0.00621	4016.64	0.002031	0.002331	0.003881	0.003372	0.286722
06-04-16	40.75	0.00617	4030.00	0.003326	0.003773	0.002400	0.000972	0.177291
07-04-16	40.75	0.00000	4054.29	0.006027	0.006782	0.006782	0.007754	0.501061
08-04-16	40.25	-0.01227	3999.33	-0.013556	-0.015028	0.002758	-0.004996	0.203772
11-04-16	40.25	0.00000	3958.57	-0.010192	-0.011281	-0.011281	-0.006285	0.833522
12-04-16	40.50	0.00621	3925.32	-0.008399	-0.009285	0.015496	0.021782	1.144971
13-04-16	40.00	-0.01235	3909.47	-0.004038	-0.004428	-0.007918	-0.013864	-0.585024
14-04-16	39.75	-0.00625	3901.45	-0.002051	-0.002216	-0.004034	-0.009829	-0.298092
15-04-16	39.75	0.00000	3920.00	0.004755	0.005364	-0.005364	-0.004465	-0.396340
18-04-16	38.75	-0.02516	3929.51	0.002426	0.002771	-0.027928	-0.023463	-2.063506
19-04-16	39.00	0.00645	3934.58	0.001290	0.001506	0.004946	-0.018517	0.365415
20-04-16	39.00	0.00000	3939.50	0.001250	0.001462	0.001462	-0.019979	-0.107998
21-04-16	40.00	0.02564	3968.75	0.007425	0.008338	0.017303	-0.002676	1.278468
Date	Baclays	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	11.90	0.01277	3957.06	0.004784	0.001484	0.011282	0.011282	0.708149
23-03-16	12.40	0.04202	3991.95	0.008817	0.004331	0.037686	0.048968	2.365438
24-03-16	12.40	0.00000	4001.36	0.002357	-0.000229	0.000229	0.049197	0.014387
29-03-16	12.15	-0.02016	3995.56	-0.001450	-0.002917	-0.017245	0.031952	-1.082409
30-03-16	12.10	-0.00412	3981.33	-0.003561	-0.004407	0.000292	0.032245	0.018343
31-03-16	11.20	-0.07438	3982.09	0.000191	-0.001759	-0.072622	-0.040377	-4.558280
01-04-16	10.95	-0.02232	3996.38	-0.003589	-0.000640	-0.022961	-0.063339	-1.441234
04-04-16	10.85	-0.00913	4008.50	-0.003033	-0.000248	-0.009380	-0.072719	-0.588764
05-04-16	10.90	0.00461	4016.64	-0.002031	-0.000460	0.005068	-0.067651	0.318108
06-04-16	10.95	0.00459	4030.00	-0.003326	-0.000455	0.004132	-0.063518	0.259378
07-04-16	10.80	-0.01370	4054.29	-0.006027	-0.002362	-0.016060	-0.079579	-1.008063

Date	Coop	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
08-04-16	10.75	-0.00463	3999.33	-0.013556	-0.011463	0.006833	-0.072745	-0.428917
11-04-16	10.50	-0.02326	3958.57	-0.010192	-0.009088	-0.014168	-0.086913	-0.889276
12-04-16	10.30	-0.01905	3925.32	-0.008399	-0.007823	-0.011225	-0.098138	-0.704551
13-04-16	10.25	-0.00485	3909.47	-0.004038	-0.004744	-0.000111	-0.098248	-0.006940
14-04-16	10.35	0.00976	3901.45	-0.002051	-0.003341	0.013098	-0.085151	0.822102
15-04-16	10.50	0.01449	3920.00	0.004755	0.001463	0.013030	-0.072121	0.817832
18-04-16	10.50	0.00000	3929.51	0.002426	0.000181	-0.000181	-0.071940	-0.011339
19-04-16	10.25	-0.02381	3934.58	0.001290	0.000982	-0.022827	-0.094768	-1.432799
20-04-16	10.35	0.00976	3939.50	0.001250	0.001011	0.010767	-0.084001	0.675795
21-04-16	10.45	0.00966	3968.75	0.007425	0.003348	0.006314	-0.077687	0.396292
Date	Coop	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	20.50	-0.01205	3957.06	0.004784	0.005055	-0.017103	-0.017103	-1.188292
23-03-16	20.75	0.01220	3991.95	0.008817	0.006891	0.005304	-0.011799	0.368491
24-03-16	20.75	0.00000	4001.36	0.002357	0.003950	-0.003950	-0.015749	-0.274421
29-03-16	20.75	0.00000	3995.56	-0.001450	0.002216	-0.002216	-0.017965	-0.153977
30-03-16	20.75	0.00000	3981.33	-0.003561	0.001254	-0.001254	-0.019220	-0.087156
31-03-16	21.00	0.01205	3982.09	0.000191	0.002963	0.009085	-0.010135	0.631214
01-04-16	20.50	-0.02381	3996.38	0.003589	0.004510	-0.028320	-0.038455	-1.967634
04-04-16	20.50	0.00000	4008.50	0.003033	0.004257	-0.004257	-0.042712	-0.295794
05-04-16	20.50	0.00000	4016.64	0.002031	0.003801	-0.003801	-0.046513	-0.264089
06-04-16	20.50	0.00000	4030.00	0.003326	0.004391	-0.004391	-0.050904	-0.305077
07-04-16	20.50	0.00000	4054.29	0.006027	0.005621	-0.005621	-0.056525	-0.390540
08-04-16	20.50	0.00000	3999.33	-0.013556	-0.003297	0.003297	-0.053228	0.229067
11-04-16	20.50	0.00000	3958.57	-0.010192	-0.001765	0.001765	-0.051463	0.122622
12-04-16	20.25	-0.01220	3925.32	-0.008399	-0.000949	-0.011246	-0.062709	-0.781384
13-04-16	20.25	0.00000	3909.47	-0.004038	-0.001037	0.001037	-0.063747	-0.072082
14-04-16	20.00	-0.01235	3901.45	-0.002051	-0.001942	-0.014288	-0.078035	-0.992694
15-04-16	20.25	0.01250	3920.00	0.004755	0.005041	0.007459	-0.070576	0.518210

Date		R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
18-04-16	19.90	-0.01728	3929.51	0.002426	0.003981	-0.021265	-0.091841	-1.477464
19-04-16	19.50	-0.02010	3934.58	0.001290	0.003464	-0.023564	-0.115405	-1.637218
20-04-16	19.55	0.00256	3939.50	0.001250	0.003446	-0.000882	-0.116287	-0.061252
21-04-16	19.50	-0.00256	3968.75	0.007425	0.006257	-0.008815	-0.125102	-0.612451
Date	Stanchart	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	188.10	0.00481	3957.06	0.004784	0.001268	0.003540	0.003540	0.248135
23-03-16	195.30	0.03828	3991.95	0.008817	0.001836	0.036441	0.039981	2.554581
24-03-16	201.60	0.03226	4001.36	0.002357	0.000926	0.031332	0.071313	2.196423
29-03-16	203.40	0.00893	3995.56	-0.001450	0.000390	0.008539	0.079852	0.598592
30-03-16	204.30	0.00442	3981.33	-0.003561	0.000092	0.004333	0.084184	0.303732
31-03-16	207.90	0.01762	3982.09	0.000191	0.000621	0.017000	0.101185	1.191751
01-04-16	222.30	0.06926	3996.38	0.003589	0.001100	0.068164	0.169349	4.778441
04-04-16	221.40	-0.00405	4008.50	0.003033	0.001021	-0.005070	0.164279	-0.355406
05-04-16	228.60	0.03252	4016.64	0.002031	0.000880	0.031640	0.195920	2.218034
06-04-16	228.60	0.00000	4030.00	0.003326	0.001063	-0.001063	0.194857	-0.074492
07-04-16	225.90	-0.01181	4054.29	0.006027	0.001443	-0.013254	0.181603	-0.929148
08-04-16	223.20	-0.01195	3999.33	-0.013556	-0.001316	-0.010636	0.170967	-0.745589
11-04-16	224.10	0.00403	3958.57	-0.010192	-0.000842	0.004875	0.175841	0.341713
12-04-16	223.20	-0.00402	3925.32	-0.008399	-0.000590	-0.003426	0.172415	-0.240192
13-04-16	224.10	0.00403	3909.47	-0.004038	0.000025	0.004007	0.176422	0.280922
14-04-16	224.10	0.00000	3901.45	-0.002051	0.000305	-0.000305	0.176118	-0.021369
15-04-16	225.00	0.00402	3920.00	0.004755	0.001264	0.002752	0.178870	0.192929
18-04-16	225.90	0.00400	3929.51	0.002426	0.000936	0.003064	0.181934	0.214807
19-04-16	226.80	0.00398	3934.58	0.001290	0.000776	0.003208	0.185142	0.224909
20-04-16	225.90	-0.00397	3939.50	0.001250	0.000770	-0.004738	0.180404	-0.332168
21-04-16	225.00	-0.00398	3968.75	0.007425	0.001640	-0.005624	0.174780	-0.394270
Date	DTB	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	181.82	-0.00498	3957.06	0.004784	0.000746	-0.005726	-0.005726	-0.294479
23-03-16	182.73	0.00500	3991.95	0.008817	0.000721	0.004284	-0.001442	0.220329
24-03-16	182.73	0.00000	4001.36	0.002357	0.000760	-0.000760	-0.002202	-0.039106

Date	NBK	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
29-03-16	182.73	0.00000	3995.56	-0.001450	0.000784	-0.000784	-0.002986	-0.040297
30-03-16	186.36	0.01987	3981.33	-0.003561	0.000796	0.019069	0.016083	0.980755
31-03-16	186.36	0.00000	3982.09	0.000191	0.000774	-0.000774	0.015310	-0.039784
01-04-16	188.18	0.00977	3996.38	0.003589	0.000753	0.009013	0.024323	0.463565
04-04-16	190.00	0.00967	4008.50	0.003033	0.000756	0.008915	0.033238	0.458533
05-04-16	187.27	-0.01437	4016.64	0.002031	0.000762	-0.015131	0.018108	-0.778203
06-04-16	187.27	0.00000	4030.00	0.003326	0.000754	-0.000754	0.017353	-0.038803
07-04-16	190.00	0.01458	4054.29	0.006027	0.000738	0.013840	0.031193	0.711809
08-04-16	192.73	0.01437	3999.33	-0.013556	0.000857	0.013511	0.044704	0.694910
11-04-16	200.00	0.03772	3958.57	-0.010192	0.000837	0.036884	0.081589	1.897037
12-04-16	194.55	-0.02725	3925.32	-0.008399	0.000826	-0.028076	0.053513	-1.443989
13-04-16	200.91	0.03269	3909.47	-0.004038	0.000799	0.031892	0.085405	1.640243
14-04-16	200.91	0.00000	3901.45	-0.002051	0.000787	-0.000787	0.084618	-0.040485
15-04-16	195.45	-0.02718	3920.00	0.004755	0.000746	-0.027922	0.056695	-1.436086
18-04-16	191.82	-0.01857	3929.51	0.002426	0.000760	-0.019332	0.037363	-0.994304
19-04-16	190.91	-0.00474	3934.58	0.001290	0.000767	-0.005511	0.031852	-0.283434
20-04-16	190.91	0.00000	3939.50	0.001250	0.000767	-0.000767	0.031085	-0.039452
21-04-16	191.82	0.00477	3968.75	0.007425	0.000730	0.004037	0.035122	0.207637
Date	NBK	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	14.95	-0.00333	3957.06	0.004784	0.007828	-0.011162	-0.011162	-0.505292
23-03-16	14.95	0.00000	3991.95	0.008817	0.013511	-0.013511	-0.024673	-0.611649
24-03-16	14.55	-0.02676	4001.36	0.002357	0.004409	-0.031165	-0.055838	-1.410850
29-03-16	14.45	-0.00687	3995.56	-0.001450	-0.000954	-0.005919	-0.061757	-0.267937
30-03-16	13.10	-0.09343	3981.33	-0.003561	-0.003930	-0.089496	-0.151252	-4.051475
31-03-16	12.95	-0.01145	3982.09	0.000191	0.001357	-0.012807	-0.164060	-0.579792
01-04-16	11.75	-0.09266	3996.38	0.003589	0.006144	-0.098808	-0.262868	-4.473057
04-04-16	12.15	0.03404	4008.50	0.003033	0.005361	0.028681	-0.234187	1.298410
05-04-16	10.95	-0.09877	4016.64	0.002031	0.003949	-0.102715	-0.336901	-4.649898
06-04-16	10.65	-0.02740	4030.00	0.003326	0.005775	-0.033172	-0.370073	-1.501688

Date	CFC	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
07-04-16	9.90	-0.07042	4054.29	0.006027	0.009580	-0.080003	-0.450076	-3.621732
08-04-16	10.00	0.01010	3999.33	-0.013556	-0.018012	0.028113	-0.421963	1.272670
11-04-16	10.50	0.05000	3958.57	-0.010192	-0.013272	0.063272	-0.358692	2.864311
12-04-16	10.00	-0.04762	3925.32	-0.008399	-0.010747	-0.036873	-0.395564	-1.669222
13-04-16	9.60	-0.04000	3909.47	-0.004038	-0.004601	-0.035399	-0.430963	-1.602507
14-04-16	9.35	-0.02604	3901.45	-0.002051	-0.001802	-0.024239	-0.455202	-1.097317
15-04-16	9.20	-0.01604	3920.00	0.004755	0.007787	-0.023830	-0.479032	-1.078784
18-04-16	9.95	0.08152	3929.51	0.002426	0.004506	0.077015	-0.402017	3.486494
19-04-16	9.70	-0.02513	3934.58	0.001290	0.002906	-0.028032	-0.430048	-1.268992
20-04-16	9.50	-0.02062	3939.50	0.001250	0.002850	-0.023468	-0.453517	-1.062419
21-04-16	9.05	-0.04737	3968.75	-0.007425	-0.011549	-0.058918	-0.512435	-2.667210

Date	CFC	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	88.00	0.00571	3957.06	0.004784	-0.002886	0.008601	0.008601	0.278369
23-03-16	87.00	-0.01136	3991.95	0.008817	0.006087	-0.005276	0.003324	-0.170773
24-03-16	85.00	-0.02299	4001.36	-0.002357	-0.000960	-0.022028	-0.018704	-0.712961
29-03-16	85.00	0.00000	3995.56	-0.001450	-0.002061	0.002061	-0.020764	0.066698
30-03-16	85.50	0.00588	3981.33	0.003561	0.003737	-0.002145	-0.018619	-0.069440
31-03-16	86.50	0.01170	3982.09	0.000191	0.000759	0.010937	-0.007682	0.353989
01-04-16	86.50	0.00000	3996.38	0.003589	0.001938	-0.001938	-0.005744	-0.062716
04-04-16	88.00	0.01734	4008.50	0.003033	0.001497	0.018838	0.013093	0.609699
05-04-16	89.50	0.01705	4016.64	0.002031	0.000701	0.017747	0.030840	0.574392
06-04-16	94.00	0.05028	4030.00	0.003326	0.001729	0.052009	0.082849	1.683319
07-04-16	94.00	0.00000	4054.29	0.006027	0.003873	-0.003873	0.086722	-0.125360
08-04-16	95.50	0.01596	3999.33	-0.013556	-0.011669	0.004288	0.091011	0.138799
11-04-16	96.00	0.00524	3958.57	-0.010192	-0.008999	-0.003763	0.087247	-0.121805
12-04-16	94.00	-0.02083	3925.32	-0.008399	-0.007577	-0.028410	0.058837	-0.919517
13-04-16	94.00	0.00000	3909.47	-0.004038	-0.004115	0.004115	0.054722	0.133187
14-04-16	95.50	0.01596	3901.45	-0.002051	-0.002538	0.013419	0.068141	0.434320

Date	NIC	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
15-04-16	95.00	-0.00524	3920.00	0.004755	-0.002863	0.002372	-0.065769	-0.076787
18-04-16	92.50	-0.02632	3929.51	0.002426	-0.001015	-0.025301	-0.040468	-0.818885
19-04-16	93.50	0.01081	3934.58	0.001290	-0.000114	0.010924	-0.051392	-0.353581
20-04-16	90.00	-0.03743	3939.50	0.001250	-0.000082	-0.037351	-0.014041	-1.208907
21-04-16	93.50	0.03889	3968.75	0.007425	-0.004982	0.043871	0.057913	1.419938

Date	NIC	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	40.00	-0.00621	3957.06	0.004784	0.002797	-0.009009	-0.009009	-0.434577
23-03-16	40.25	0.00625	3991.95	0.008817	0.005701	0.000549	-0.008460	0.026490
24-03-16	40.75	0.01242	4001.36	0.002357	0.001051	0.011372	0.002912	0.548573
29-03-16	41.50	0.01840	3995.56	-0.001450	-0.001690	0.020095	0.023007	0.969365
30-03-16	40.25	-0.03012	3981.33	-0.003561	-0.003210	-0.026910	-0.003904	-1.298157
31-03-16	40.50	0.00621	3982.09	0.000191	-0.000509	0.006720	0.002817	0.324175
01-04-16	40.25	-0.00617	3996.38	0.003589	0.001937	-0.008110	-0.005293	-0.391218
04-04-16	40.75	0.01242	4008.50	0.003033	0.001537	0.010885	0.005592	0.525115
05-04-16	40.50	-0.00613	4016.64	0.002031	0.000816	-0.006950	-0.001358	-0.335292
06-04-16	40.75	0.00617	4030.00	0.003326	0.001748	0.004425	0.003066	0.213449
07-04-16	40.50	-0.00613	4054.29	0.006027	0.003693	-0.009828	-0.006761	-0.474079
08-04-16	39.50	-0.02469	3999.33	-0.013556	-0.010405	-0.014287	-0.021048	-0.689182
11-04-16	37.25	-0.05696	3958.57	-0.010192	-0.007983	-0.048979	-0.070027	-2.362747
12-04-16	38.50	0.03356	3925.32	-0.008399	-0.006693	0.040250	-0.029777	1.941651
13-04-16	38.50	0.00000	3909.47	-0.004038	-0.003553	-0.003553	-0.026224	-0.171398
14-04-16	38.75	0.00649	3901.45	-0.002051	-0.002123	0.008617	-0.017607	0.415662
15-04-16	39.50	0.01935	3920.00	0.004755	0.002776	0.016578	-0.001029	0.799742
18-04-16	38.50	-0.02532	3929.51	0.002426	0.001100	-0.026417	-0.027445	-1.274334
19-04-16	38.50	0.00000	3934.58	0.001290	0.000283	-0.000283	-0.027728	-0.013628
20-04-16	38.50	0.00000	3939.50	0.001250	0.000254	-0.000254	-0.027982	-0.012246
21-04-16	38.50	0.00000	3968.75	0.007425	0.004699	-0.004699	-0.032680	-0.226659

Date	IM	R	NSE 20 SHARE INDEX	MR	(E)R	AR	CAR	AR t-test
22-03-16	99.00	0.03665	3957.06	0.004784	-0.002085	0.038734	0.038734	2.460666
23-03-16	96.50	-0.02525	3991.95	0.008817	-0.001227	-0.024026	0.014708	-1.526291
24-03-16	95.50	-0.01036	4001.36	0.002357	-0.002601	-0.007762	0.006947	-0.493078
29-03-16	96.50	0.01047	3995.56	-0.001450	-0.003411	0.013882	0.020829	0.881889
30-03-16	99.00	0.02591	3981.33	-0.003561	-0.003860	0.029767	0.050596	1.891009
31-03-16	100.00	0.01010	3982.09	0.000191	-0.003062	0.013163	0.063758	0.836203
01-04-16	99.00	-0.01000	3996.38	0.003589	-0.002339	-0.007661	0.056097	-0.486678
04-04-16	102.00	0.03030	4008.50	0.003033	-0.002457	0.032760	0.088858	2.081176
05-04-16	98.00	-0.03922	4016.64	0.002031	-0.002670	-0.036545	0.052313	-2.321617
06-04-16	101.00	0.03061	4030.00	0.003326	-0.002395	0.033007	0.085320	2.096854
07-04-16	100.00	-0.00990	4054.29	0.006027	-0.001820	-0.008081	0.077239	-0.513346
08-04-16	100.00	0.00000	3999.33	-0.013556	-0.005986	0.005986	0.083225	0.380296
11-04-16	100.00	0.00000	3958.57	-0.010192	-0.005271	0.005271	0.088496	0.334829
12-04-16	100.00	0.00000	3925.32	-0.008399	-0.004889	0.004889	0.093385	0.310608
13-04-16	100.00	0.00000	3909.47	-0.004038	-0.003961	0.003961	0.097347	0.251663
14-04-16	100.00	0.00000	3901.45	-0.002051	-0.003539	0.003539	0.100886	0.224817
15-04-16	100.00	0.00000	3920.00	0.004755	-0.002091	0.002091	0.102977	0.132836
18-04-16	100.00	0.00000	3929.51	0.002426	-0.002586	0.002586	0.105563	0.164306
19-04-16	98.00	-0.02000	3934.58	0.001290	-0.002828	-0.017172	0.088391	-1.090890
20-04-16	97.00	-0.01020	3939.50	0.001250	-0.002836	-0.007368	0.081024	-0.468044
21-04-16	98.50	0.01546	3968.75	0.007425	-0.001523	0.016987	0.098010	1.079131