EFFECT OF COMMERCIAL BANK FAILURE ANNOUNCEMENT ON STOCK RETURNS OF BANKS LISTED AT THE NAIROBI SECURITIES EXCHANGE

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OCTOBER, 2016

DECLARATION

I declare that this research project is my original work and has not been presented in any other university for a degree award or college for examination/academic purposes.

Signature: …… Date: ……

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

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I give thanks to Almighty God for giving me a gift of life and for grace to write this work.

DEDICATION

This project is dedicate to my family of the Rintaugus, the University of Nairobi and the school of business for the knowledge acquired and support accorded to me during my studies at the university.

LIST OF ABBREVIATIONS

AAR - Average Abnormal Return

ANOVA - Analysis of Variance

CAAR - Cumulative Average Abnormal Returns

CBK - Central Bank of Kenya

CLRM - Classical Linear Regression Model

EMH - Efficient Market hypothesis

MPT - Modern Portfolio Theory

NSE - Nairobi Security Exchange

OLS - Ordinary Least Squares

REITS - Real Estate Investment Trusts

SPSS - Statistical Package for Social Sciences

TABLE OF CONTENT

ABSTRACT

Outrageous financial occasions raise systemic hazard for the banking system. Systemic dangers can give huge negative impacts crosswise over numerous businesses and nations and are probably going to have far reaching negative results for bank representatives, clients, shareholders, and, at last, the economy. This study examined the impacts of bank failure announcement on the share prices of banks quoted at the NSE.

Event study methodology was embraced as the study was investigating the information content of bank failure announcement on stock returns of listed banks at the NSE. There are 11 commercial banks listed at the NSE and they formed the population of this study. Secondary data on the historical daily share price and the NSE 20share index was obtained for the period before and after the announcement of failure of banks at 14th August 2015, 13th October 2015 and 7th April 2016. Data was coded and entered into Excel and STATA for analysis.

` In the Dubai Bank failure, only National Bank abnormal returns were significant at 95% level of confidence. The t-test statistics shows that for all the three bank failure announcements average abnormal returns were statistically significant at 5% level of significance.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Banks operate based on the confidence of the customers and investors. Once the confidence is lost, depositors withdraw their deposits from the affected bank. This prompts other depositors and investors in other banks to question their solvency. Investors get the information about the failed bank and try to predict the solvency of the remaining banks and then immediately reflect it in the share prices of the banks. (Kaufman, 1994)

Kandrac, (2013) asserts that bank failures can lead to economic disruptions within the affected community through interruption of banking relationships, workers who may find themselves out of work and leave local depositors and creditors with losses hence reducing spending. Diamond and Dybig (1983) argues that depositors and creditors have an incentive to run because they do not know which bank will fail next

Swary (1986) pointed out that a bank failure in one bank may affect other banks in two ways. Bank run or domino effect, which means that a big bank failure leads the public to lose confidence in the banking system and causes less informed depositors to withdraw their money from even solvent banks. The second is the informational effect, which means that a bank failure reveals information about both regulatory policy and banks' asset quality and leads outside investors to re-evaluate other banks.

1.1.1 Bank Failure

News of a liquidity issue at one bank spreads rapidly and cause depositors at other banks to race to pull back their funds. Along these lines, an issue that exists at one bank

can spread to different banks. In the event that unconstrained, this procedure can develop into a bank panic, when depositors from various banks at the same time look to pull back their deposits. Synchronous bank runs, or a bank panic, is a case of a systemic hazard. A serious bank panic and the resulting unsteadiness in financial system in one nation would cross-country borders and unfavorably influence the financial systems of different nations. (Apostolik, Donohue, & Went, 2009)

Extreme financial events, raises systemic risk for the banking system. Systemic risks can pass on huge negative impacts crosswise over numerous businesses and nations and are probably going to have across the board negative outcomes for bank representatives, clients, shareholders, and, at last, the economy. A bank run on a solitary bank is a non-systemic hazard. In the event that an individual run is neither maintained a strategic distance from nor oversaw appropriately, its effects could get to be systemic and prompt to a panic among different banks. (Apostolik, Donohue, & Went, 2009)

In Kenya, poor corporate governance, mismanagement and insider lending to directors and shareholders have been the main causes of bank failures. The Continental Bank of Kenya Limited Continental Credit Finance Limited, Capital Finance Limited collapsed in 1986 and 1987 respectively. The Consolidated Bank of Kenya limited was formed in 1989 after merging of seven banks which had collapsed. Thirteen banks and further five banks collapsed in 1993 and between 1996 and 1999 respectively. Trust Bank, Euro Bank and Daima Bank collapsed in1999, 2003 and 2005 respectively. Recently, Dubai Bank Ltd, Imperial Bank and Chase bank were placed into receivership on 14th August 2015, 13th October 2015 and 7th April 2016 respectively.

1.1.2 Stock Returns

Lee (1998) stated that stock return is a monetary gain or loss on an investment which is highly sensitive to both fundamentals and expectations in a market. Securities exchanges around the world are basic in their economy as they give a road to raising assets, for exchanging securities including options, futures and swaps which give chances to investors to create returns (Alesina and Rodrik, 1994).

Money markets is influenced by various components among them the exercises of government policies and the economy's performance. Other factors include accessibility of different investment assets, change in composition of investors, activities in the economy and markets notions among different components (Mishkin and White Eugene, 2002).

The effective market hypothesis argued that adjustment in share's value is as a consequence of information about the market. The Weak-form efficiency is based on past information while the semi-strong form is based on the current and past information about the market and the strong form efficiency is based on current, past and inside information about the market and company (Fama, 1998).

1.1.3 Bank Failure and Stock Returns

The stock market's performance is affected by various factors such as the governments' activities and the performance of the economy in general. Several studies have reviewed the relationship between stock returns and bank failure.

Swary (1986) examined responses of other banks' stock price during the Continental Illinois crisis and found that the most significant effect was on those banks that had a huge debt and other nonperforming assets. The bank run effect hypothesis predicts the

negative impacts on other banks regardless of their financial conditions, while Swary's results inferred that the stock market reaction to the crisis depended on the financial condition of each bank. He concluded that his results supported the informational effect hypothesis rather than the bank run effect hypothesis. These results were supported by Jayanti and Whyte (1996), who studied the impact of the Continental Illinois Bank's failure on British and Canadian banks and determined that negative market reaction to that failure was related to the degree of Latin America debt exposure of those banks.

Chiou (1999) observed that after the declaration of Daiwa trading outrage in 1995, Japanese firms endured negative abnormal returns. Kang and Stulz (2000) observed that firms that relied on credits performed better when their lenders were fit and ineffectively when their lenders were performing gravely.

According to Yamori and Murakami (1999) firms that faced the negative market shock during the announcement are those who had the failed banks as their key banks. Djankov, Jindra, and Klapper (2001) explored the share trading system valuation impact of the bankruptcy of 31 commercial banks in East Asia on lending firms. According to the report, a bank's indebtedness declaration, before liquidation, controlled a huge negative securities exchange response. The two studies also extended Slovin, Sushka, and Polonchek (1993) work.

Securities market performance in an economy is considered by different parties among them financial specialists, capital markets, and government. Performance of securities market is influenced by different elements such as government's activities and the economy's performance. Different components that impact the perfpmance of the stock exchange incorporate, openness of option venture resources, change in organization of financial specialists, and market considerations among numerous (Siegel, 1998).

1.1.4 Nairobi Securities Exchange

The Nairobi Securities Exchange is a leading African Exchange founded in 1954. NSE plays a key role in the growth of Kenya's economy by encouraging savings and investment, as well as helping local and international companies access cost-effective capital. (NSE website, 2016)

The NSE has also grown to incorporate trade in financial securities such as bonds issued by the government as well as the private sectors and currently modalities of introducing microfinance stocks is in progress. The NSE has been structured into twelve main sectors' namely; Agricultural (7), Automobile and accessories (3), Banking (11), Commercial and services (10), Construction and allied (5), Energy and petroleum (5), Insurance (6), Investment (5), Investment services (1), Manufacturing and allied (10), Telecommunications and technology (1) and Real Estate Investment Trusts (REITS). As at March 2016, the NSE has 65 companies whose shares traded. The banking sector, which is the largest with 11 Banks listed on the NSE, was of focus on the study.

According to Fama (1970) where prices reflect only historical information it said to be weak-form efficiency, semi strong form, where prices adjust to all publicly available information and strong form, where prices reflect all available information, are the three categories of information market efficiency. Event studies by Kakiya (2010), Oyuga (2014) and Mohamed (2010) observed abnormal stock returns (positive and negative) on earnings announcements at the NSE. Announcements such as rights issue, earnings announcements, bank failure, etc. are publicly available thus we can conclude that the NSE market is semi strong efficient.

According to NSE, stocks of listed banks started recording declines, sending the industry into a low as the market reacted to the surprise closure of the banks. The

announcement of Dubai Bank Kenya Ltd., Imperial Bank Ltd. and Chase Bank Kenya Ltd. being placed in receivership, discouraged some investors from buying banks' stocks and bonds. A 4.8 billion shilling bond for Chase Bank was trading at the Nairobi Stock Exchange and 2 billion shillings debt was to commence trading the day Imperial bank was placed under receivership. National Bank Ltd., a listed bank at the NSE, had been forced to repeat its bad debt position and provisioning, and to fire five top managers over the imperfect disclosures. The listed lender was not placed under receivership because it posed a systemic risk to the banking sector due to its market share and it was also the banker for all governmental departments.

1.2 Research Problem

The theory of efficient market hypothesis states that all information that is publicly available is reflected in security prices. Earlier studies support the semi strong form of market hypothesis that stock prices change speedily to the announcement of new information and investors are typically not able to derive above average returns from acting on important new information. Further, an announcement of bank failure has been shown to affect share prices of other banks. Contagion effect was confirmed by Glesecke and Weber (2002) as stock prices of remaining banks declined in reaction to failure of a bank.

Kenya has faced banking crisis since 1986 concluding in major bank failure following the crises of 1986-1989, 1993/1994, 1998, 2003, 2005. Recently, Dubai Bank Ltd, Imperial Bank and Chase bank were placed into receivership on 14th August 2015, 13th October 2015 and 7th April 2016 respectively.

Earlier research around the world suggest that after a bank failure, the share prices of remaining banks react, (Cornell and Shapiro 1986, Musumeui and Sinkey Jr. 1990,

Karatiath and Mynatt and Smith, 1991). Swary (1986) implied that the stock market reaction to the crisis depended on the financial condition of each bank and was supported by Jayanti and Whyte (1996). Wall and Peterson (1990) verified Swary's results and concluded that there is little evidence to substantiate concern about bank runs. Further, Aharony and Swary (1983) did not find evidence consistent with the pure contagion effect. Therefore, these studies suggest inconclusive and contradictory findings on the relationship between bank failure and quoted banks' stock returns.

In Kenya, studies have been carried out in the field of bank failure, Cheserek (2007) examines the determinants of bank failure over a period of five years and used capital adequacy, asset quality and earnings after tax and Matu (2001) studied the predictability of bank failure. Owino (2005), in a study designed to establish existence of contagion effect, analysis using a mean return on share prices of listed banks over the event window, revealed that on the average, stock returns of quoted banks decline with collapse of a commercial bank. This study sought to investigate its effect on the share prices of listed banks using a standard event study methodology as explained by MacKinlay (1997). The research question guiding the study was: What is the effect of bank failure announcement on the banks' share prices listed at the NSE?

1.3 Research Objectives

The objective was to investigate the effect of bank failure announcement on share prices of banks listed on NSE

1.4 Value of the Study

It will contribute to the existing literature in the area of bank failure announcement and the performance of listed banks at NSE. The findings of the study will be important to future scholars and academicians because it will serve as a source of reference on the

subject besides providing suggestions on areas requiring future study in as far as the performance of stocks at the NSE is concerned.

The findings of this study will also be important to investors investing at the Nairobi Securities Exchange because it will provide vital information for consideration during bank failure. It will provide vital information to investors which they can use to judge whether to buy or sell their shares at the NSE during the bank failure period. The findings of this study will also be important to managers at the Nairobi Securities Exchange in understanding the effects of bank failure announcement on the stock returns for the listed banks.

This will help them institute measures required to stabilize the market and avoid abnormal performances at the market during such periods. The findings of this study will also be important to government policy makers because it will inform their policy formulation and implementation regarding the management of the security exchange market during bank failure to ensure capital market stability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter will review supporting theories and the work by other scholars on the subjects of stock market performance during bank failure announcement. In particular, section 2.2 discusses the theoretical literature. Section 2.3 discusses the determinants of stock returns, section 2.4 presents the empirical literature, section 2.5 discusses the summary of the literature and section 2.6 presents the conceptual framework.

2.2 Theoretical Literature

This section reviewed theories that guided this study. Specifically, it reviewed theories explaining stock market performance and how it can vary. The section specifically reviewed two theories including efficient market hypothesis, and prospect theory.

2.2.1 Efficient Market Hypothesis

An efficient market, according to Fama (1965), is a market where securities' prices reflect all information accessible. Therefore, when information on security's value hits the market, the price react and integrate the information rapidly and appropriately, and the price should not underreact or overreact to specific news announcements.

He further classified information efficiency into three categorizations based on the information type that prices in those markets reflect. According to Fama (1970), in a weak-form all past information is reflected on market stock prices. This suggests that prices successive price differences are independent. Therefore, if a market is weakly

efficient it is impossible for an investor to make abnormal returns using the historical share prices.

The semi-strong form efficiency asserts that security prices reflect all publicly information available. It is impossible for technical or fundamental analysts through exploiting public information to beat the market. A strong-form efficient reflect all past, public and private information such that if some investors have monopolistic access to inside information, they cannot make abnormal returns.

The weak-form and semi-strong forms of the EMH have not established constant acceptance. DeBondt and Thaler (1985) found that securities with high long-term past returns tend to have low future returns and vice versa. Ball and Brown (1968) also noted continuing anomalies recognized in the finance literature that share prices react to earnings announcement for almost a year after their announcement. Share prices of firms facing positive earnings announcement shocks shift upward and vice versa. Post-earnings-announcement drift was supported by many studies over different time periods and in different economies.

Further, Rolf Banz (1981) found that returns on small and large firms were too large and low, respectively, to be justified by the Capital Asset Pricing Model. Following research indicated the January-effect where most of the difference in returns between small and large firms happened in the month of January.

This theory provides the basic theoretical contextual for this study. This study examined how the investors in listed banks reacted to announcement of bank failure. Based on Fama, (1970) findings, when the market is semi-strong efficient, the change of prices to the event should be immediate and there are no strategies can be used to make abnormal returns. However, if analytically abnormal returns found around the event

window can be used to beat the market, then the bank failure announcement could be challenging market efficiency.

2.2.2 Prospect Theory

Tversky and Kanheman (1979) showed how people manage risk and uncertainty by way of developing the Prospect Theory. The theory explain the seeming uniformity in human behaviors when evaluating risk under ambiguity and assumes that investors are not constantly risk-averse but are risk-averse in gains and risk-takers in losses. Tversky and Kanheman (1974), observed that investors place more weight on alleged results than the expected ones.

People's choices are influenced by framing effect which talks about the way a challenge is postured to the decision maker and their mental accounting of that difficult. The Prospect Theory's value maximization function is distinct from the MPT's value maximization function. Unlike in MPT where wealth maximization is over the final wealth position, in prospect theory, it is between gains and losses (Markowitz, 1952). Persons make diverse choices in circumstances with same concluding wealth levels. The reference point for measuring gains and losses value maximization is the status quo and variations are not measured against it in absolute terms but in comparative terms.

2.3 Determinants of stock returns

Economists believe that prices of commodities are determined by the forces of supply and demand in a free economy. In the Securities market, the share prices are determined by factors which include dividend per share, earnings per share, book value of the firm, dividend cover and price earnings ratio (Gompers, Ishii & Metrick, 2003).

The main factor that impact the price of a share is the demand and supply factors such that if many people start purchasing a particular share then its demand rises and so the prices and if people start selling the share then its demand goes down and prices go down. Government policies, performance of firms and industry and potentials have an impact on the demand behavior of the investor. The share price is therefore determined by both Macro and Micro Economic factors.

2.3.1 Macro Economic Factors

The correlation between macroeconomic variables and stock prices was confirmed by Miller and Modigliani (1961) as proposed in the Dividend Discount Model (DDM). According to the model, the present value of all future expected cash flows is the price of a security. Therefore, the drivers of stock prices are the required rate of return and expected cash flows. According to Arnott and Hansen,(1989) and Tessaromatis, (2003) economic factors impact both the required rate of return and expected future cash flow and thus affecting the share price.

According to Fama and Gibbon (1982) there is a contrariwise relationship between expected returns on bills and anticipated inflation rates which was explained by the positive relationship between expected real returns on financial assets and real activity. Hamao (1988) used the multi-factor APT framework and showed that stock returns were significantly affected by inflation. Fama (1981) observed a strong positive relationship upon examination on the relationships between stock prices, inflation, real activity and money.

2.3.2 Micro Economic Factors

Micro being factors that affecting demand and supply conditions which can be affected by company's performance compared to other companies in the industry. According to Fama & MacBeth (1973) investigation, there is a positive relationship between stock returns and the measure of risk which is the beta. Basu (1977) found that shares with low (high) P/E ratios yeild higher (lower) share returns.

According to Rosenberg (1985) there is a positive correlation between stock returns and the ratio of a book value of common equity to its market value in the US market. Further according to Bhandari (1988) there is a positive correlation between expected common stock returns and the ratio of debt to equity and firm size. Changes in market proxy and estimation technique did not affect the relationship meaning that the premium associated with the ratio is not only risk premium.

2.4 Empirical Literature

Kaufman (1994) examined the contagion risk in the financial system. Several studies such as Aharony and Swary, (1983); Swary, (1986); Peavy and Hempel, (1988) investigated the degree to which shareholders of surviving banks are affected by a bank failure through stock returns. They used stock market data to scrutinize the performance of the shares after the announcement. Negative abnormal returns are an evidence for contagion risk. Kaufman found only some support for the firm specific contagion and not industry specific contagion in these empirical studies. News of difficulties in one bank discloses information about other banks but not doesn't cause additional failures.

Peavy and Hempel, (1988) Penn Square Bank's failure effect on three groups of bank holding companies' the daily returns using standard event methodology. Those institutions with Penn Square loan participations experienced repeated failures in daily returns during the 75-day event period. Further, banks in the same economic area had less severe but constantly deteriorating returns while those away from the region were insignificantly affected. They concluded that the market observed the failure as an independent event which insignificantly affected banks away from region.

Aharony and Swary, (1983) investigated contagion risk in the financial system after a bank failure caused by fraud. They found that depositor runs depend on the exposure level with the failed bank. Further, they observed that announcement of news has a disrupting effect on deposits. Lastly, they found that unsettled interbank claims strengthen the effect of the first shock. Therefore, the results helped conclude that financial linkages or exposures as important for contagion and policy formulation.

Pettway (1980) found that stock return anticipated supervisory bank examinations that occasioned in bank closures by as much as 38 weeks. Pettway and Sinkey (1980) traced

excess returns three years before failure and one year before carrying out of the examination that unearth the problem before failure announcement.

Curry, Fissel, and Elmer (2003) focused on bank failures, found in recent work important deteriorations in abnormal returns, stock prices, and returns' volatility prior to regulator-assigned CAMELS ratings to the problem-bank level (3, 4, or 5) two years before the rating changes.

Using event-study methodology, Berger and Davies (1998) found that the investors anticipates changes in the rating of banks by the regulators but act on the downgrades. Berger, Davies, and Flannery (2000) found that watchdogs get facts faster than other rating agencies and investors but their analysis and forecasting on performance is less correct.

Owino (2005) in study to determine the effects of a commercial bank failure on stock returns of quoted banks. Determining stock returns of the quoted banks during the event window and comparing it with the returns 90 days before the event. The study was designed to establish existence of contagion effect, analysis revealed that on the average, stock returns of quoted banks decrease with collapse of a commercial bank.

Cheserek (2007) examined the determinants of bank failure in Kenya using capital adequacy, asset quality and earnings after tax and observed that bank failure had no significant correlation with earnings after tax, total loans, total equity and return on assets. Conversely, bank failure had a significant relationship with capital adequacy, asset quality and total assets.

Ogunmuyiwa (2010) in a study on sentiment of investors, stock market liquidity and economic growth in Nigeria, revealed that notion of investors and liquidity of stock market are important ratios for stock market growth and development. The researcher

concluded that investor's sentiment can affect capital market activities. Therefore, opinion formers and investors may receive wrong signal from a bank failure announcement causing term pessimism in the stock market.

Kakiya (2010), investigated the effect of announcements on stock returns, using 5 day moving average to observe the trend of stock returns following earnings announcement, daily market adjusted abnormal and cumulative abnormal returns observed that trends in stock returns were dependent on event announcement. Oyuga (2014) investigated whether the earnings announcements generated abnormal returns for firms listed at the NSE and observed negative abnormal returns during post and pre earnings announcements

2.5 Summary of Literature Review

Swary (1983), Swary (1986), Peavy and Hempel (1988) examined the post announcement share performance using stock market data and viewed negative abnormal returns as an indicator for contagion effects. Swary (1986) results were supported by Jayanti and Whyte (1996). Wall and Peterson (1990) verified Swary's results and concluded that there is little evidence to substantiate concern about bank runs. Further, Aharony and Swary (1983) did not find evidence consistent with the pure contagion effect. Therefore these studies suggest inconclusive and contradictory findings on the relationship between bank failure and stock returns of listed commercial banks.

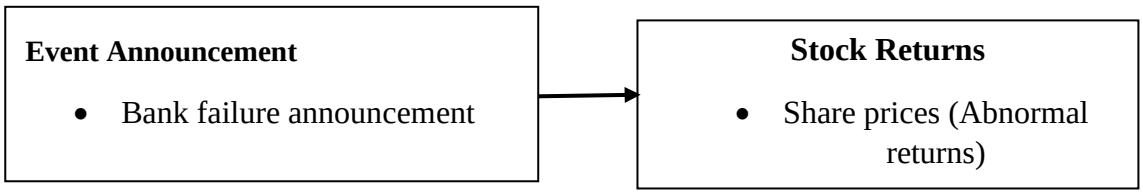
Although limited literature exists locally on effect of bank failure and stock returns at the NSE, event studies investigating on how stock returns at NSE react to announcements such as Kakiya (2010) and Oyuga (2014). Cheserek (2007) examined the determinants of bank failure in Kenya using capital adequacy, asset quality and

earnings after tax. Owino (2005), in a study designed to establish existence of contagion effect, analysis using a mean return on share prices of listed banks over the event window, revealed that on the average, stock returns of quoted banks decline with collapse of a commercial bank. From the literature reviewed above, it was evident that limited research has been done on the effect of bank failure announcement on stock returns of listed banks at Nairobi Securities Exchange. This study therefore sought to fill this research gap using standard event study methodology.

2.6 Conceptual Framework

The objective of the study was to examine the consequence of bank failure on stock returns of listed banks at NSE. Stock returns are the dependent variable and Bank failure announcement are the independent variables.

Independent variables **Dependent variable**



The model uses an event announcement which is bank failure announcement as the independent variable and seeks to investigate the effect of the announcement on the stock returns of listed banks which are the dependent variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the population of study, the basis of sampling, the data collection instruments as well as the data analysis techniques to be used to achieve the objectives of study. In particular, section 3.2 discusses research design. Section 3.3 discusses the population and sample, section 3.4 presents the data collection and sources, section 3.5 discusses the diagnostic tests and section 3.6 presents the data analysis.

3.2 Research Design

The study assumed a standard event study methodology. It's a statistical examination of whether there is a significant reaction in stock returns to events that is theorized to affect market values of listed firms (Armitage, 1995). The event study design was selected because the study was be concerned with establishing the information content of bank failure announcement on stock return of quoted banks at the NSE.

The event that affects the market value of a firm which in turn affects the returns on a security may be within the control of the firm or the event may be within or outside the firm's control, such as the event of a bank failure, or an announcement of a regulatory ruling, that may affect future operations of the firm in some way (Armitage, 1995).

3.3 Population and Sample

According to Adèr, et al., (2008), sampling is concerned with the choice of specific observations with an aim of yielding information about a population of concern particularly for the purposes of statistical interpretations. Each of the observable

measures is considered to measure one or more properties of an observable entity that has been itemized to distinguish the objects.

For this study, commercial banks listed at the NSE as at 2015-2016 were the target population. There are 11 banks listed at the NSE as at 2016 and they all made the population for the study.

The sampling method that was engaged in the study was a census with a clear preference on this based on the fact that the population sample is small. In this study, the sample consisted of all 11 banks listed at NSE.

3.5 Data Collection

According to Sekaran, (2000), data collection is the process of gathering information about a situation utilizing data collection instruments. Secondary sources of data was used for the study.

Secondary data, which was daily share prices for the listed banks at the Nairobi Securities Exchange was used. Daily individual stock prices as well as the NSE 20 share index are tabulated and stored by the NSE. For testing purposes, the estimation window consisted of 120 days (-60…+60) and the event window consisted of eleven (11) days (days -5…., 0 day of bank failure announcement, ….+5) around each bank failure date.

Data to be obtained from the NSE covered the event dates as 14th August 2015, 13th October 2015 and 7th April 2016.

3.6 Diagnostic Tests

Joppe (2009) explained that in quantitative research, validity defines whether the research accurately measures what it is planned to measure. According to Mugenda &

Mugenda, (2003) reliability is a measure of how the research instrument produces consistent results after repeated trials.

Classical linear regression model (CLRM) assumptions showed that using the ordinary least squares (OLS) estimators possessed desired properties for hypothesis tests to be validly and reliably carried out.

3.6.1 Heteroscedasticity

Heteroscedasticity is a statistical problem that occurs when the variances of the error term vary across observations. It causes OLS estimators to be no longer of minimum variance of all linear estimators. The study used the Breusch -pagan – Godfrey test to test the hypothesis

H_0 = Heteroscedasticity not present

H_1 = Heteroscedasticity present

3.6.2 Autocorrelation

Autocorrelation is a problem which occurs when the error terms are correlated in a correctly specified model. Durbin Watson d test was used to test for auto correlation. This was done by testing the hypothesis;

H_0: $P = 0$

H_1: $P \neq 0$

Where P is coefficient of autocorrelation

3.7 Data Analysis

STATA and EXCEL were used for analysis after the collected data was coded and entered.

MacKinlay (1997) defined an event study methodology to involve the steps of identification of the event of interest, followed by definition of the event window then selection of the sample set of firms to be included in the analysis which then is followed by prediction of normal returns during the estimation window. Then the ARs are estimated within the event window and finally testing whether the abnormal return is statistically different from zero.

The market model to apply was;

$$\mathbf{R_{it}=\alpha_i+\beta R_{mt}+} e$$

Where

R_{it}= return of stock

R_{mt}= market return

α and β= coefficients

Market model was used to measure securities' abnormal returns during the event window.

$$\mathbf{AR_{it}=R_{it}-(\alpha_i+\beta R_{mt})}$$

Where

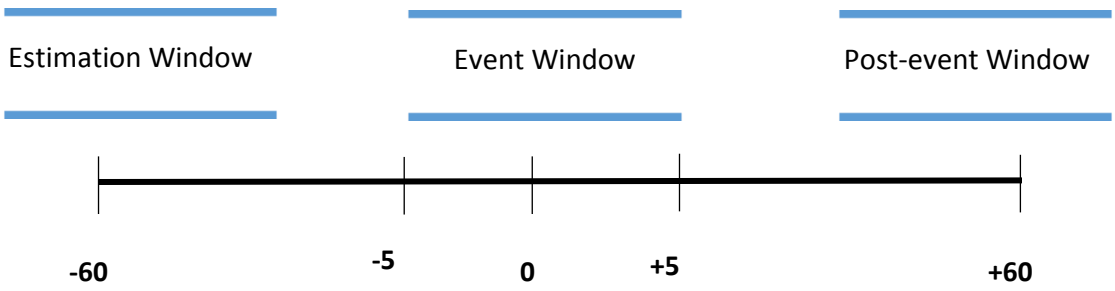
AR_{it}= abnormal returns of stock

R_{it}= return of stock

R_{mt}= market return

α and β= coeficients

The event window and the estimation window were:



Abnormal returns of individual securities (AR_{it}) were totaled for each period for the three events. AARs and the CAARs for the securities estimated by aggregating abnormal returns over observation of events and event windows.

Statistical significance of the AARs was measured using the test statistics and the CAARS estimated during the event window at a level of confidence of 95%. The study was tested at 95% level of confidence or 5% level of significance. When t-statistic value was less than the tabulated t value at 95% confidence level, then conclusion was that the model is significant.

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, section 4.2 discusses summary statistics, 4.3 discusses the empirical model, section 4.4 presents the discussion and section 4.5 presents the summary.

4.2 Summary Statistics

Summary Statistics for Abnormal returns

	Mean	**StdD**	**Median**
ARDubai	0.001166	0.022074	0.000824
ARImperial	-0.00156	0.021438	-0.00134
ARChase	-0.00284	0.025418	-0.00099

Source; Research Findings

The variables' descriptive statistics are the mean, the standard deviation and the median for the Dubai Bank, Imperial Bank and Chase Bank failure events abnormal returns (AR). For the Dubai Bank failure event ARs, the standard error is 0.022074. Therefore, it can be inferred that the sample and population mean are close. Equally, the standard errors for the Imperial bank and Chase bank event abnormal returns (AR) were 0.021438 and 0.025418 respectively, which are relatively small inferring that the sample and population mean are close.

4.3 Estimated or Empirical Model

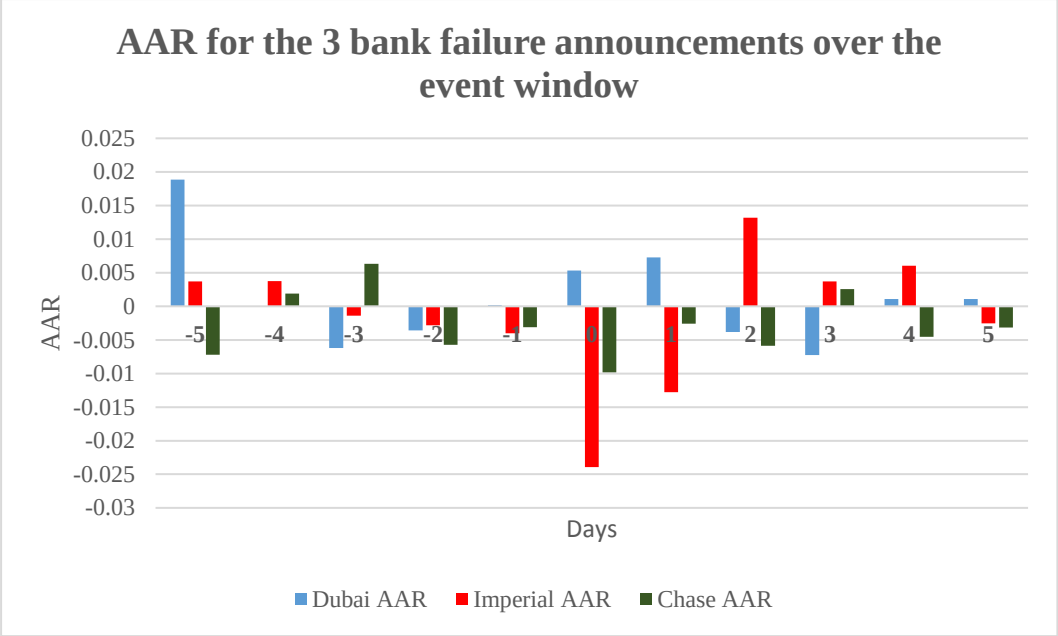
Appendix 2 presents the Abnormal Return from 5 days before and 5 days after announcements of bank failure. $P_{it} - P_{it-1} / P_{it-1}$ was used to determine the actual daily positive/negative abnormal returns (R_{it}). Also $I_{it} - I_{it-1}/I_{it-1}$ to calculate daily expected market returns (Rmt). $AR_{it}=R_{it}-(\alpha_i+\beta R_{mt})$ calculated the positive or negative abnormal returns.

4.3.1 T – test on Abnormal Returns

The abnormal returns of listed banks were arranged in the form of window of 5 days before the event day and 5 days after the event day showing the announcement date as day zero. T-statistic ware calculated for the abnormal returns for the 11 listed banks to establish the significance of the abnormal returns at 5% level of significance. Appendix 2 presents the results of the ARs t-test on each bank for the three bank failure announcements.

4.3.2 T – test on Average Abnormal Returns

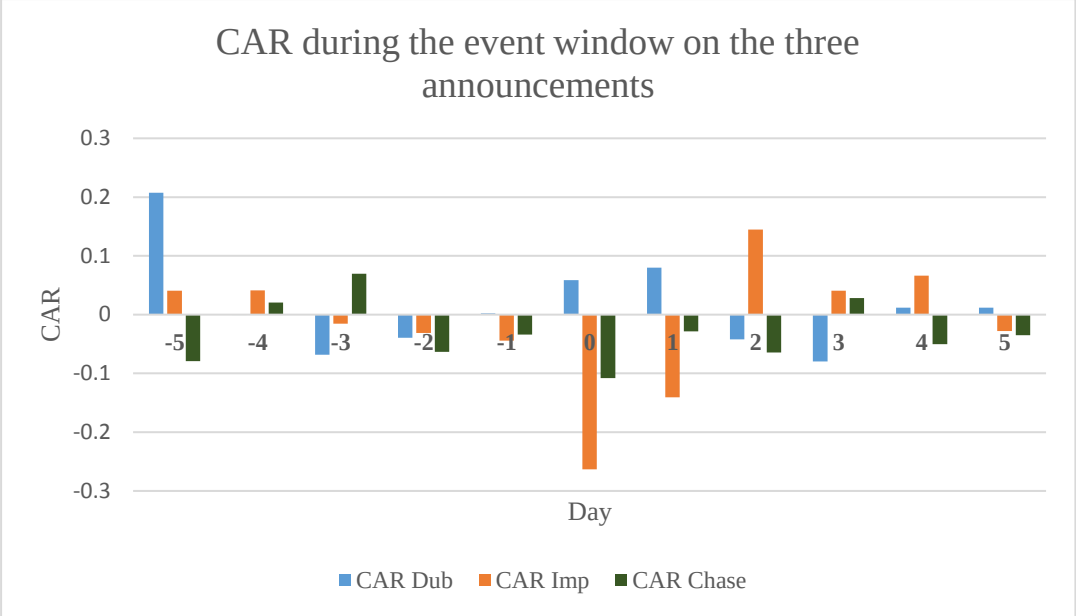
Average abnormal return were calculated across securities and T-statistic were calculated for the average abnormal returns over the 3 event windows to establish the significance of the at 5% level of significance.



For the Dubai bank failure, bank failure AARs, on the event day was 0.0053, for Imperial bank failure announcement AAR was -0.0239and for Chase bank failure announcement AAR was -0.00982. Appendix shows the results for the t-test on the average abnormal returns over the event windows.

4.3.2 T – test on Cumulative Average Abnormal Returns

Cumulative Average abnormal return were calculated for the three announcements and T-statistic were calculated for the CAARs during the 3 events to establish the significance of the at 5% level of significance.



For the Dubai bank failure, bank failure cumulative AR, on the event day was 0.0586, for Imperial bank failure announcement CAR, was -0.2631 and for Chase bank failure announcement CAR, was -0.1080. Appendix presents the results for the t-test on the cumulative average abnormal returns.

4.4 Discussion

The t-test statistics for the Dubai bank failure, Imperial bank failure and Chase bank failure announcement cumulative abnormal returns (CAR) were calculated as 0.5249, -0.5185 and -1.9886 respectively. Since the tabulated t value at 5% level of significance is 1.96, which is more than the t-statistic for Dubai bank failure and Imperial bank the null hypothesis is rejected. However, for Chase bank failure announcement cumulative abnormal returns (CAR), the t-statistic is more than the tabulated t and therefore, cannot reject the null hypothesis.

According to the t-test statistics for the CAR, the Dubai bank failure announcement and Imperial bank failure were found to be insignificant while Chase bank failure announcement were found to be significant at 95% level of confidence. This shows that

the stock returns of listed banks for the failure of Chase bank failure deviated from their means significantly while those for the Dubai bank failure and Imperial bank failure were insignificant.

These findings suggest that investors in the listed banks at the Nairobi stock exchange perceived the Dubai bank failure and Imperial bank failure events as insignificant and hence recovered and steadied instantaneously, hence the insignificance of CAAR. The findings suggest that the NSE stock returns of listed banks for the Chase bank failure announcement deviated significantly from their means.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Introduction

This chapter presents the summary and conclusions of the study with reference to the study objectives. In particular, section 5.2 discusses summary of the study, 5.3 discusses the conclusion, section 5.4 presents the limitation of the study and section 5.5 presents the recommendation for further research.

5.2 Summary of the Study

The study finds that for all the three events (bank failure announcements), in Dubai bank failure and Imperial bank failure events the abnormal returns change in homogeneity with the normal returns while in the Chase Bank failure event, the abnormal returns move in same direction with the normal returns. In the Dubai Bank failure, only National Bank abnormal returns were significant at 95% level of confidence.

The t-test statistic displays that for all the three bank failure announcements average abnormal returns were statistically significant at 95% level of confidence. This finding may suggest that stocks of banks listed at the Nairobi stock exchange deviated significantly from their means.

5.3 Conclusion

The study concludes that market reaction to bank failure announcement depends on the bank failure announced hand and therefore, the information derived from a bank failure is significant for valuing the securities in the markets. Therefore, bank failure

announcement affects the performance of the stock returns of listed banks and hence shareholders and investors and other stakeholders should consider the effects of a bank failure announcement. The average abnormal returns demonstrated significance at the day of the announcement during the three bank failure announcement.

5.4 Limitation of the Study

Market anomalies, for instance, the Monday-effect and weekend-effect may have influenced the performance of the market during the bank failures period and the same were not incorporated when approximating returns.

Drivers of value, for example, Cash flows, growth opportunities and dividend payouts which are some of the factors that influence the market returns of a firm were not incorporated when approximating the returns.

Performance of the Macro economy such as foreign exchange rate, inflation and world news might have also weakened the outcome of these events.

5.5 Recommendations for Further Research

Auxiliary studies could be done to examine stock returns' performance in non-bank failure periods and compare performance with the periods prior to bank failure announcement as it is in this study.

Similar studies on other neighboring countries investigate if their bank failure announcement yields negative abnormal returns, and compare with relationship in other parts of the world would be interesting.

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APPENDICES

Appendix 1: Data collection instrument

Data collection instrument to be used for the study will be as following;

COMPANY NAME		
DAILY SHARE PRICES BETWEEN THE EVENT WINDOW		
Date	**Share price**	**Market Index**
t (-30)		
t (0)		
t (+30)		

Appendix 2: T-test for Abnormal returns

Dubai Bank Failure announcement																																		
	BBK			CFC			COOP			DTBK			EQTY			HFCK			I&M			KCB			NBK			NIC			SCBK		
Day	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf	AR	t test	signf
-5	0.0071	0.7551	No	-0.0489	-1.9476	No	0.0023	0.2050	No	**0.0019**	0.2114	No	0.0607	3.7737	Yes	0.0700	3.1145	Yes	-0.0019	-0.1087	No	0.0722	4.9003	Yes	0.0382	1.0179	No	0.0087	0.5849	No	-0.0030	-0.1493	No
-4	-0.0001	-0.0153	No	-0.0045	-0.1798	No	-0.0032	-0.2869	No	**-0.0177**	-1.9701	Yes	-0.0331	-2.0602	Yes	0.0188	0.8370	No	-0.0022	-0.1216	No	0.0066	0.4445	No	0.0259	0.6913	No	-0.0017	-0.1120	No	0.0105	0.5171	No
-3	0.0125	1.3204	No	0.0018	0.0701	No	-0.0242	-2.1499	Yes	**0.0222**	2.4629	Yes	-0.0057	-0.3552	No	-0.0055	-0.2431	No	0.0002	0.0135	No	0.0026	0.1766	No	-0.0572	-1.5256	No	0.0053	0.3546	No	-0.0204	-1.0084	No
-2	0.0195	2.0608	Yes	-0.0678	-2.7012	Yes	0.0080	0.7050	No	**-0.0120**	-1.3378	No	-0.0063	-0.3945	No	0.0092	0.4083	No	0.0043	0.2412	No	-0.0107	-0.7225	No	0.0032	0.0844	No	0.0085	0.5680	No	0.0050	0.2487	No
-1	-0.0021	-0.2230	No	0.0219	0.8725	No	0.0058	0.5178	No	**0.0025**	0.2795	No	-0.0115	-0.7163	No	0.0048	0.2136	No	0.0031	0.1731	No	-0.0063	-0.4289	No	-0.0144	-0.3848	No	-0.0025	-0.1690	No	0.0006	0.0295	No
0	-0.0159	-1.6817	No	-0.0114	-0.4552	No	-0.0099	-0.8810	No	**0.0075**	0.8281	No	-0.0010	-0.0629	No	0.0143	0.6379	No	0.0028	0.1560	No	-0.0118	-0.7973	No	0.0824	2.1988	Yes	0.0022	0.1504	No	-0.0005	-0.0256	No
1	-0.0068	-0.7142	No	0.0475	1.8895	No	0.0012	0.1056	No	**-0.0026**	-0.2871	No	-0.0048	-0.3017	No	0.0319	1.4211	No	0.0207	1.1574	No	-0.0019	-0.1292	No	-0.0322	-0.8590	No	-0.0085	-0.5730	No	0.0354	1.7480	No
2	-0.0248	-2.6225	Yes	-0.0313	-1.2465	No	0.0037	0.3278	No	**0.0077**	0.8556	No	0.0014	0.0901	No	0.0212	0.9440	No	0.0141	0.7866	No	-0.0006	-0.0375	No	-0.0032	-0.0861	No	0.0038	0.2578	No	-0.0343	-1.6963	No
3	-0.0014	-0.1449	No	0.0002	0.0061	No	0.0025	0.2180	No	**0.0026**	0.2931	No	-0.0195	-1.2160	No	-0.0118	-0.5245	No	0.0133	0.7414	No	-0.0062	-0.4231	No	-0.0490	-1.3064	No	0.0033	0.2196	No	-0.0137	-0.6749	No
4	-0.0002	-0.0223	No	0.0168	0.6687	No	0.0072	0.6370	No	**0.0028**	0.3102	No	-0.0088	-0.5449	No	-0.0386	-1.7163	No	0.0508	2.8374	Yes	0.0050	0.3386	No	-0.0019	-0.0511	No	-0.0008	-0.0541	No	-0.0203	-1.0038	No
5	-0.0045	-0.4739	No	0.0132	0.5264	No	0.0008	0.0731	No	**0.0027**	0.3004	No	0.0066	0.4120	No	0.0212	0.9434	No	0.0046	0.2592	No	-0.0061	-0.4139	No	-0.0028	-0.0739	No	0.0037	0.2479	No	-0.0276	-1.3646	No
Imperial Bank Failure Announcement																																		
-5	-0.0013	-0.1420	No	0.0070	0.2803	No	-0.0192	-1.7060	No	**0.0027**	0.2977	No	0.0058	0.3618	No	0.0096	0.4287	No	0.0141	0.7850	No	0.0215	1.4591	No	0.0007	0.0195	No	-0.0142	-0.9535	No	0.0142	0.7013	No
-4	-0.0034	-0.3578	No	0.0020	0.0792	No	0.0278	2.4634	Yes	**0.0024**	0.2681	No	-0.0088	-0.5470	No	0.0018	0.0787	No	-0.0073	-0.4057	No	0.0035	0.2402	No	0.0393	1.0471	No	0.0078	0.5262	No	-0.0240	-1.1871	No
-3	-0.0084	-0.8857	No	0.0054	0.2147	No	-0.0233	-2.0648	Yes	**0.0028**	0.3085	No	0.0147	0.9153	No	0.0240	1.0680	No	-0.0044	-0.2437	No	-0.0006	-0.0422	No	-0.0159	-0.4240	No	-0.0138	-0.9255	No	0.0040	0.1982	No
-2	-0.0050	-0.5327	No	0.0086	0.3424	No	-0.0050	-0.4393	No	**0.0027**	0.3021	No	0.0071	0.4447	No	0.0222	0.9857	No	-0.0146	-0.8176	No	-0.0120	-0.8174	No	-0.0296	-0.7903	No	0.0099	0.6637	No	-0.0154	-0.7632	No
-1	-0.0208	-2.1938	Yes	0.0094	0.3732	No	-0.0134	-1.1859	No	**-0.0023**	-0.2513	No	-0.0033	-0.2056	No	0.0338	1.5054	No	-0.0446	-2.4882	Yes	-0.0123	-0.8317	No	0.0177	0.4735	No	-0.0021	-0.1436	No	-0.0063	-0.3121	No
0	-0.0021	-0.2185	No	-0.0068	-0.2708	No	-0.0242	-2.1490	Yes	**-0.0225**	-2.5013	Yes	-0.0190	-1.1813	No	-0.0363	-1.6169	No	0.0039	0.2168	No	-0.0188	-1.2770	No	-0.0217	-0.5790	No	-0.0640	-4.2927	Yes	-0.0516	-2.5490	Yes
1	-0.0238	-2.5092	Yes	0.0286	1.1378	No	-0.0244	-2.1652	Yes	**-0.0017**	-0.1835	No	-0.0467	-2.9042	Yes	-0.0120	-0.5352	No	0.0529	2.9522	Yes	-0.0396	-2.6881	Yes	-0.0187	-0.4979	No	-0.0565	-3.7907	Yes	0.0010	0.0507	No
2	-0.0068	-0.7174	No	0.0251	1.0000	No	0.0295	2.6174	Yes	**-0.0130**	-1.4422	No	0.0268	1.6702	No	0.0062	0.2751	No	0.0035	0.1946	No	0.0290	1.9644	Yes	-0.0121	-0.3226	No	0.0797	5.3482	Yes	-0.0230	-1.1362	No
3	0.0069	0.7333	No	-0.0196	-0.7812	No	0.0047	0.4172	No	**0.0074**	0.8236	No	-0.0122	-0.7588	No	-0.0060	-0.2678	No	0.0001	0.0049	No	0.0147	0.9939	No	-0.0040	-0.1074	No	0.0131	0.8789	No	0.0358	1.7674	No
4	0.0198	2.0902	Yes	-0.0069	-0.2729	No	0.0203	1.7959	No	**0.0074**	0.8251	No	-0.0047	-0.2932	No	0.0313	1.3938	No	-0.0096	-0.5346	No	0.0207	1.4009	No	-0.0174	-0.4645	No	0.0196	1.3156	No	-0.0141	-0.6944	No
5	0.0026	0.2773	No	-0.0368	-1.4638	No	0.0121	1.0721	No	**0.0027**	0.2995	No	0.0124	0.7730	No	0.0101	0.4499	No	0.0147	0.8196	No	0.0046	0.3135	No	-0.0440	-1.1743	No	-0.0026	-0.1774	No	-0.0039	-0.1911	No
Chase Bank failure announcement																																		
-5	-0.0738	-5.0431	Yes	-0.0246	-0.9534	No	0.0101	0.8208	No	**-0.0015**	-0.0818	No	0.0115	0.6560	No	-0.0243	-1.3073	No	0.0094	0.8232	No	-0.0010	-0.0670	No	-0.0082	-0.3157	No	0.0068	0.3663	No	0.0163	0.9125	No
-4	-0.0036	-0.2451	No	0.0596	2.3149	Yes	-0.0151	-1.2352	No	**0.0039**	0.2186	No	0.0269	1.5343	No	-0.0024	-0.1277	No	-0.0136	-1.1945	No	0.0203	1.3692	No	-0.1323	-5.1049	Yes	-0.0146	-0.7837	No	0.0914	5.1112	Yes
-3	-0.0085	-0.5786	No	0.0124	0.4832	No	-0.0020	-0.1597	No	**-0.0061**	-0.3416	No	0.0053	0.3019	No	0.0249	1.3411	No	-0.0004	-0.0327	No	-0.0009	-0.0634	No	0.0372	1.4333	No	0.0130	0.6979	No	-0.0053	-0.2948	No
-2	0.0056	0.3797	No	-0.0078	-0.3017	No	-0.0018	-0.1463	No	**-0.0154**	-0.8625	No	0.0058	0.3296	No	0.0122	0.6592	No	0.0093	0.8172	No	-0.0007	-0.0476	No	-0.0963	-3.7148	Yes	-0.0057	-0.3054	No	0.0317	1.7704	No
-1	0.0052	0.3537	No	-0.0301	-1.1686	No	-0.0020	-0.1636	No	**-0.0015**	-0.0821	No	0.0051	0.2888	No	-0.0122	-0.6584	No	0.0093	0.8153	No	0.0110	0.7391	No	-0.0241	-0.9291	No	0.0068	0.3647	No	-0.0013	-0.0743	No
0	-0.0139	-0.9475	No	-0.0064	-0.2489	No	-0.0024	-0.1995	No	**-0.0017**	-0.0945	No	-0.0025	-0.1438	No	-0.0006	-0.0316	No	-0.0002	-0.0182	No	0.0043	0.2882	No	-0.0653	-2.5203	Yes	-0.0051	-0.2757	No	-0.0141	-0.7890	No
1	0.0011	0.0718	No	0.0248	0.9632	No	0.0010	0.0811	No	**0.0000**	0.0023	No	-0.0038	-0.2153	No	-0.0095	-0.5129	No	-0.0014	-0.1201	No	-0.0085	-0.5715	No	0.0013	0.0520	No	-0.0266	-1.4278	No	-0.0067	-0.3746	No
2	-0.0193	-1.3215	No	-0.0296	-1.1475	No	0.0000	-0.0033	No	**-0.0052**	-0.2927	No	0.0052	0.2956	No	-0.0106	-0.5739	No	-0.0010	-0.0895	No	0.0018	0.1216	No	0.0454	1.7514	No	-0.0580	-3.1125	Yes	0.0070	0.3924	No
3	-0.0152	-1.0396	No	0.0465	1.8033	No	-0.0123	-1.0028	No	**0.0043**	0.2389	No	0.0112	0.6407	No	0.0017	0.0890	No	-0.0010	-0.0880	No	0.0136	0.9190	No	-0.0520	-2.0063	Yes	0.0326	1.7472	No	-0.0011	-0.0638	No
4	-0.0022	-0.1521	No	0.0087	0.3374	No	-0.0008	-0.0654	No	**-0.0104**	-0.5800	No	-0.0096	-0.5476	No	0.0010	0.0525	No	-0.0008	-0.0669	No	0.0007	0.0481	No	-0.0415	-1.6019	No	-0.0004	-0.0212	No	0.0053	0.2988	No
5	0.0118	0.8090	No	-0.0411	-1.5965	No	-0.0135	-1.0997	No	**-0.0058**	-0.3258	No	-0.0045	-0.2593	No	0.0132	0.7097	No	0.0184	1.6197	No	0.0061	0.4132	No	-0.0263	-1.0131	No	0.0064	0.3420	No	0.0006	0.0335	No

Appendix 3: T-test for Average Abnormal returns

	Dubai Bank Failure			Imperial Bank Failure			Chase Bank Failure		
Days	**AAR**	**T-Statistic**	**Significance**	**AAR**	**T-Statistic**	**Significance**	**AAR**	**T-Statistic**	**Significance**
-5	0.018842	8.898712	Yes	0.003716	1.29658	No	-0.0072	-5.29136	Yes
-4	-7.6E-05	-0.03604	No	0.003738	1.304209	No	0.00187	1.374634	No
-3	-0.00622	-2.93975	Yes	-0.0014	-0.49013	No	0.006333	4.655412	Yes
-2	-0.00357	-1.68505	No	-0.00284	-0.99142	No	-0.00575	-4.22429	Yes
-1	0.00017	0.080462	No	-0.004	-1.39704	No	-0.00309	-2.2688	Yes
0	0.005335	2.519777	Yes	-0.02392	-8.34808	Yes	-0.00982	-7.21911	Yes
1	0.007261	3.42918	Yes	-0.0128	-4.46735	Yes	-0.00256	-1.88399	No
2	-0.00384	-1.81379	No	0.013177	4.59779	Yes	-0.00586	-4.30589	Yes
3	-0.00725	-3.42511	Yes	0.00371	1.294683	No	0.002562	1.882921	No
4	0.001091	0.515362	No	0.00604	2.107635	Yes	-0.00454	-3.33969	Yes
5	0.001085	0.512408	No	-0.00255	-0.88946	No	-0.00316	-2.32216	Yes