

**THE EFFECT OF THE 2007-2010 GLOBAL FINANCIAL CRISIS ON THE
RETURNS OF LISTED COMMERCIAL BANKS IN KENYA**

BY

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**A RESEARCH PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT
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DECLARATION

This research project report is my original work and has not been presented for the award of a degree in this or any other university.

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This research project has been submitted for the award of degree of master of business administration with my approval as the university supervisor.

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DEDICATION

I dedicate this research project to my parents, wife, daughter and siblings and friends, for their inspirational presence in my life and during the time I worked on this project. May God bless you all.

ABSTRACT

The objective of the study was to investigate whether the 2007-2010 global financial crisis had an effect on returns of listed commercial banks in Kenya. The research design was a correlation study with the population of the study consisting of all the 44 commercial banks currently licensed by the Central Bank of Kenya and was operational between January 1st 2004 and December 31st 2010. The sample consisted of nine commercial banks which were listed between the years 2004-2010. Secondary data for the period was collected from NSE data bank. Purposive sampling of companies quoted on the NSE during the period 2004-2010 was used. Further, firms which were listed in the course of the period were not included in the sample as their data was found not to be consistent with the study period. The study used regression model of analysis with Wednesdays stock prices of the three years before the 2007-2010 and 3 years during the crisis. The regression model was then used to make predictions of what would have been the returns in case the crisis had never occurred. These projected returns were compared with the actual returns for the period during and before the crisis. It was observed that there was a significant increase in stock returns during the crisis compared to the projected returns. Analysis of the data revealed that there were generally weak relationship between the global financial crisis and the returns of the listed commercial banks due to weak coefficients of determination therefore it can be concluded that the global financial crisis had no effect on the returns of listed commercial banks and the increase can be attributed to other factors specific to each organization. However, the study recommends that a study of similar nature be carried out to investigate information about the nature of reactions by depositors and loan holders in the banking industry.

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TABLE OF ABBREVIATIONS AND ACRONYMS

CDS	Central Depository System
CRA	Credit Rating Agencies
DASS	Delivery And Settlement System
EBIT	Earnings Before Interest and Tax
GDP	Gross Domestic Product
MBA	Master of Business Administration
NSE	Nairobi Securities Exchange

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Ahmad (2009) observed that the 2007-2010 global financial crisis started in the year 2007 and is deemed to be one of the worst of its kind. It originated from the USA as a result of the collapse of some of the large financial institutions and quickly turned into a global crisis causing a number of European banks failures and declines in major stock indexes, thus resulting in large reductions in the market value of equities and commodities worldwide. He further observed that the main reasons of the crisis was rooted in the US mortgage market, particularly in the sub-prime loan market evolving since the mid 1990s focusing on households with weak credit worthiness. Andrews (2008) also argues that monetary policy was an underlying cause of global financial crisis where the US Federal Reserve slashed the federal funds rate to very low levels after 2001 hence creating a mortgage bubble.

Mibei (2010) observed that although developing countries didn't make the 2007-2009 global financial crisis, it has become all too clear that they have not escaped suffering its effects. Since that time policy makers have been trying to formulate solutions to avoid the problems that the financial industry and the global economy are facing.

Lunogelo, Mbilinyi and Hang (2009) explain that the bubble that burst during the summer of 2007 was the result of excesses and business models that had been built up over two decades. He identified the following reasons as being prime contributors to the credit and liquidity crunch: the "shadow banking" system, globalization, leading to highly integrated markets worldwide, the role of central banks, and an environment of

very low interest rates, financial innovation and securitization, political interference, and the US government-inspired social engineering policy of extending home ownership, the “black-box” model and poor quality loan origination standards, the credit rating agencies and incompetent management practices. This financial crisis was felt all over the world, in all sectors of the economies, and Kenya was not left out (Mibei, 2010).

Named the worst financial crisis since the Great Depression of 1929-30, the first indications of there being a serious global financial crisis appeared in January 2008. On 15 January 2008, news of a sharp drop in the profits of the Citigroup banking led to a sharp fall on the New York Stock Exchange. On 21 January a spectacular fall in share prices occurred in all major world markets, followed by a series of collapses. A number of American and European banks declared massive losses in their 2007 end of the year results. The world headed for a period of inevitable economic stagnation/recession (a period of negative economic growth). This crisis lasted between 2007 and 2009 (Allen and Thomas, 2000).

In a financial crisis, an economy (or an organization) that has been the recipient of capital inflows stops receiving such inflows and instead faces sudden demands for the repayment of outstanding credits. This abrupt reversal of flows leads to financial embarrassment, as loans fall into default or at least are pushed to the brink of default. The outcome of the reversal of capital flows may be a period of outright default, a rescheduling of debt payments, or rescue by a lender who provides a new loan to finance the repayments of past loans that are falling due (Allen, Babus and Carletti, 2009).

The research is based on comparing the values of stock returns before the financial crisis when the global financial crisis was not manifest with the stock returns during the crisis.

1.1.1 Financial crisis and banks return

Mishkin (2010) defines a financial crisis as a disruption to financial markets in which adverse selection and moral hazard problems become much worse, so that financial markets are unable to efficiently channel funds to those who have the most productive investment opportunities. As a result, a financial crisis can drive the economy away from equilibrium with high output in which financial markets perform well to one in which output declines sharply.

Minsky (2009) argues that financial crisis involves a sharp decline in asset prices, failure of both large financial and non-financial firms, deflation or disinflations, disruptions in foreign exchange markets or some combinations of all of these. Since any of these disturbances is perceived as having potential serious consequences for the aggregate economy. Calomins and Hubbard(1990) emphasizes that a sharp decline in stock markets, as in a stock market crash, can increase adverse selection and moral hazard problem in financial markets because it leads to a large decline in the market value of firms net worth.

Mishkin (2010) explains that a dramatic increase in uncertainty in financial markets, due to the failure of a prominent financial or non-financial institution, a recession or a stock market crash makes it harder for lenders to screen out good from bad credit risks. The resulting inability of lenders to solve the adverse selection problem makes them less willing to lend leading to a decline in lending, investment and aggregate activity.

Bernanke (1983) argues that bank panics can lead to higher interest rates because the panic results in decreasing liquidity since the supply of funds to borrowers has been curtailed. This rise in interest rates directly increases adverse selection problems in credit markets and also increases adverse selection as well as agency problems.

Greenwald, Stieglitz and Weiss (1984) posit that unanticipated declines in the price level also decrease the net worth of firms. Because debt payments are contractually fixed in nominal terms, an unanticipated decline in the price level raises the value of firm's liabilities in real terms but does not raise the real value of firm's assets. Sharp drop in the price level, therefore causes a substantial decline in real net worth and an increase in adverse selection and moral hazard problems facing lenders. The resulting increase in adverse selection and agency problems causes a decline in investment and economic activity.

DeYoung and Rice (2004) argues that the interest banks earn by intermediating between depositors and borrowers continues to be the primary source of profits for most banking companies. But banks also earn substantial amounts of noninterest income by charging their customers fees in exchange for a variety of financial services. Many of these financial services are traditional, namely, transaction services like checking and cash management; safe-keeping services like insured deposit accounts and safety deposit boxes; investment services like trust accounts and long-run certificates of deposit; and insurance services like annuity contracts. In other traditional areas of banking (such as consumer lending and retail payments) the widespread application of new financial processes and pricing methods is generating increased amounts of fee income for many banks. Further, in recent years, banking companies have taken advantage of deregulation

to generate substantial amounts of noninterest income from nontraditional activities like investment banking, securities brokerage, insurance agency and underwriting, and mutual fund sales.

This study compares stock returns before and during the crisis. The crisis must have affected the Kenyan banking sector due to the connected nature of the globalized banking industry. The Kenyan banks provide channels through which funds move from the developed nations to Kenya and vice versa at a profit. The crisis therefore led to a shock in the flow of funds from the developed markets to Kenya. This may have reduced the funds handled by these banks leading to lower profitability which will make the stock prices to fall. The listed banks are also subjected to the global financial environment through the NSE in the way that investors fleeing the crisis-ridden markets will want to hold their funds in the Kenyan listed firms as a secure haven. The result would be an increase in the demand and therefore prices of the stocks of the listed banks. In the eventual analysis, there should be a significant change in the pricing of stocks of listed banks as a result of the crisis. There should therefore be a significant change in the returns of the stocks of the listed banks after the crisis was publicly acknowledged lasting three years from 2007.

1.1.2 The Nairobi Securities Exchange

In 1954 the Nairobi Security Exchange (NSE) was constituted as a voluntary association of stockbrokers registered under the Societies Act. Since Africans and Asians were not permitted to trade in securities, until after the attainment of independence in 1963, the business of dealing in shares was confined to the resident European community .The NSE

use two indices: the NSE 20- share index which has been in use 1964 and measures the performance of 20 blue chip companies with strong fundamentals' and which have over the years returned positive financial results; The Nairobi Securities Exchange All share Index (NASI) was introduced as an alternative index in 2008 and the index incorporates all the traded shares of the day. Its attention is therefore on the overall market capitalization (NSE, 2010).

In Kenya, the sale of shares and stocks started in 1920, when the country was still a British colony (Barasa, 2008). Wagacha (2001) describes the NSE as a market that provides enterprises with a non- bank source of financing through the sale of shares to the public and that market capitalization is the share price multiplied by the number of shares, this number tells the investor what they have to pay to buy every share and therefore, rather than telling the investor the company value, market capitalization simply represents the price tag.

1.1.3 The Banking Sector in Kenya

Kenya's financial system comprises commercial banks, of which some are partly or wholly owned by foreign financial institutions. According to CBK, foreign banks comprise about a quarter of all banks in the country, with 11 foreign banks out of 44 commercial banks in 2007. The foreign banks account for about 40% of commercial banks' core capital. There are five foreign banks that are fully foreign incorporated. These fully foreign owned banks accounted for 9.2% of the core capital of the banking.

By 1953 when the idea of formalizing the stock exchange was underway, there were six banks in Kenya. The number of banks increased to ten by 1963 but the government felt

that these banks were not serving the interest of African farmers and businessmen. Therefore, the government set up locally-owned banks in 1965 and 1968 and also made deliberate efforts to promote growth of indigenous financial institutions by establishing even regulatory systems across the institutions. The private banking sector has been a mainstay of the Kenyan economy from the 1950s to date. Furthermore, foreign banks have always accounted for a substantial portion of the assets of the Kenyan banking system (Mwega, 2009).

In the 1960s, the number of new listings in Kenya increased such that the total number of listed companies increased from 56 in 1960 to 63 in 1969. During the period, the first firm from the financial sector was listed and locally controlled companies made a significant entry on the NSE. The first bank (Barclays Bank) was listed in 1986 followed by Kenya Commercial Bank in 1988. Currently there are ten listed banks which according to Kestrel Capital (2010) had a capitalization value of US Dollars 4,957 million of the total capitalization of US Dollars 13.8 Billion in the week ending 30th July 2010. This made about 36% of the NSE total capitalization (Ngugi and Njiru,2005).

1.2 Research problem

Reavis (2009) sought to provide an explanation to what led to the global financial crisis of 2007 to 2009. This was a case study of the financial crisis. In this study time series data on growth of household incomes and growth of housing prices were plotted against time. Whereas the growth rate of incomes maintained a steady growth from zero point five percent in 1991 to four point two percent in 2007, the housing prices rose from a low of two point two percent in 1991 then surpassed incomes growth rates in 1997 to reach a

high of ten point nine percent in 2004. There was a slight drop to ten point seven percent in 2005 followed by a drastic increase to twelve point five percent in 2007. The housing prices fell from a high of \$261,739 in 2005 to \$180,100 in 2008 (Reavis, 2009). This study however did not address how the crisis affected stock returns of listed banks.

Smaller banks and mortgage companies were left saddled with loans that they couldn't sell and that they borrowed money to buy in the first place. Suddenly banks started defaulting on their loans as well, triggering the downward spiral that by late 2008 gripped the entire world economy. Many banks were facing insolvency: their assets were too small to cover their liabilities, which was to say they owed more money than they had. Credit markets started to freeze up and individuals and businesses alike could not get loans (Reavis, 2009). It would be therefore interesting to see the effects this had on stock returns of local listed banks.

A study conducted by Muriithi (2010) sought to explain the effect of financial crises on various parameters and the magnitude of their effect. Muriithi (2010) studied three crises between 1990 and 2010 and their effect on the performance of the NSE. Three crises were considered: the European Financial Crisis of 1991-1992; the Asian Financial Crisis of 1996-1997; and the Global Financial Crisis of 2007-2008. The study was based on the behaviour of the NSE 20 Share Index. This study confirmed that the NSE 20 Share Index dropped sharply from high of 5774 points in January 2007 to a low of 2474 points in March 2009. Muriithi (2010) failed to address the effect of the crisis on the stock returns of listed commercial banks in Kenya.

In another study, Mibei (2010) conducted a study of the World Financial Crisis on the share price behaviour at the NSE. The study covered the then 45 listed companies based on monthly mean share prices. The ordinary moving averages were used to study the trend of the prices of shares. It was confirmed that prices fell sharply during the crisis. The firms listed included commercial banks but Mibei (2010) focused only on share prices, generally, but failed to address how the crisis affected returns of the stocks of the listed commercial banks specifically.

On the contrary Beck (2009) conducted a research on the banking industry considering using aggregate, bank-level and survey data for the period 2000-2007. They analyzed the data on growth and ownership structure; regional comparison of Private Credit percent to GDP, Liquid Liabilities percent to GDP, and net interest margin; financial health indicators like regulatory capital to risk weighted assets, regulatory Tier 1 capital to risk weighted assets, return on assets, non-performing loans net of provisions to total capital and non-performing loans to gross loans, and stress tests. All these showed the banking industry was healthy even though most of their major operations were affected which in essence means that stock returns of the banks were also affected but it is not explicitly indicated how the effect was manifested.

Muriithi (2010) focused on the behavior of the NSE 20 share index to the crises while Mibei (2010) investigated the impact of financial crises on share price at the NSE. On the contrary, Beck (2009) conducted a study in banking sector which focused on growth and ownership structure. However, these studies did not investigate how the crises impacted on listed banks returns. The study attempted to answer the question; Did the 2007-2010 global financial crisis affect the returns of listed commercial banks in Kenya?

1.3 The objective of the study

This study intended to establish the effect of the 2007-2010 global financial crisis on returns of listed commercial banks in Kenya.

1.4 Value of the study

This study will contribute to theory in the sense that it will enhance the scholarly discussions and debates on the effect of financial crises on financial organizations on the aspect of stock returns as further researchers will also be able to use the findings to enhance their further arguments.

The study will also contribute to the practice by providing objective empirical evidence to the banking industry in Kenya on how their profitability was affected by the global financial crisis and a deeper explanation to the effect of the global financial crisis to the NSE by looking deeper into the effect on one subgroup of firms listed on the NSE. This will also enable the bank managers and financial analyst to make more informed decisions in order to protect their stock returns against financial crises.

The Central Bank of Kenya will also use the findings of this study to enhance their regulatory authority over commercial banks in that they will be able to develop more informed and comprehensive regulatory frame work that are to be followed or implemented by the commercial banks to mitigate the effects of financial crisis in future and to the scholars and academic researchers it will add more to the existing pool of knowledge and a basis for further research.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at the various theories that inform the study. It further examines the previous empirical researches in this area of study. A review of the event study methodology and its key assumptions have equally been discussed

2.2 Theoretical review

2.2.1 Marxist Theory of Financial Crises

Marxist analysts generally agree that capitalism produces two different kinds of economic crisis (Kotz, 2009). One is the periodic business cycle recession, which is resolved after a relatively short period by the normal mechanisms of a capitalist economy and follows a cycle of booms and recession (Kotz, 2009). The crisis is experienced in a recession. According to Easterling(2003) today's world of wild stock market booms and slumps, recurring layoffs and long-term unemployment, corporate scandals seems to fit the description better than ever before. The present economic downturn is no exception. The second is a long-lasting economic crisis that requires significant restructuring, that is, through institutional change if the crisis is to be resolved within capitalism and the capital accumulation process restored (Kotz, 2009).

Many Marxists groupings believe that crises are inevitable and will be increasingly severe until the contradictions inherent in the mismatch between the modes of production and the development of productive forces reach the final point of failure, determined by the quality of their leadership, the development of the consciousness of the various social

classes, and other subjective factors. Thus the degree intervention in otherwise perfect market mechanisms becomes more and more extreme as the time as the crises occur (Tan, 2008).

2.2.2 Minsky's Financial Instability Theory

The financial instability theory explains that, from time to time, capitalist economies exhibit inflations and debt deflations which seem to have the potential to spin out of control (Minsky, 1992). In such processes the economic system's reactions to a movement of the economy amplify the movement with inflation feeding upon inflation and debt-deflation feeding upon debt-deflation (Minsky, 1992). Minsky's research focused on understanding and explaining financial crises. Minsky claimed that in prosperous times, when corporate cash flow rises beyond what is needed to pay off debt, a speculative euphoria develops, and soon thereafter debts exceed what borrowers can pay off from their incoming revenues, which in turn produces a financial crisis. As a result of such speculative borrowing bubbles, banks and lenders tighten credit availability, even to companies that can afford loans, and the economy subsequently contracts into more crisis.

Minsky (1992) posited that the financial systems swings between robustness and fragility and these swings are an integral part of the process that generates business cycles. He argued that these swings, and the booms and busts that can accompany them, are inevitable in a free market economy, unless government steps in to control them, through regulation, central bank action and other tools. He opposed deregulation.

Minsky (1992) broke down the process of crisis from stability to instability into three types of debt phases: hedge, speculative, and Ponzi. In the Hedge Phase, buyers' cash flows cover interest and principal payments for borrowers who go into debt to buy an asset. This way, the debt is self-liquidating, fully hedged, so it is a stabilizing factor in this economic phase. In the Speculative Phase cash flows cover only interest payments, but not enough to amortize the principal. The Ponzi Phase is the last phase toward the end of the bubble. In this phase, cash flows cover neither interest rate nor principal, and it all depends on rising asset prices to keep the borrowers afloat. In the mortgage market, it becomes a negative amortization loan, or subprime with no ability of paying back. In the fixed income market, it becomes collateralized debt obligations (CDO), leveraged loans which private equity firms use for their leveraged buyouts, relying on their acquired business to maintain historical high revenue growth and profit margin (Tan, 2008).

Government interventions aimed to contain the deterioration seem to have been inept in some of the historical crises. These historical episodes are evidence supporting the view that the economy does not always conform to the classic precept that the economy can best be understood by assuming that it is constantly an equilibrium seeking and sustaining system (Minsky, 1992).

2.2.3 Proutist Theories

It's a theory based on the socio-economic philosophy that calls for the elimination of capitalism. It emphasizes the need to fulfill minimum economic needs and create an ideal congenial social environment in which there will be maximum utilization of collective

wealth and the rational distribution of resources to solve all economic problems (Sarkar, 1967).

The salient focus of Proutist theories of financial crisis is inequality and blockages in the rolling of money. These ideas were originally propounded by Sarkar. The inequality is not just seen in terms of the distribution of income but more importantly in the distribution of wealth. According to this theory there are two main causes for economic depressions: First, the concentration of wealth and second, blockages in the rolling of money. If the capital is concentrated in the hands of a few individuals or state, the majority of people are exploited by a handful of people (Sarkar, 1967). As a result of this process of severe exploitation, a serious explosion takes place. This explosion is known as a depression in the economic world (Sarkar, 1967).

The second cause is that when money that is in the possession of individual or state capitalists stops rolling. Money remains inert or unutilized because those capitalists think that if the money is allowed to roll freely then their profits will decrease, even though it will bring relief to the common masses. The very psychology of the capitalists is to make profit from the rolling of money. When they discover that the investment of money does not bring profit up to their expectations, then they stop rolling the money (Sarkar, 1967) leading into a crisis. This theory believes earnings inequality in the USA peaked in 1928 and 2007, prior to market peaks. Another cause of a global financial crisis and depression is blockages in the circulation of money. Indeed, the recovery from the late-2000s financial crisis has been hampered by unwillingness to lend by banks around the world (blocking the rolling of money).

2.2.4 Coordination Games Theory

This theory of financial crisis is based on game theory. There may be an equilibrium in which market participants invest heavily in asset markets because they expect assets to be valuable, but, there may be another equilibrium where participants flee asset markets because they expect others to flee too. This type of argument underlies bank runs, in which savers withdraw their assets from the bank because they expect others to withdraw too sparking a financial crisis (Ravenna, 2002).

This theory explains that there is gaming in the world of finance among investors. The agents in finance keep assessing the available information and try to maximize their benefit with respect to the reaction of the other agents. The competition created means an action by a group of agent triggers a reaction from the other sets of investors. If for instance a group of agents or investors start drawing funds from their accounts, the other set will do the same in order to also avoid the perceived undesirable consequences being avoided. This can effectively lead to a bank run. The exchange rates market, for example, is believed to be a coordinated game (Heineman, 2002).

2.2.5 Herding Models and Learning Models

Herding behaviour of investors, defined as the tendency to accumulate on the same side of the market, is often viewed as a significant threat for the stability and the efficiency of financial markets. Herding behavior in financial markets is particularly focused on the investment behavior of institutional investors, i.e., of banks and other financial institutions. Herding describes the tendency of institutions or individuals to show similarity in their behavior and thus act like a herd. Herding can be unintentional or

intentional. Unintentional herding is, mainly, fundamental driven and arises because institutions may examine the same factors and receive correlated private information, leading them to arrive at similar conclusions regarding individual stocks (Kremer and Nautz, 2011). Intentional herding is more sentiment-driven and involves the imitation of other market participants, resulting in simultaneous financial behaviour regardless of prior beliefs or information sets. This type of herding can lead to asset prices failing to reflect fundamental information, exacerbation of volatility, and destabilization of markets, thus having the potential to create, or at least contribute, to bubbles and crashes on financial markets (Kremer and Nautz, 2011).

2.2.6 Contagion Theory

The prevalence of financial crises has led many to conclude that the financial sector is unusually susceptible to shocks. A shock that initially affects only a particular region or sector or perhaps even a few institutions can become systemic and then infect the larger economy (Allen, Babus & Carletti, 2009). Contagions take two approaches: direct linkages and indirect balance-sheet linkages. In looking for contagious effects via direct linkages, early research by Allen and Gale (2000) studied how the banking system responds to contagion when banks are connected under different network structures. Banks perfectly insure against liquidity shocks by exchanging interbank deposits. The connections created by swapping deposits, however, expose the system to contagion (Allan and Thomas, 2009).

Allen and Gale (2000) show that incomplete networks are more prone to contagion than complete structures. Better connected networks are more resilient since the proportion of

the losses in one bank's portfolio is transferred to more banks through interbank agreements. To show this, they take the case of an incomplete network where the failure of a bank may trigger the failure of the entire banking system. Allen and Gale (2000) prove that, for the same set of parameters, if banks are connected in a complete structure, then the system is more resilient with regard to contagious effects.

2.3 Empirical Studies on Global Financial Crisis

Reavis (2009) conducted a research to provide an explanation as to what led to the global financial crisis of 2007 to 2009. It was conducted as a case study of the financial crisis, in the US. In this study time series data on growth of household incomes and growth of housing prices were plotted against time. Whereas the growth rate of incomes maintained a steady growth from zero point five percent in 1991 to four point two percent in 2007, the housing prices rose from a low of two point two percent in 1991 then surpassed incomes growth rates in 1997 to reach a high of ten point nine percent in 2004. There was a slight drop to ten point seven percent in 2005 followed by a drastic drop to twelve point five percent in 2007. The housing prices fell from a high of \$261,739 in 2005 to \$180,100 in 2008. He also noted that smaller banks and mortgage companies were left with loans that they couldn't sell and that they borrowed money from banks to buy in the first place. Suddenly the banks started defaulting on their loans as well as a consequence of mortgage firms defaulting, triggering the downward spiral that by late 2008 gripped the entire world economy. Many banks were facing insolvency: their assets were too small to cover their liabilities, which was to say they owed more money than they had. Credit markets started to freeze up and individuals and businesses alike could not get loans (Reavis, 2009).

Baxter (2009) conducted a study on the global financial crisis. It was a study to assess the impact of the crisis on global foreign direct investment inflows (FDIs). The study was done on 16 European countries, USA, Japan and a further 20 from the rest of the world (3 African; 6 from Latin and Caribbean; 2 from Asia and Oceania; 7 from South, East, and South Eastern Asia; Russia and Ukraine from the transitional economies). The data of analysis was from the World Bank. The study found that the impact of the crisis on FDI was different, depending on region and sector. Developed countries were the most affected, with a decline in FDI inflows in 2008, due mainly to sluggish market prospects. Flows into developing economies however continued to grow in 2008, but at a much lower rate than the year before. In developing and transition economies, FDI inflows remained more resilient. Flows to Africa were grown further to more than \$60 billion, despite the slowdown in global economic growth and its negative consequences for the region.

Flows to East, South and South-East Asia (the largest recipient of FDI among developing economies, accounting for almost half of all flows to developing countries) rose, but at a slower rate than in 2007 while flows to West Asia declined significantly following the record level registered the preceding year, due to slower growth in oil demand, rising costs and lower funds from export proceeds (due to lower prices of oil). By contrast, FDI flows to Latin America and the Caribbean showed significant resilience to the world economic slowdown, with 13 per cent increase, partly as a result of a strong rise in FDI flows to South America. However, Central America and the Caribbean – which are traditionally highly dependent on the United States economy, registered a decline. FDI flows to the transition economies of South East Europe and the Commonwealth of

Independent States maintained their upward trend despite the financial crisis and regional conflicts, registering an increase of about 6 per cent (Baxter, 2009).

The global financial and economic crisis influenced firms' capacity to invest as a result of reduced availability of finance and their propensity to invest due to gloomy economic and markets prospects. According to Baxter (2009) the crisis was transmitted through reduced access to finance caused by tighter credit conditions and lower corporate profits, and credit becoming less abundant and more expensive; Risk aversion as a result of companies scaling back investments due to the high level of perceived risks and uncertainties, in order to develop resilience to possible "worst-case" scenarios regarding financial and economic conditions; and gloomy prospects whereby the looming sharp economic recession worldwide (and even recession in a number of developed countries) and a heightened appreciation of risk, has reduced firms' propensity to invest for further expansion both domestically and internationally of production capacity (Baxter, 2009).

Maswana (2009) conducted a study to determine the impact of the global financial crisis and recession on Africa. The study found that the crisis in Africa was caused by the wave of financial liberalization, global imbalances (e.g., the savings glut hypothesis), U.S. consumption patterns, and financialization. In financialization, profits do not come from investment in production that increases value. Rather, when the main economic activity becomes financial transactions rather than that which creates new wealth, the preference is for the kind of short-term returns that Africa's developing countries cannot provide, which diverts potentially long-term development resources.

A number of private sector projects across Africa were suspended or delayed because of investor withdrawal and more constraining funding conditions due to higher interest spreads and lower debt-to-equity exposure. Government attempts to raise long-term finance through sovereign bond issue also failed (like in South Africa) or been canceled (like Ghana Telecom bond issue for USD 300 million) or delayed (like Eurobond issues for Kenya, Nigeria, Tanzania, and Uganda) This lack of funding has caused costly delays in the implementation of planned public infrastructure programs (Brealey, 2009).

A study conducted by Muriithi (2010) in which the effect of financial crises on various parameters of banking and their magnitude was studied. Three crises between 1990 and 2010 and their effect on the performance of the NSE were studied. Three crises were the European Financial Crisis of 1991-1992; the Asian Financial Crisis of 1996-1997; and the Global Financial Crisis of 2007-2008. The study was based on the analysis of the behaviour of the NSE 20 Share Index before and after the crises. This study confirmed that the NSE 20 Share Index dropped sharply from a high of 5774 points in January 2007 to a low of 2474 points in March 2009.

In another study conducted by Mibei (2010) on the World Financial Crisis on the share price behaviour of securities at the NSE. 45 listed companies were studied based on their monthly mean share prices. The ordinary moving averages were used to study the trend of the prices of shares. It was concluded that prices fell sharply during the crisis.

2.4 Event Study Methodology

Event studies have a long history. Perhaps the first published study is Doll (1933). The general applicability of the event-study methodology has led to its wide use. In

accounting and finance field, event study methodology has been applied to a variety of firm-specific and economy wide events.

McWilliams and Siegel (1997) agree that event study method has been used extensively in accounting and finance to help researchers assess the financial impacts of changes in corporate policy. The method has become popular because it obviates the need to analyze accounting based measures of profit, which have been criticized because they are often not very good indicators of true performance of firms.

There are a number of methodologies used to test the efficiency of a market. This study will use event study approach that has been widely applied in studying the price reaction to an event of interest (Fama et al 1969, Brown & Warner, 1980, Elton & Grubber 1995, Njogu 2003, & Onyango, 2004). An event study averages the cumulative performance of stocks overtime from a specified number of time periods before an event to a specified number of periods after or during. Performance for each stock is determined after adjusting for market-wide movement in security prices. Event study can be carried out to see just how fast security prices actually react to the release of information. Do they react rapidly or slowly? The returns are also looked into after announcement of some information to see if they are normal, high or low. Normal equilibrium based assets pricing model can invalidate a list of market efficiency.

2.4.1 Procedure for an Event Study

MacKinlay (1977) noted that the initial task of conducting an event study is to define the event of interest and identify the period over which the security prices of the firms involved in this event will be examined (the event window). The event in this case will be

the global financial crisis announcement and the event window will be one month of the announcement.

MacKinlay (1977) argued that in practice the period of interest is often expanded to multiple days, including the day of announcement and the day after the announcement. This captures the price effects of announcements which occur after the stock market closes on the announcement day. After identifying the event, it is necessary to determine the selection criteria for the inclusion of a given firm in the study.

The criteria in this study will be all the listed commercial banks that were listed in the NSE in 2004-2010 with both years inclusive. To appraise the event's impact the researcher will require a measure of abnormal return. The abnormal return is the actual ex-post return of the shares of the specific banks over the event window minus the normal return of the firm over the event window. The normal return is defined as the return that would be expected if the event did not take place. This study will use the same market model that assumes a stable linear relation between the market return and the security return used by (Mwangangi, 2011).

MacKinlay (1977) noted that once a normal performance model has been selected, the parameters of the model must be estimated using a subset of the data known as the estimation window. The most common choice, when feasible, is to use the period prior to the event window for the estimation window. He estimated the market model parameters over 36 months prior to the event and this study will use the same estimate. The researcher needs also to design the testing framework for the abnormal returns. Important consideration are defining the null hypothesis and determining the techniques for

aggregating the abnormal returns of individual firms. The presentation of the empirical results will follow the formulation of the econometric design. In addition to presenting the basic empirical results, the presentation of diagnostics can be fruitful. Ideally the empirical results will lead to insights relating to understanding the sources and causes of the effects of the event study.

2.4.2 Assumptions Underlying Identification of Abnormal Returns

The first assumption is that markets are efficient. Market efficiency implies that the stock prices incorporate all relevant information that is available to market traders. If this is true, then any financially relevant information that is newly revealed to investors will be quickly incorporated into stock prices. Dann, Mayers and Raab (1977) found that the market stock prices adjust within 15 minutes of the release of firm specific information.

Therefore, an event is anything that results in new relevant information. A researcher can identify significant events by their impact on the stock prices of firms. To do this, the researcher defines period of days over, months or years which the impact of the event will be measured. The assumption of market efficiency is difficult to reconcile with the use of long event window. The use of very long event window implies that some researchers do not believe that the effects of the events are quickly incorporated in stock prices. This can be interpreted as a violation of the efficient market assumption.

The second assumption is that the events are unanticipated and announced in the press. The market previously did not have information on the event and traders gain information from the announcement. The abnormal returns can then be assumed to be the result of the stock market reacting to new information. It is possible that an event will have been

anticipated or information leaked to the market in advance of a formal announcement. Such leakages make use of the event study methodology problematic, as it is difficult to determine when traders became aware of the new information (Beatty & Zajac, 1987; Chatterjee, 1986; Mahoney & Mahoney, 1993; Turk, 1993; Seth, 1990).

McWilliams and Sigel (1997) based the third assumption on the claim that the researcher has isolated the effects of an event from the effects of other events. This is perhaps the most critical assumption of the methodology. It is assumed that there are no confounding effects of the events. Confounding effects include the declaration of dividends, announcement of an impending merger, announcement of unexpected earnings, filing of a large damage suit and change of key executive. Any of these events might have an impact on the share price during the event window. The longer the event window, the more difficult it is for researchers to claim that they have controlled for confounding effects.

Foster (1980) discussed several ways of controlling the confounding effects. He cites that these can be controlled by eliminating firms that have confounding effects, partitioning a sample by grouping firms that have experienced the same confounding effects, eliminating a firm from a sample on the day that it experiences a confounding effect and subtracting the financial impact of the confounding effect when calculating the abnormal returns.

2.5 Impact of the Crisis

The 2007-2010 financial crises caused the accumulation of debt. The main cause of this was the growing recognition that the quantity of bad debt in the system was much larger than was thought. This in turn led to confusion about how to respond to the rising number of loan defaults. The mortgage companies Fannie Mae and Freddie Mac (largely due to pressure from Chinese and Japanese investors in these companies) switched abruptly to allowing a leading investment bank, Lehman Brothers, to fold against their will. This threw the banking system into a deeper crisis in three ways: first, the rising tide of bad debt threatened the solvency of the banks. Second, the apparent change in Federal Reserve policy from the earlier rescue of Bear Sterns created a panic in the inter-bank lending market. Uncertain of which banks would survive, banks ceased to lend to anyone at all in this market causing the system as a whole to seize up. Thirdly, stock market investors also panicked sending bank shares into freefall (Kilmister, 2008).

While these problems were first apparent in the US and UK, where housing booms and bank deregulation had been especially strong (Reinert, 2009), it quickly became clear that banks from many countries, particularly continental Europe, had also made loans in these markets so that the banking crisis affected the major industrialized countries as a whole (Reavis, 2009).

For the developing world, the rise in food prices as well as the shock effects from the financial instability and uncertainty in industrialized nations was having a compounding effect. High fuel costs, soaring commodity prices together with fears of global recession were worrying many developing country analysts. Countries in Asia were increasingly

getting worried about what is happening in the West. A number of nations urged the US to provide meaningful assurances and bailout packages for the US economy, as that would have an effect of reassuring foreign investors and helping ease concerns in other parts of the world. Many Asian nations had witnessed rapid growth and wealth creation in the recent years leading to enormous investment in Western countries and increased foreign investment in Asia, mainly from the West (Shah, 2011).

Massa (2009) argues that financial contagion to developing countries may be classified into two categories: one, spillovers through financial market linkages; and two, pure contagion. Under spillovers through financial market linkages, the banking system (and stock markets) may be affected in various ways; first, foreign investors facing margin calls or redemption orders may be forced to liquidate their equity positions in developing countries or foreign banks experiencing huge losses in their home country may cut their credit lines in developing countries in order to restore their capital adequacy ratios; secondly, foreign banks facing an increase in the number of non-performing loans at home or facing losses on their securities portfolios may sell off assets in developing countries in order to rebalance their portfolios, thus reducing their overall value at risk. The impact of these channels will depend on the extent to which a country's financial system is integrated into the global system.

Mwega (2009) argues that pure contagion may be caused by heightened risk perception (irrationality) and declining investor confidence as well as by increased risk aversion, rather than by changes in market fundamentals. These phenomena may lead foreign investors to sell off assets that are perceived to be riskier than high-quality assets in their home countries. He further asserts that the rate of return on assets was on the rise till

2007, nonperforming loans percentage to total loans were reducing and private sector credit in nominal terms increased. Overall, Kenya's banking sector had improved tremendously in the past decade, in terms of product offerings and service quality, stability and it seemed poised to withstand the crisis but the Nairobi Securities Exchange was adversely affected and foreign direct investment was also affected.

On the contrary the stock market took a beating. The net portfolio equity flows rose from US\$ 1 million in 2003, to a high of US\$ 15 million in 2005 before crumbling back to US\$ 1 million in 2007. The NSE 20-share index slumped by 35% in 2008, by 25% from July 2008. Further the index declined by 7.3% in January 2009 (Mwega, 2009). Donor support was on the decline. With these in mind, coupled with the connectedness of the Kenyan financial sector to the rest of the world, its expected profitability of the banks listed on the NSE during the crisis period also must have experienced weak profitability which this study seeks need to verify.

2.6 Summary of Literature Review

From the literature review and the literature on the NSE and Kenyan banking system, it is not clear whether the Global financial crisis had an effect on returns of listed commercial banks in Kenyan or not. The various theories that have been discussed like Marxist theory, Minsky's theory, Proutist theory explain that the effect of the crisis spread through the inter-connections among the affected organizations. Depending on the nature of connectedness, the returns can either rise or fall in a manner significantly out of the normal. It is therefore expected that the listed banks in Kenya experienced the shocks of the crisis. Muriithi (2010) concluded that the crisis was evident in Kenya when he

conducted an analysis of the NSE. On the contrary Mwega (2009) showed the banking system in Kenya robust in terms of growth and possibly not significantly affected by the crisis. The question that begs answers is how were quoted banks affected in terms of returns?

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research design, the population and the sample size used in the study. It further explains the data collection method and data analysis methods that were used in the study.

3.2 Research Design

The study design was a correlation and regression study. Mugenda (2005) explains that correlation studies describe in quantitative terms the degree to which variables are related or the effect of one variable on another and this is in accordance with this study which seeks to establish the impact of the financial crises on banks returns. This is consistent with other studies that have successfully used the correlation and regression design such as Reavis (2009) and Muriithi (2010). The study used returns data from a period prior to global financial crisis and compared it with the data during the crisis period.

3.3 Population

All the 44 commercial banks licensed by the Central Bank of Kenya and were operational between January 1st 2004 and December 31st 2010 made up the population.

3.4 Sample and Sampling Technique

The sample size consisted of nine commercial banks which were listed in the NSE and were consistently trading between 2004 and 2010. Listed banks were selected due to

authenticity and availability of data at the NSE. Purposive sampling technique was used. Mugenda (2005) explains that purposive sampling technique allows for use only those cases that have the required characteristic with respect to the objective of the study. Purposive sampling was useful for this study as it enabled this study to pick only those banks which were listed and actively trading during the study period.

3.5 Data Collection

The data collected was secondary data obtained from the Nairobi Securities Exchange. The data required included the name of the listed commercial banks trading at the NSE. Stock prices of the listed commercial banks were also used.

3.6 Data Analysis

The Wednesday stock returns were used because according to Fama (1965) and French (1980) Wednesday prices suffer least from irrationalities that bring about Monday effect and Friday effect. A period of three years before the crisis period was used i.e. 2004, 2005 and 2006. the Wednesday stock returns for these years were used to forecast the expected returns during the period 2007-2010 when the crisis was manifest (MacKinlay, 1977).

The standard approach was based on estimating the market model for each firm then calculating the abnormal returns. The event study procedures was followed as outlined in chapter two to calculate the abnormal returns which were assumed to reflect the stock

market's reaction to the arrival of the new information on the crisis. The rate of return on share price of firm i on day t was expressed as

$$R_i = \frac{P_t - P_{(t-1)}}{P_{(t-1)}} \dots\dots\dots (i)$$

Where for every week,

R_i = The rate of return on the share price of bank i

P_t = Wednesday Stock price of bank i in week t

$P_{(t-1)}$ = The Wednesday price of the stock of the bank i the previous Wednesday

The returns of the years 2004, 2005 and 2006 for each listed commercial were regressed against a dummy variable for the weeks. The regressed model was then used to forecast the returns of the crisis period. The regression model was

$$R_i = \alpha_i + \beta_i \times D + \varepsilon \dots\dots\dots(ii)$$

Where

R_i = The rate of return on the share price of bank i

α_i = The intercept term for bank i

β_i = The coefficient of regression for bank i

D = The dummy variable for the weeks. $D = 1, 2, 3, \dots$

ε = Regression residuals

The estimated model was used to project the estimates of the returns in the years 2007, 2008, 2009 if there was no crisis. From the projected returns the estimates of weekly abnormal returns (R_A) for the i th bank were calculated using the following equation

$$R_A = R_c - R_F \dots\dots\dots(iii)$$

Where

- R_A = Estimates of weekly abnormal returns
- R_c = Return in the week during the crisis time
- R_F = The forecasted return

Dodd and Warner (1983) method of computing standardized abnormal return (SAR) was adopted. The abnormal return was standardized by dividing it by the standard deviation as:

$$SR_A = \frac{R_A}{SD_i} \dots\dots\dots (iv)$$

Where

- SR_A = Standardized abnormal returns for bank i
- R_A = Abnormal returns for bank i
- SD_i = The standard deviation of the abnormal returns

The standardized abnormal return were cumulated over a number of days (the event window), to derive a measure of the cumulative abnormal return (CR_A) for each firm.

A standard assumption was that the values of CR_A for every bank were independent and identically distributed. With this assumption, the values were converted to identically distributed variables by dividing the CR_A for every bank by its standard deviation. Thus the average standardized cumulative abnormal returns across the nine banks (ACR_A) over the event window was computed and compared with the expected value.

CHAPTER FOUR: DATA ANALYSIS

4.1 Introduction

This chapter presents the results of the study. Data was collected from secondary source, the NSE Data Bank. It was the intention of the study to investigate the effect of the global financial crisis on the returns of the listed commercial banks in Kenya. After sorting the available data the study was able to use for the purpose of analysis data from 9 firms which was 82% of the target sample, the results can therefore be generalized to the entire population of interest.

4.2 Preliminary Analysis

4.2.1 The Global Financial Crisis and Bank Returns

The listed banks returns were found by using the Wednesday stock prices of each of the listed banks with their dividends using the Modigliani and Miller (1961) model. The values are in the appendix II. The returns are the weekly change in price divided by the price of the preceding week. The weekly return with the dummy variable of the week made a complete observation for the regression analysis.

4.2.2 Correlation Analysis of returns and the dummy variable

The correlation between the returns for each bank and the dummy variables before and during the crisis were calculated and presented in the Table 1. The study found that there were generally low levels of correlation with City Trust recording the highest value of negative correlation of -0.12320 and National Bank recording the highest positive correlation of 0.11742. for the period during the crisis, City Trust still had the highest positive correlation of -0.11423 while Standard Chartered had the highest positive

correlation of 0.09230. However, marginal changes in correlation were recorded for each bank during the period before and the period during the financial crisis.

Table 1 Correlation Analysis of Returns and the Dummy Variables.

BANK	Correlation	
	Before	After
BARCLAYS BANK	0.01989	0.06835
CFC	-0.07237	-0.03726
CITY TRUST	-0.12320	-0.11423
DIAMOND TRUST	0.09754	0.05114
HFCK	0.03992	0.04686
KCB	0.08768	0.08761
NATIONAL BANK OF KENYA	0.11742	0.00581
NIC	0.09986	0.01460
STD CHARTERED	0.00914	0.09230

Source: NSE Data Bank

4.2.3 The Regression Results of Stock Returns and Dummy Variable

Table 2 shows the summary of the regression of the Wednesdays return as the dependent variable against the dummy variables before the crisis set in. As shown in the table all the banks had the p-values of the constant term being more than the critical p-value of 0.05. As shown in the second column, all the p-values were also greater than 0.05 showing the values of the regression coefficients were not significant for all the banks.

The regression was considered significant according to the F-Test if the number in the F-value column was larger than the number in the F-significant column. As a result CFC, City Trust, Diamond, HFCK, NIC and Standard Chartered banks had significant

regressions according to the F-Tests. Further, the R-squared values were 0.0004, 0.00524, 0.01518, 0.00951, 0.00997, 0.000159, 0.00008, 0.00769 and 0.01379 for Barclays, CFC, City Trust, Diamond Trust, HFCK, KCB, NBK, NIC and Standard Chartered banks respectively . NBK had the lowest value of R-squared of 0.00008 while City Trust had the highest of 0.01518. These low results were shown by the adjusted R-squared values which indicated that there would be no significant change in the results with the use of more data.

Table 2 Regressed Relationships between Bank Returns and Dummy Variables

	N	INTERCEPT	COEFF	F-TEST	F-SIG	R ²	ADJ R ²
		-0.00129*	0.00004*				
BARCLAYS BANK	140	-0.08863** 0.92950***	0.24122** 0.80972***	0.05819	0.80972	0.00040	-0.00640
		0.01894*	-0.00014*				
CFC	130	1.47827** 0.14179***	-0.82094** 0.41321***	0.67395	0.41321	0.00524	-0.00253
		0.07500*	-0.00147*				
CITY TRUST	56	1.41865** 0.16175***	-0.91231** 0.36566***	0.83231	0.36566	0.01518	-0.00306
		-0.01758*	0.00059*				
DIAMOND TRUST	145	-0.41608** 0.67798***	1.17205** 0.24313***	1.37370	0.24313	0.00951	0.00259
		-0.00403*	0.00024*				
HFCK	148	-0.23478** 0.81471***	1.21273** 0.22719***	1.47072	0.22719	0.00997	0.00319
		0.00877*	0.00019*				
KCB	150	0.26088** 0.79455***	0.48598** 0.62770***	0.23617	0.62770	0.00159	-0.00515
		0.01434*	0.00003*				
NBK	148	0.68793** 0.49259***	0.11048** 0.91218***	0.01221	0.91218	0.00008	-0.00677
		-0.00468*	0.00022*				
NIC	142	-0.27170** 0.78625***	1.04150** 0.29944***	1.08472	0.29944	0.00769	0.00060
		-0.00772*	0.00014*				
STD CHARTERED	146	-0.89496** 0.37230***	1.41880** 0.15812***	2.01299	0.15812	0.01379	0.00694
		*Regression Variable	**T-Statistic			***P-Value	

Source: NSE Data Bank

4.2.4 The Projected and the Realized Return after the Crisis Began

Table 3 Analysis of the Projected and Realized Returns after Crisis

BANK	Average Abnormal Returns
BARCLAYS BANK	0.076
CFC	0.058
CITY TRUST	0.105
DIAMOND TRUST	0.160
HFCK	0.095
KCB	0.090
NATIONAL BANK OF KENYA	0.081
NIC	0.092
STD CHARTERED	0.103
MEAN	0.862
Z-Value	2.585

Source: NSE Data Bank

The mean for all the nine banks is 0.862 which is multiplied by the square root of 9 to get 2.585. The critical value of Z is 1.96 at 95 % confidence level. This means there is a significant difference between the actual return and the projected returns after the set in of the crisis. The actual returns is higher than the projected returns.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the findings, conclusions and discusses the limitations of this study. The areas for further study are discussed too.

5.2 Effects of the 2007-2010 global financial crisis on the returns of commercial banks

This study found out that, there was a weak correlation between bank returns for the period before and during the crisis as shown in Table 1. The regression analysis also revealed that the relationship between the returns and the dummy variables was not strong as shown in Table 2. However, the analysis of the difference between the projected and the realized returns for the period after the crisis began was significant recording a Z-value of 2.585 which is higher than the critical value of 1.96 as shown in Table 3.

The significant difference between the projected and the realized returns is an indication that there was reaction of the listed commercial banks to the financial market forces that was not like before the crisis since the projected returns is much lower than the actual returns. This means the information of the financial crisis did not affect the listed banks. From Table 3 it can also be deduced that the average abnormal returns are significantly different from zero for all the listed commercial banks and if significant the crisis is assumed to have no impact on the returns. The z-value is also higher than the critical value as shown in Table 3 confirming that none of the listed commercial banks felt the crisis.

5.3 Conclusion

The expectations were that during the crisis operations of financial institutions were to be affected negatively which in turn was to affect the returns of those institutions respectively but the analysis of the returns by the regression model for the period after the set-in of the crisis showed a positive significant difference between the projected and the actual returns. The difference indicates the presence of other factors beyond the control of the study which caused the differences and in any economy each market segment reacts differently to market information and the presence of adverse information means that the prices generally moves towards losing than gaining but in this case stocks gained more than the expectations. This confirms that the listed commercial banks in Kenya were not affected by the crisis even though the crisis was reported to affect the economy in general.

5.4 Recommendations

There should be a policy to open up the Kenyan banking industry to the global market. The more developed financial markets mobilize funds from all over the world and, despite the risks that go with it, they reap more benefits. The fact that there are contradicting findings about the crisis in the banking industry depending on the data used indicates the connectedness of the banking industry is not strong.

Credit creation should be controlled to ensure that there is no financial innovation that will lead to unsecured lending to the borrowers in their many forms. The creativity of the financial institutions in concocting sophisticated deals that generated magical profits caused wrought havoc to both financiers and investors alike such creativity should be avoided.

5.5 Limitations of the Study

One of the weaknesses of this study is the operationalisation of the financial crisis using NSE prices. Due to the informational inefficiency of the securities market and the information asymmetry between the management and the traders on the stock market, it is not sufficient to assume that stock market prices can be used to measure the manifestation of the crisis among bank. Specifically, stock market prices can measure more accurately the reaction of traders to information revealed to them but they may not capture what is going on deep inside the banks. The regression models showed a weak relationship between the crisis and returns of banks. The use of either better models or better data to conduct the analysis may solve this problem.

5.6 Suggestions for Further Studies

This study can be improved to provide more plausible results by investigating the nature of reactions by depositors and loan holders in the banking industry to any information in the market. This study focused on the effect of the crisis to the returns of the commercial banks listed at the NSE during the crisis period, a study to improve on this should be done to investigate how shareholders reacted to the information about the crisis. This efficiency is a debatable matter in itself which can be investigated. Other than using the linear model the study could be done using other models like the parabolic model or a

cubic model to see how the variables relate, or confidently provide room for concluding no relationship at all.

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APPENDIX I

LIST OF BANKS ON THE NSE

Source: NSE 2012

- 1.** Barclays Bank of Kenya Ltd.
- 2.** CFC Stanbic Bank Ltd.
- 3.** City Trust Bank Ltd.
- 4.** Co- operative Bank of Kenya Ltd.
- 5.** Diamond Trust Bank Kenya Ltd.
- 6.** Equity Bank Ltd.
- 7.** Housing Finance Ltd.
- 8.** Kenya commercial Bank Ltd.
- 9.** National Bank of Kenya Ltd.
- 10.** NIC Bank Ltd.
- 11.** Standard Chartered Bank Ltd.