

**THE ROLE OF CASH FLOW INFORMATION IN PREDICTING
FINANCIAL DISTRESS AMONG COMMERCIAL BANKS IN KEN YA**

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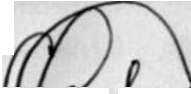
SUPERVISOR

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DECLARATION

I declare that this my original work and to the best of my knowledge has not been presented for examination at any other university



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DEDICATION

I would like to dedicate this work to my family member especially my Mother, Jane Smart, my sister Miss Olivia Davies , All My brothers and Memorial of Munah Livingstone for their caring, support, motivation and iove thai heipea me tiirough this arduous time of my studies while away from home .

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Finally, to God be the Glory for great things He has done.

ABSTRACT

The study attempts to predict corporate financial distress amongst commercial banks in Kenya during the period 2007-2011, the study employs the use of panel data regression model, the researcher analyzed financial ratios relating to cash flow information. The significance of this study is based on the fact that financial distress causes commercial banks to collapse in many instances and have a negative effect on the entire economy of a country, as commercial banks play a key role in serving as intermediary between household and firms, thereby creating the platform for provision of needed funding for investment opportunities. Due to changes in the operating environment, several licensed institutions, mainly commercial banks, have had to merge (combine their operations in mutually agreed terms) or one institution takes over another's operations (acquisitions). Some of the reasons put forward for mergers and acquisitions are: to meet the increased levels of share capital; expand distribution network and market share; and to benefit from best global practices among others.

The findings of the study indicate that Interest to total net flow is statistically significant and has positive influence on the financial distress, Dividend payout, Cash dividend coverage, are not statistically significant and have positive influence on the financial distress, whereas Cash flows from operating activities to customers deposit is statistically significant but negatively influences financial distress.

On the basis of the study, it can be concluded that the effects or consequences of financial distress can be lessened if firms manage their cash flow from operating activities and transactions that require the utilization of cash such as payment of interest and dividends. If firms properly manage their cash, this will ultimately increase profitability of these firms and reduces the risk of facing financial distress which may result to bankruptcy.

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LIST OF ABBREVIATIONS

AN	Artificial Neurons
ANN	Artificial neural networks
BSDM	Balance Sheet Decomposition Measure
CBK	Central Bank of Kenya
CDC	Cash dividend coverage
COA	Cash flows from Operating activity to customer deposit
CSDT	Cash Flow over Total Liabilities
DIV	Dividends paid/Cash flow from operating activities
FD	Financial Distress
ICT	Information Communication Technology
INT	Interest/Total net flow
MDA	Multiple Discriminant Analysis
NITE	Net Income to total equity
NITE	Net Income to Total Equity
NPV	Net Present value
PD	Probability of Default
RETA	Retained Earnings to Total Assets
SATA	Sales over Total Assets
SPSS	Statistical Package for Social Sciences
TDTE	Total Debt to Total Equity
UK	United Kingdom
US	United States
WCTA	Current assets minus current Liabilities over Total Assets

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The question of the continuing viability of an enterprise is of concern to all parties involved with the existence of the enterprise. A reliable assessment of a company's distress probability is useful to a large number of economic agents, including potential investors, lenders, clients, suppliers, etc. If it is possible to recognize failing companies in advance than appropriate action to reverse the process can be taken before it is too late (Charitou et al., 2002). This explains the constant attention paid to bankruptcy prediction modeling in the finance and accounting literature ever since the pioneering work by Beaver (1966). Business failure leads to the discontinuity of the firm's operation, and it has a significant effect on anyone who is related to the firm (creditors, stockholders, suppliers). Consequently, the establishment of reliable business failure prediction methodologies and models is a problem of major practical importance.

The factors that lead businesses to failure vary from one firm to another. Many economists attribute the phenomenon to high interest rates, recession-squeezed profits and heavy debt burdens. Furthermore, industry-specific characteristics, such as government regulation and the nature of operations, can contribute to a firm's financial distress. However, studies of patterns of business failure in the UK, US, Canada and Australia found that small, private and newly founded companies with ineffective control procedures and poor cash flow planning are more vulnerable to financial distress than large well-established public firms (Kip, 2002). The economic cost of business failures is significant; evidence shows that the market value of the distressed firms declines substantially prior to their ultimate collapse and hence, the suppliers of

capital, investors and creditors, as well as management and employees, are severely affected by business failures (Laitinen and Kankaanpaa, 2009).

Several statistical methods have been developed to predict corporate failures. The statistical technique such as those adopted by Beaver (1966) as noted by Appiah and Abor (2010) begs the question of dependence on a single ratio rather than taking a holistic view of possible complex factors that may indicate future bankruptcy. Zavgren (1993) argues such technique creates inconsistent signals since different variables could give conflicting forecast. Therefore, alternatives that guarantee consistency are imperative. Altman (1968) model has been reviewed by many scholars and proved to provide a better predictor of corporate failure. In Altman's models, the highest contributor of corporate failure was the profitability ratio, earnings before interest and taxes/total assets, whilst the least was working capital/total assets. He argues that the profitability ratios contribution is not surprising, considering that the incidence of profitable firms' failure is almost nil.

1.1.1 Cash Flow Information

Cash flow information assists financial statement users in obtaining the relevant information concerning the use and source of virtually the entire financial resources over a given time period (Rose et al, 2007). Specifically, the kind of information that the cash flow statement contains include details of operating, investing, and financial activities (Macve, 1997). Financial investment ratios have proved vital for purposes of financial analysis over several decades, with the effect that the traditional ratio analysis techniques have become quite well established in literature. Traditionally, financial analysis, for a long time, depended on accounting performance via profitability measures such as return on assets and net sales to income, among others. These

forms of ratios, however, are affected by the fundamental drawbacks that are characteristics of accrual based accounting' (Albrecht, 2003).

The information contained in a cash flow statement stresses the existing differences between on one hand, the operating profits of a firm and on the other hand, the decrease or increase in bank/cash balance over a similar accounting period. Due to this, a cash flow statement is important to shareholders, suppliers, creditors as well as other stakeholders of a business entity (Knechel et al, 2007).

This is in addition to helping to expand or maintain capacity of operations, with regard to investing in fixed assets. There are also the issues of fulfilling such future obligations as liabilities repayment, as well as dividends payment (Knechel et al, 2007).

Increased working capital investment, coupled with elevated fixed assets replacement costs, lead to an added pressure in as far as the cash flow of a firm is concerned. Recession and inflation have seen users and management of financial statement paying more attention to information contained in cash flows. In the case of inflation, a lot of businesses located in the developed nations have now been accustomed to the practice of comparatively low rates of inflation with respect to the inclusion of "very low inflation into their cash flow forecast" (Ward, 2003). While it is vital to assess the amount of cash that a business in question actually generates, nevertheless, a majority of the investors opt to instead lay more emphasis on the net income of such a company. Given that such historical and projected company's earnings figures may be accessed with relative ease; there is every temptation to utilize data on net income, as opposed to cash flow data. Nonetheless, earnings, like all other metrics of finances, are not without their

problems (Knechel et al, 2007). In the real sense, earnings are more of an accounting measure, as opposed to actual cash received by a given company.

Unlike what is popularly believed, earnings, in themselves, are not a representation of the actual cash that a firm may generate over a given time period. For instance, such items as depreciation are quite evident on the income statement of a company and yet in the actual sense, these are not a reflection of cash exchange within any period of time. Cash flow is an index of the money that is actually received by or paid out by a firm for a certain time period (Albrecht, 2003). This index is not inclusive of non-cash accounting charges such as depreciation. It is also important to note that cash flows are generally objective in nature. As such, no value judgment exists as to "how and when revenues may have been recognized (Knechel et al, 2007).

1.1.2 Use of Cash Flow Information as a Predictor of Financial Distress

The significance of a cash flow analysis towards a bankruptcy prediction of a firm has been augmented by a study carried out by Terry Ward and Benjamin Foster in 1997 (ward and Foster, 1997). These two authors compared the trends in the various components of a cash flow statement - operating cash flow, investing cash flow and financing cash flow. This was more of a comparative study that consisted of healthy companies on one hand, and firms that had consequently filed for bankruptcy, on the other hand (Wells, 2005). The observation by these authors was that healthy companies have a tendency towards comparatively stable association amongst the three components of a cash flow: operating, investing and financing activities.

In this case, healthy companies were seen to rectify a deviation from the norm within a period of one year. In addition, the authors noted that unhealthy companies were characterized by depreciating cash flows from operating, investing and financing cash flows about one or two

years before they filed for bankruptcy. Moreover, unhealthy companies had a tendency to expend large amounts of its sources in comparison to what these sources brought to a company, just before they were declared bankrupt (Berry et al, 2005).

A lot of the studies have arrived at a conclusion that cash outflow and inflow levels from different business activities share a high level of correlation. In case one part of a system fails to function, this could result in a failure, if not endangerment, to the whole firm (Mulford & Comiskey, 2005). The prediction criteria for business failure are often made use of for two basic reasons. First, the success or failure of a business has to some extent, been fundamentally associated with the net outflow and inflow cash elements from a number of business activities (Bernstein & Wild, 1999). For instance, the failure by a company to obtain sufficient cash from a number of its operations could result in such a firm having to borrow extra cash, or even be forced to do away with several of its capital investments as a solution of meeting its obligations. Should such a situation go on for a longer time period, such a firm may be faced by a state of imminent bankruptcy.

1.13 Banking Industry in Kenya

The Banking industry in Kenya is governed by the Companies Act, the Banking Act, the Central Bank of Kenya Act and the various prudential guidelines issued by the Central Bank of Kenya (CBK). The banking sector was liberalized in 1995 and exchange controls lifted. The CBK, which falls under the Minister for Finance docket, is responsible for formulating and implementing monetary policy and fostering the liquidity, solvency and proper functioning of the financial system. As at December 2011 there were 46 banking and non bank institutions, fifteen micro finance institutions and 109 foreign exchange bureaus. According to the Central Bank of

Kenya 2011 annual report, there are a total of 45 licensed commercial banks in the country and one mortgage finance company. Out of the 45 institutions, 32 are locally owned and 13 are foreign owned. The locally owned financial institutions comprise 3 banks with significant shareholding by government and state corporations, 28 commercial banks and 1 mortgage finance institution. However out of all the banks only 10 of them are listed in the Nairobi Security Exchange Commission having met the conditions of listing and applied for the same. The Central Bank of Kenya annual supervision report (2011) categorizes the financial institutions into three tiers; Large, Medium and Small in terms of net assets. Out of the 45 institutions, 13 were in the large peer group with aggregate net assets of over Ksh. 15 billion. This is the tier that Equity Bank falls based on both its asset and customer deposit base. The medium peer group comprise of 17 institutions with net assets ranging between Ksh. 5 billion and 15 billion, whereas the small peer group had 15 institutions with net assets of less than Ksh. 5 billion.

Over the last few years, the banking sector in Kenya has continued to grow in assets, deposits, profitability and products offering. The growth has been mainly underpinned by an industry wide branch network expansion strategy both in Kenya and in East Africa community region as well as automation of a large number of services and a move towards emphasis on the complex customer needs rather than traditional 'off-the-shelf products. The CBK annual supervision report of 2011 emphasizes that the banking institutions will need to cope continuously with changing business environment and a continuous flood of new requirement via a robust ICT platform, while staying sufficiently agile. Consumers will continue to demand individualized services, and to demand them faster than ever. Hence banks will continue to aggressively design new products that leverage on ICT to remain competitive. Down streaming into the retail market

segment will also be expected to continue particularly with the anticipated licensing of deposit taking Microfinance Institutions.

In the coming period, according to the same report, diversification into other financial services is also expected as consumers increasingly seek "one stop financial supermarket." These developments are expected to enhance banking products being offered and bring more Kenyans into the banking space. However, the main challenges facing the banking sector today include the Finance Act 2008, which took effect on 1 January 2009 that requires banks and mortgage firms to build a minimum core capital of Ksh 1 billion by December 2012. With this requirement, it is hoped, will transform small banks into more stable organisation. The implementation of this requirement poses a challenge to some of the existing banks and they may be forced to merge to comply. The other major challenge is declining interest margins.

1.2 Statement of the Problem

In the field of corporate finance, any individual or organization (investor or credit institution) that examines the possibility of knitting up a relation or co-operation with a firm would be interested in determining its performance and viability, and predicting any possible problems that the firm may face on its operation. Business distress prediction is thus one of the most essential problems in the field of financial management (Deakin, 2002). A stakeholder prediction of business failure is important because the economic cost of business failures is significant; and therefore if an organizational failure could be detected early, it would be possible to minimize failure associated cost by undertaking such actions as shareholders withdrawing their investment, consumer looking for alternative markets, the managers making turn around strategies before it's too late. Similarly managers of an organization will be able to make arrangement to remedy the default situation before bankruptcy proceedings may be commenced. Hair et al., (2006), stress on

the importance of financial distress prediction models for credit analysis in financial institutions in which they utilize the models to evaluate the creditworthiness of customers when processing loans. To be able to predict failure each stakeholder seeks information from various sources, the most important being the annual financial statement.

The Kenyan banking industry has continued to grow both in terms of new local and foreign entrants, customer and deposit base, regionalization and increased scrutiny from the regulators specifically the Central Bank of Kenya. This new shift in the Kenyan banking industry can be attributed to the liberalization of the sector, increased adoption of information technology and improved business environment due to reforms being undertaken in the political, economic, social and cultural fields. With these changes, the level of competition in the banking industry has reached an all level high and coupled with an enlightened customers and increased scrutiny from the regulators, local banks have had to shift their attention to differentiating factors such as increasing their lending base and at the same time extending the credit facility to the low end customers that are generally considered risky. With the adoption of such a policy, several banks for example in the first quarter of 2012 have been found to face liquidity problems. Therefore it is imperative that such regulatory institutions as well as these banks themselves adopt appropriate model of predicting business failures.

A number of studies have been undertaken locally and internationally on the prediction of financial distress. Odipo and Sitati (2010) did a study on the evaluation of applicability of Altman Revised model in prediction of financial distress "a case of companies quoted in the Nairobi Stock exchange. Based on the conclusions of Odipo and Sitati (2010) that the wrong prediction may have been due to some factors such as the reliability of the data used for the

study, smoothening of data by managers especially for firms that failed eventually, this study is intended to probe further the causes of financial distress in commercial banks both listed on the Nairobi Security Exchange Commission and those not listed as a means of finding out what is responsible for financial distress in both listed and non listed banks.

Odipo and Sitati (2010) study also looked at only 10 listed companies out of 45 institutions indicating that the sample size was small to draw conclusion on financial distress on companies in the financial sector and therefore this study is geared towards looking at a specific factor of the Kenyan financial system, commercial banks as a whole. Kiragu,(1993) for his part researched on the prediction of corporate failure using price adjusted accounting data while Kogi, (2003) researched on the analysis of discriminant corporate failure prediction model based on stability of financial ratios and Kamau(2007) used cash flow ratios as a predictor of corporate failure using companies listed at the NSE.

Base on the explanation that the usefulness of cash flow information is industry specific. Cash flows importance in predicting financial distress in one industry may not be important in predicting financial distress in another industry Ward (1992). Since previous researchers normally match healthy and distress firms by industry and pool data across various industries at the Nairobi Security Exchange, results might be misleading. Strong results in one industry could be offset by weak results in another industry thus showing weak statistical interference when pooled across industries; therefore this study is geared towards predicting corporate failure in commercial banks in Kenya using incremental cash flow information. Thus, the research question arising from the study is provided below: Does cash flow Information predict corporate failure?

1.3 Research Objective

The objective of the study is to;

Determine the role of cash flow information in predicting financial distress amongst commercial banks in Kenya.

1.4 Value of the Study

The understanding of the process of predicting financial distress of a firm will help policy makers- governments and other stakeholders - to design targeted policies and programs that will actively help in preventing the acceleration of such firms to defaulting in their obligations and therefore leading to bankruptcy. This kind of model can serve as a useful tool for quick evaluation of the corporate risk profile as well as be used to track the firms to check for their default status over time. Further, the existence of such a model will help policymakers to support, encourage, and promote the establishment of these firms having had adequate information of predicting the health of such institutions. Regulatory bodies such as CBK, Capital Markets Authority and Kenya Revenue Authority can use the study findings to improve on their framework for regulation.

The study findings will also benefit management and staff of the commercial banks who will gain insight into how their institutions can effectively manage their balance sheet variable to prevent default process. This study will offer an understanding on the importance of maintaining an optimal capital structure mix as well as working capital and postulating the relationship that exist between the existing level of the variables the chance of defaulting. Several policies on the capital structure that various firms can adopt will also be addressed This is because commercial banks need to adapt to the changing needs of the current business set up and requirement of

various classes of stakeholders. As a result, the firms under study in the country and other affiliated firms will derive great benefit from the study.

This study will also create a monograph which could be replicated in other sectors of the economy. Most importantly, this research will contribute to the literature on the prediction of financial distress. It is hoped that the findings will be valuable to the academicians, who may find useful research gaps that may stimulate interest in further research in future. Recommendations will be made on possible areas of future studies.

This study is further justified since it will be of value to those interested in setting up commercial banks in the country since they will be able to understand what to do right to succeed and what if done wrong would bring the business down.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This Chapter will review, analyze and synthesize some of the earlier works on predicting financial distress in firms including commercial banks and other financial institutions. A number of prediction models will be mentioned. The predictive powers, the accuracy and shortfalls of some of the well known predictive models will be highlighted.

2.2 Theoretical Framework of Corporate Failure

The modern concept of risk has emerged as a central issue in finance over the last three decades, a period which has witnessed several companies going under. Risk is defined as a condition in which there is a possibility that the actual outcome will deviate from the expected (Gallati, 2003) and observes that corporate failure risk or default risk is the oldest form of risk associated with financial markets. Scott (1981) observed that if current cash flows are able to predict corporate financial status, then past and present cash flows should be able to determine and predict corporate default. A firm with a positive cash flow is able to raise their capital and borrow from the capital market, while firms with a negative or insufficient cash inflow are unable to borrow and therefore facing the risk of default. According to this argument, a firm is assumed to go bankrupt whenever the current year profit or cash flow is negative or less than the debt obligations or whenever the sum of its current year profit and the expected value of equity is negative (Grannati, 2003).

Beaver (1966) is commonly regarded as the pioneering work on bankruptcy prediction models. A firm is viewed as a 'reservoir of liquid assets' for the dynamic process of inflows and outflows of liquid assets. The bankruptcy risk of a firm is measured by the probability that the reservoir will

be exhausted. At that point the firm will be unable to settle its financial obligations. Four propositions were made in Beaver's paper that will impact on the firm's bankruptcy rate namely; the larger the reservoir, the lower the probability of failure; the quicker the liquid-asset inflow from operations, the lower the probability of failure; the larger the amount of debts held, the higher the probability of failure and also the larger the operational expenditures, the higher the probability of failure.

Firm future cash flows affect its ability to enter the equity market to raise capital, as these cash flows are not directly paid out in a form of dividend and instead they are retained and could be reinvested in profitable projects. While, shareholders allow managers to retain cash, the managers may misuse the retained cash through investment in unprofitable or negative projects. Therefore, the potential agency problems exist as a result of a conflict of interest between shareholders. Jensen (1986) argued that increased leverage or increased dividends can help to lower the cost of asymmetric information between managers and shareholders, so the free cash flow should be distributed to shareholders as dividends in order to maximise firm value. However, increases the use of debt, moves ownership from equity to debt holders and increasing the firm's probability of default (Al-Malkawi, 2005).

Whilst normative theories attempt to explain by deductive reasoning why a certain proportion of businesses might be expected to fail, positive theories attempt to explain by inductive reasoning why in practice they do fail. These theories are usually supported by empirical results. Although the majority of bankruptcy studies were conducted in line with the positivistic paradigm, very few researchers clearly identified an underlying theory. Instead, they chose to select the potential predictor variables based on their intuition, popularity and predictive success in previous similar

studies. Cash flow analysis is certainly part of traditional financial analysis in which management, executives, investors and other stake holders, can utilize to determine the effectiveness of a company's overall strategy'. Thus according to Bhalla (2004), to fully comprehend a company's viability as an on-going concern, it is advisable that a few simple ratios from a company's financial data on its cash flow statement is computed. This financial data can be found in the quarterly or annual financial reports that publicly trading companies are required to disclose to their particular market's regulatory agency as well as the general public and shareholders.

Several studies have been undertaken to explore the cause of a corporate failure. Aziz et al. (1988) used cash flow variables in their model in predicting corporate failure. They report that default is primarily caused by firm-specific idiosyncratic factors while Denis and Denis (1994) argue for a systematic nature of bankruptcy risk. On their part Kranhnen and Weber (2001) presented a normative set of generally accepted rating principles that point out the necessity of links among industry risk, business risk, financial risk, management risk, facility risk, and probability of default. Grunert et al. (2005) analyzed credit file data from four major German banks and found empirical evidence that the combined use of financial and non-financial factors leads to a more accurate prediction of future default events than the single use of each of these factors.

2.2.1 Cash Flow Theory

Cash flow theory suggests that even though cash flow from operating activities may be the most important predictor of financial distress other net cash flow should also have incremental predictive usefulness why then have prior financial distress studies failed to show that net cash

flow from investing and financing activities are useful in predicting financial distress Gilbert et al (1990).

One possible explanation is that the usefulness of cash flow information is industry specific. Cash flows important in predicting financial distress in one industry may not be important in predicting financial distress in another industry. Since previous researchers normally match healthy and distress firms by industry and pool data across various industries, results might be misleading. Strong results in one industry could be offset by weak results in another industry thus showing weak statistical inference when pooled across industries Ward (1992).

The belief that usefulness of cash flow is industry specific is consistent with cash flow theory. Cash flow theory can be traced to the concept of financial flexibility advocated Heath (1978). According to Heath (p-20) financial flexibility is the capacity of the firm "to control cash receipt and payment to survive a period of financial adversity". The ultimate aim of financial flexibility is to achieve a state of equilibrium in total cash flow so that available purchasing power will be equal to need set by established limits management decisions. The concept of financial flexibility indicates that the occurrence of certain events trigger unexpected drop in total cash flow, thus forcing a company to take corrective action to regain cash flow equilibrium.

2.2.2 Balance Sheet Decomposition Measure Entropy theory

One way of identifying firms' financial distress could be a careful look at the changes occurring in their balance sheets. Following this procedure, the argument would tag along this guideline: "like any enterprise, firms would tend to maintain a state of equilibrium that ensures sustaining existing firms' structure". If a firm's financial statements reflect significant changes in their balance sheet composition of assets and liabilities over a reasonable period of time, it is more likely that the firms are incapable of maintaining the equilibrium state. Since these changes are

likely to become uncontrollable in future, one can foresee financial distress in these firms. This economic rationale of firms' likely failure is the argument of BSDM or entropy theory Pawlak (1982), Ziarko (1993) and Dimitras et al. (1999).

2.2.3 Gambler's Ruin Theory

The basic idea of this theory relates with the game of a gambler, who plays with an arbitrary sum of money. Gambler would play with some probabilities of gain and loss. Game would continue until the gambler loses all his money. Theory would also talk about gambler's ultimate ruin and expected duration of the game Scott (1981) and Morris (1998).

In context of the firm's financial distress, firm would take the place of a gambler. Firm would continue to operate until its net worth goes to zero, point where it would go bankrupt. The theory assumes that firm has got some given amount of capital in cash, which would keep entering or exiting the firm on random basis depending on firm's operations. In any given period, the firm would experience either positive or negative cash flow. Over a run of periods, there is one possible composite probability that cash flow will be always negative. Such a situation would lead the firm to declare bankruptcy, as it has gone out of cash. Hence, under this approach, the firm remains solvent as long as its net worth is greater than zero. This net worth is calculated from the liquidation value of stockholders' equity Scott (1981) and Morris (1998)

2.2.4 Cash Management Theory

Short-term management of corporate cash balances is a major concern of every firm. Cash or funds flow statements of the firms report this cash management function of corporations, particularly from 1980s. An imbalance between cash inflows and outflows would mean failure of

cash management function of the firm. Persistence of such an imbalance may cause financial distress to the firm and, hence, failure Wilson (1997a, 1997b, 1998).

2.2.5 Credit Risk Theories

Credit risk theories, closely related to Basel I and Basel II accords, mostly refer to the financial firm. The proposed Basel II framework consists of three pillars: (1) minimum capital requirements, currently set equal to 8%, according to a purposely-defined capital ratio, (2) supervisory review of an institution's internal assessment process and capital adequacy, (3) effective use of public disclosure to strengthen market discipline as a complement to supervisory efforts.

The current Basel II Accord utilizes concept of a capital ratio that is calculated dividing bank's capital amount by a measure of risk faced by it (referred to risk-weighted assets). There is a wide variety of risks faced by banks and other financial institutions these days including credit risk, market risk, operational risk, investment risk, interest rate risk, exchange rate risk, concentration risk and country transfer risk. Basel II focuses mainly on the first three of these with a view that other risks are implicitly covered. Basel II framework adequately treats both market risk (that results due to trading activities) and the operational risk (defined as the risk of losses due to inadequate or failed internal processes, people and systems, or external events). However, the Accord clearly recognises that, for most banks, it is the credit risk that matters more. Focus of this study is also limited to credit risk only, for it is related to counter party failure (the borrowing firm, in our case).

As noted by Westgaard and Wijst (2001), credit risk is the risk that a borrower/counterparty will default, i.e., fail to repay an amount owed to the bank. Credit risk includes all of the counterparties and reasons for

which they may default on their obligations to repay. Following Basel II guidelines, in the last few years, a number of attempts have been made to develop internal assessment models to measure credit risk. A few of them have gained more respect than others including JP Morgan's Credit Metrics, Moody's KMV model, CSFP's Credit Risk and McKinsey's Credit Portfolio View. More importantly, with one or two exceptions, these models and risk predictions thereof have been based on either micro or macroeconomic corporate finance theories. Collectively these models may be referred as credit risk theories.

The most famous microeconomic theory is related to the theory of option pricing as suggested by Black and Scholes (1973) and later developed by Merton (1974). An option is a security that gives the holder a right to execute a transaction (to buy or sell an asset) in future at a price determined today. Options are of two types: a call option gives the right to buy, whereas the put option means the right to sell. Options are used in many instances including speculation, hedging a borrowing, capital preservation, covered call etc. A simple example is a call option on a common stock, in which the payout on the call is determined solely by the value of the stock. Excess of stock price over the strike price determines the payout to holder who will exercise the call. In the opposite case, payout will be zero and the holder will not exercise his right. Right pricing or valuation of options is important. Black and Scholes presented a complete general equilibrium theory of option pricing that constructed a valuation formula, which is based on observable variables. Both Black & Scholes and Merton recognize that their approach could be applied in developing a pricing theory for corporate liabilities in general. They determine the option value as the solution of a partial differential equation to which the price of any option must conform, subject to boundary conditions given by the form of the payout. Under this asset value option pricing approach, firms' default process is endogenously related to its capital

structure. Firm would default on its obligations to the bank, if the value of its assets falls below certain critical level determined by the respective credit risk model.

2.3 Factors Affecting A Firm's Corporate Failure Rate

Several variables have been identified that affect the rate a firm's failure. Whenever a organization exhibit such characteristics, then the chance of the firm being unable to meet its obligation increases. A company is generally financially distressed whenever its earnings before interest and tax depreciation and amortization are less than its interest expenses. Financial leverage improves financial performance when business financial prospects are good but adversely impact on financial performance when things are going poorly. As a result, increasing the ratio of debt to equity in a company's capital structure implicitly makes the company relatively less solvent and more financially risky than a company without debt.

2.3.1 Leverage

Hoshi et al. (1990) observe that the costs arising from information asymmetries at debt renegotiations are smaller within business groups. These decreased potential costs of financial distress allow group members to ex ante take on more debt, thus realizing more tax gains and avoiding relatively expensive equity issues and that a coinsurance effect across activities in diversified groups could further decrease costs of debt, but according to Berger and Ofek (1995), this should be of rather limited importance. Furthermore, an intra-group optimization process may take place via the internal capital market to reduce costs at all levels again increasing ex ante optimal leverage.

According to Chiritou (2002), many new businesses will have to put together a business plan to present to the bank before it receives loans or financial help. The time and effort put into these plans is crucial for success. Bad planning or poor information on which the plan is based is likely

to lead to difficulties for the firm. For example, if the firm plans to sell 2,000 units per month in the first year because it used only limited market research and ends up only selling 500 per month, it will soon be in serious danger of collapse.

2.3.2 Efficiency

Following Altman (1968), managerial efficiency in the bankruptcy prediction literature is often defined as sales-generating ability (proxied by a capital turnover ratio). He observes that *ceteris paribus*, the more efficient a business group, the better its performance. As argued above, this may have positive effects on the survival chances of the subsidiary. Costs of production can rise for a number of reasons. There may have been wage rises, raw material prices might have increased (for example the price of oil or gas) the business might have had to spend money on meeting some new legislation or standard and so on. In many cases, a firm can plan for such changes and is able take them into account but if the costs rise unexpectedly, this can catch a firm off guard and tip them into insolvency (Kip, 2002).

23.2 Profitability

Falling sales might be a sign that there might be something wrong with the product or the price or some other aspect of the marketing mix and with this decline in performance, it will be expected that a firm will not realise adequate cash flow to finance the payment of its obligations. Sometimes the fall in sales might be as a result of the competition providing a better product or service - in part the business can do something about this they have to recognize it in the first place (Moyer, 2006). Changing tastes, technology and fashion can cause demand for products to fall - the business needs to be aware of these trends. Demand might fall for other reasons not in the firm's control. It might be due to a change in the economic climate of the country. If the

economy is experiencing a downturn then maybe people may not have as much money to spend on the businesses products or services. The Bank of England may have increased interest rates and this has led to people cutting back their spending (Sipika and Smith, 2002).

A business group may decide to keep a subsidiary afloat, even if it incurs severe losses and has been doing so for several years. This may be an economically sound decision, based on strategic, taxation, control or other group-specific reasons. Alternatively, internal capital markets may cause "socialism" within a group or conglomerate a situation where stronger divisions subsidize weaker ones. Empirical evidence of this phenomenon is reported in Claessens, Fan and Lang (2002). To reinforce this point Lamont (1997) shows that US oil companies subsidized underperforming non-oil activities during the early 1980s when profits from oil operations were extremely high. He points out that after the oil shock of 1986, subsidized nonoil investments were significantly reduced or stopped altogether. Preceding findings and arguments imply that adding information on group level performance could be useful for bankruptcy prediction purposes. Specifically, strong group performance should positively affect survival chances of subsidiaries.

2.33 Liquidity

Using data on Japanese keiretsu and bank relationships, Hoshi et al. (1991) show that, liquidity constraints of group member firms' are weaker than those of stand-alone companies. If access to cash is less restricted within an organization, this could lead to a situation where companies belonging to a business group pay less attention to liquidity as compared to stand-alone companies, as the latter have no choice but to resort to expensive short-term financing in case of liquidity shortages. Deloof(2001) empirically confirms this for private Belgian companies. For a

firm belonging to a business group, low liquidity need therefore not necessarily reflect a higher probability of failure.

For many small and newly formed businesses, liquidity is often the single most important reason for business failure. The problem arises when the money coming into the company from sales is not enough to cover the costs of production. It is important to remember that it is a case of having the money to be able to pay debts when the debts are due not simply generating enough revenue during a year to cover costs (Patrick, 2004).

2.4 Corporate Financial Distress Prediction Models

2.4.1 Discriminant Analysis

Altman et al. (1981) discusses discriminant analysis in-depth and reviews several financial application areas. According to Altman (1981), MDA is a statistical technique used to classify an observation into one of several *a priori* groupings dependent upon the observation's individual characteristics. It is used primarily to classify and/or make predictions in problems where the dependent variable appears in qualitative form, for example, male or female, bankrupt or non-bankrupt. Therefore, the first step is to establish explicit group classifications. Some analysts referred to discriminant analysis as "multiple" only when the number of groups exceeds two. After the groups are established, data are collected for the objects in the groups; MDA in its most simple form attempts to derive a linear combination of these characteristics which "best" discriminates between the groups. If a particular object, for instance, a corporation, has characteristics (financial ratios) which can be quantified for all of the companies in the analysis, the MDA determines a set of discriminant coefficients. When these coefficients are applied to the actual ratios, a basis for classification into one of the mutually exclusive groupings exists.

The MDA technique has the advantage of considering an entire profile of characteristics common to the relevant firms, as well as the interaction of these properties. A univariate study, on the other hand, can only consider the measurements used for group assignments one at a time.

When utilizing a comprehensive list of financial ratios in assessing a firm's bankruptcy potential, there is reason to believe that some of the measurements will have a high degree of correlation or collinearity with each other. While this aspect is not serious in discriminant analysis, it usually motivates careful selection of the predictive variables (ratios). It also has the advantage of potentially yielding a model with a relatively small number of selected measurements which convey a great deal of information. This information might very well indicate differences among groups, but whether or not these differences are significant and meaningful is a more important aspect of the analysis. Perhaps the primary advantage of MDA in dealing with classification problems is the potential of analyzing the entire variable profile of the object simultaneously rather than sequentially examining its individual characteristics. Just as linear and integer programming have improved upon traditional techniques in capital budgeting, the MDA approach to traditional ratio analysis has the potential to reformulate the problem correctly. Specifically, combinations of ratios can be analyzed together in order to remove possible ambiguities and misclassifications observed in earlier traditional ratio studies.

2.4.2 Neural Computing

Neural computing has generated considerable research interest and has been applied in various areas, including the prediction of corporate bankruptcy or financial distress. Neural computing is a computer system that consists of a network of interconnected units called artificial neurons (AN)- AN is organized in layers inside the network. The first layer is the input layer, and the last is the output layer. Hidden layers exist between the input and output layers, and there can be

several hidden layers for complex applications. Computer programs process the training sample to identify the relationships between input and output data. Neural computing is more adaptive to the real world situation because it is not subject to distribution constraints. This advantage makes neural computing an appealing tool for developing prediction models because the variance-covariance matrices of failed/non-failed firms are often not equal, and financial data seldom follow the multivariate normal distribution, each of which is a violation of the MDA assumptions.

Odorn and Sharda (2000) used the same financial ratios employed by Altman (1968) and applied ANN to a sample of 65 failed and 64 non-failed firms. The training sample comprised 38 failed and 36 non-failed firms. A three-layer neural network was created with five hidden nodes. Their model correctly identified all failed and non-failed firms in the training sample, compared to 86.8% accuracy by MDA. Regarding the performance with holdout samples, ANN had an accuracy rate of 77% or higher, whereas MDA could hit the target only between 59% and 70%. Subsequently, several studies also revealed that ANN outperformed other prediction models (Wilson and Sharda 1994).

2.43 Financial Ratio Analysis

Prior to the development of quantitative measures of company performance, agencies were established to supply a qualitative type of information assessing the credit-worthiness of particular merchants. One of the classic works in the area of ratio analysis and bankruptcy classification was performed by Beaver (1967) a number of indicators could discriminate between matched samples of failed and non-failed firms for as long as five years prior to failure. The study implies a definite potential of ratios as predictors of bankruptcy. In general, ratios measuring profitability, liquidity, and solvency prevailed as the most significant

indicators. However, the order of their importance is not clear since almost every study cited a different ratio as being the most effective indication of impending problems.

Grunert et al,(1997)pointed out that although these works established certain important generalizations regarding the performance and trends of particular measurements, the adaptation of the results for assessing bankruptcy potential of firms, both theoretically and practically, is questionable. In almost every case, the methodology was essentially univariate in nature and emphasis was placed on individual signals of impending problems. According to Altman (1981) ratio analysis presented in this fashion is susceptible to faulty interpretation and is potentially confusing. For instance, a firm with a poor profitability or solvency record may be regarded as a potential bankrupt. However, because of its above average liquidity, he points out that the situation may not be considered serious. The potential ambiguity as to the relative performance of several firms is clearly evident. Altman further argues that the question that will eventually have to be asked on the use of ratios in predicting corporate failure is on which ratios are most important in detecting bankruptcy potential as well as determining what weights should be attached to those selected ratios.

Financial literature identifies a number of variables as significant indicators of corporate failure. The choice of factors and hypothesis formulation is motivated by both theoretical and empirical considerations. The selected variable should be related to the properties of the cash flow in combination with the debt obligations and the value of the firm to make use of cash flow theory and distress theory. The more sensitive a measure is to default risk or bankruptcy risk, the more quickly it can reflect changes in a firm's health and, therefore, the more effective that factor will be as an early warning factor. The following variables will be adopted for the analysis: net

income plus depreciation (cash flow) over the total debt (CSDT), current assets minus current liabilities over total assets (WCTA), net income to total equity (NITE), sales over total assets (SATA), retained earnings to total assets (RETA) and total debt to total equity (TDTE). The cash flow over total liabilities (CSDT) gives a direct measure of firm cash inflows in relation to the total debt outstanding. It measures the extent to which cash flow can service debt holders.

Firms with a high positive cash flow have more capacity to pay their debt obligations and to raise funds from external sources. Thus the CSDT is expected to be negatively related to the probability of default (PD). Another important variable is the free cash flow proxied by the retained earnings to total assets. Free cash flow theory suggests that a high free cash flow has a negative impact on corporate value as managers could misuse the free cash (e.g. invest in a negative NPV project). Therefore, free cash flow ought to be more positively and more significantly related to the probability of default.

A firm's liquidity affects the probability of default as the unavailability of liquidity affects the firm's ability to meet its obligations. It is expected that a firm's liquidity is negatively related to the probability of default (PD). A firm's ability to pay its debt obligations is positively related to its profitability measured in terms of NITE. It is expected that the PD is negatively related to NITE. A firm's leverage is considered a key factor in determining default risk. To control for the effect of a firm's capital structure, the total debt over total equity (TDTE) is used to measure and investigate the effect of capital structure on the firm's PD. Therefore, a positive relationship between a firm's leverage and PD is expected.

Two variables are intended in the study to capture, in an indirect way, some of the distributional properties of cash flow: size and age. Both are considered to have an effect on a firm's cash flow

and its ability to borrow. It is argued that small companies are more prone to go bankrupt because their access to the credit markets is more limited than for large companies (Bernnake and Gertler, 1995). A firm's size is expected to have a negative effect on the probability of default. Firm size is measured by the logarithm of firm's total assets (SIZE). This is supported by the argument that large firms tend to have easier access to a wider variety of capital markets and can diversify their. It is argued that young companies are more likely to fail than experienced companies (Altman, 1993). A firm's age (AGE) is therefore also used to predict the PD. It is argued that young firms have a higher PD than older ones; the variable is expected to have a negative impact on corporate failure. The firm's age has been used by previous studies such as (Westgaard and Wijst (2001)).

2.5 Review of Empirical Studies

Lee (1982), a strong advocate of cash flow reporting, showed that the fall of Laker Airways was foreseeable on a cash flow basis. His analysis of CFFO revealed that Laker Airways was in financial trouble three years prior to failure while profits were increasing as failure approached. A stream of multivariate modelling studies began investigating the information content of this refined measure of CFFO. Using an estimation sample and a validation sample comprising 60 bankrupt and 230 non-bankrupt firms and three measures of cash flow information, viz. CFFO, CFFO/Current Liabilities and CFFO/Total Liabilities, Casey and Bartczak (1984; 1985) concluded that none of the three operating cash flow variables significantly improved the *classification* accuracy of the six accrual ratios model. Casey and Bartczak (1985) reached this conclusion on the basis of the number of firms correctly classified into their respective groups. While their conclusion is valid, there are grounds to argue that cash flow information has significant information content over accrual information in assessing the predicted probability of

failure. Predicting the probability of failure extends the mere classification into either the failed or nonfailed group and is practically more useful. For instance, the classification of a company into a non-failed group does not provide information on the likelihood of this group membership.

Ward (1994) investigated why traditional cash flow is thought to be a strong predictor of financial distress. By adding the traditional cash flow variable to a model comprising six accrual ratios and CFFO, Ward observed that the significance of cash flow from operations was not affected. Rather he found that the net income to total asset variable became insignificant. Ward (1994, p.53) subsequently concluded that traditional cash flow "is a significant predictor of financial distress because NOF is a better measure of economic income than NITA (net income to total assets), not because NOF is a naive measure of operating cash flow."

Ward's (1994) findings are inconsistent with Laitinen (1994). Several possibilities for the differences exist. First, Laitinen's study was based on 40 small and medium sized bankrupt and non-bankrupt Finnish firms, while Ward's (1994) sample consisted of 164 healthy and 63 non-healthy US firms for the estimation sample and 111 healthy and 47 non-healthy firms for the hold out sample. Ward's firms are presumably larger than Laitinen's since they were listed US firms. Secondly, Ward selected his sample from a 12 month time period only while Laitinen does not disclose the time period of his sample.

Thirdly, Ward actually tested the incremental predictive power of traditional cash flow by adding it to a model containing six accrual ratios and the CFFO variable. Laitinen however simply

compared the univariate discriminant and univariate logit performances of the two cash flow variables. Finally, the definition of CFFO may be different between Finland and USA since the computations disclosed to arrive at CFFO by adjusting net income for accruals and deferrals were not identical between the two studies.

2.5.1 Local Studies

Kamu (2007) used the Z score to calculate corporate failure of firms listed on the Nairobi Stock exchange for two consecutive years for each firm using cash flow ratios. The model was able to classify 85% of the case correctly and 15% wrongly one year prior to failure. The power of the model was 85%. This was consistent with earlier studies carried out since signs of corporate failure will be apparent one year before failure occurs. Most ratios pick out these problems at that point. However, the accuracy of the model decreases in the long run. One year prior to failure type one error was zero while type two error was 15%. There was surprising consideration that what it meant was that the model was classifying more variable entities as failure.

However, two year prior to failure type one error increase drastically relative to increase in type two errors. Many non failure companies were classified as failure because may be they were in financial distress, whereby their ratios will be weak. Cash flow adequacy (CFA) ratio was revealed as the most significant predictor of failure followed by CCDC. Cash current debt coverage ratios, however it seems the reliability of the model diminished drastically two years prior to failure.

Kiragu (1993) carried out a study on the prediction of corporate failure using price adjusted accounting data. He used a sample consisting of 10 failed firms and 10 non failed firms. Financial ratios were calculated from price level adjusted financial statistics. Discriminant model

developed showed that 9 ratios had high corporate failure predictive ability. These ratios were times interest coverage, fixed charge coverage, quick ratio, current ratio, equity to total assets, working capital to total debt, return on investments to total assets, change in monetary liabilities, total debt to total assets. The most critical ratios were found to be liquidity and debt service ratios. The results were consistent with the finance theory relating to the firm's risk. The firm has to maintain sufficient liquidity in order to avoid insolvency problems. It also needs to generate sufficient earnings to meet its fixed finance charges. The results however differed from earlier studies done by Altman (1968), concluded that liquidity ratios were not of any significance in bankruptcy prediction. Altman indicated that efficiency and profitability ratios were the most important.

Keige (1991) did a study on business failure prediction using discriminate analysis. He concluded that ratios can be used to predict company failure. However, the types of ratios that will best discriminate between failing companies and successful ones tend to differ from place to place. In Kenya current ratio, fixed charge coverage, return on earning to total assets, and return on net worth can be used successfully in predicting for a period up to 2 years before it occurs. Keige concludes that stakeholders should pay attention to liquidity, leverage and activity ratios.

2.6 Chapter Summary

This section of the study reviewed previous studies carried out researchers on predicting financial distress with the use of cash flow information.

Several foreign studies concluded that in predicting financial distress the methodology use varies from one author to another.

There were various models used by researchers in predicting financial distress including discriminant analysis, neural computing and financial ratio analysis. Out of all the models used by past researchers, there is no definite model recommended as these researchers used a particular model based on the variables.

Cash flow and accrual financial information have also been used in predicting financial distress but however, cash flow information is very essential in predicting financial distress according to many of the researchers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter sets to explain the research design, the population of interest, the basis of sample selection, the type of secondary data used, the sources of data, the techniques of analysis used and the data analysis. A multivariate model was estimated using the SPSS.

3.2 Research Design

This research used the descriptive design. This approach was chosen because it helped to ascertain and described the characteristic of the variables under investigation. The research design adopted was a cross-sectional study in which data was gathered over the period 2007 to 2011. As such, the causal study was undertaken in a non-contrived setting with no researcher interference. The unit of analysis was the individual commercial banks in Kenya.

3.3 Population of the Study

The population of interest in this study was all the commercial banks in Kenya that operated between 2007 and 2011. Currently, there are 43 commercial banks operating in Kenya (Appendix I). The reason as to why this industry was chosen is due to the availability and the reliability of the financial statements in that they are subject to the mandatory audit by internationally recognized audit firms.

3.4 Sample and Sampling Procedure

In order to obtain a representative sample from the population, a number of filters were applied. Observations of firms with anomalies such as negative values in their total assets, current assets, fixed assets, capital, depreciation or die interest paid were eliminated. In addition, only firms that continuously operated over die period 2007 to 2011 were considered in the study. Further,

observations of items from the balance sheet, and profit and loss accounts showing signs contrary to reasonable expectations were removed. Subject to the foregoing, the study was a census survey in which all commercial banks were studied, due to the manageable numbers involved.

3.5 Data Collection

Data was collected from annual reports submitted to the Central Bank of Kenya covering the period 2007 and 2011. All companies that continually operated over the period were included to ensure that the sampling frame is current and complete.

3.6 Variables and Variable Measurement

Regression analysis was used to analyze the data that was collected. On the basis of the sample data, the researcher estimates the value of the dependent variable (Y) corresponding to a given value of independence variable X.

For the purpose of this study, firms within the banking sector of Kenya if the banks has a reduction of forty percent in cash dividend payment between 2007 to 2011 it was considered as distress firm, on the contrary, firms that did not fall in this category were considered otherwise.

The study adopted the regression model developed by Pranowo (2010), which takes the form:

$$p_0 + p_1X_1 + p_2X_2 + p_3 X_3 + P_4X_4 + \epsilon$$

Where FD is financial distress or the dependent variable, if the Bank with a FD =1 or above is financially viable while a bank with FD below 1 is financially distress. The terms X_1, X_2, X_3, X_4

are the independence variables used in the study whereas ρ_0 and ρ_i are die unknown parameters (constants).

FD = Customer and bank deposits / Loan advances to banks and customers (Financial Distress)

X₁: Cash flows from operating activities to customers deposit = Cash flows from Operating activities/ Customer Deposit (COA)

X₂: Cash dividend coverage = Cash flow from operating activities/Total Dividends (CDC)

X₃: Interest to total net flow = Interest/Total net flow (INT)

X₄: Dividend payout = Dividends paid/Cash flow from operating activities (DIV)

ϵ I random error term

The reason why the above financial model used die random effect model is that, it is primarily based on the Hausman specification test, which are the scientific tests done for which type of model must be used for specific panel data regression. Therefore, the random effect model is used based on Hausman specification test. It is often said that the random effects model is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a fixed effect model is more plausible when the entities in the sample effectively constitute the entire population (for instance, when the sample comprises all of the stocks traded on a particular exchange). Since there are fewer parameters to be estimated with the random effects model and therefore degrees of freedom are saved, the random effects model should produce more efficient estimation than the fixed effects approach Brook (2008).

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter presents the results and findings of the study based on the research objectives. The results are presented in the form of summary tables. Regression and Correlation analysis are used to analyse the data to answer the research objective.

4.2 Descriptive Analysis

The descriptive analysis below shows the average and standard deviation of the different variables of interest in the study. It also presents the percentile values of the variables which helped in getting a picture about the maximum and minimum values a variable can achieve. In Table 1 below, the summary statistics of the variables included in the regression models are presented. It represents the variables of the 32 banking institutions that operated continuously in the period 2007-2011 and whose results of the five year period under consideration were available. Six commercial banks merged, one was acquired, while one was subjected to receivership and two other banks failed to provide information requested as according to their policies does provide for giving information to external third party.

Table 4.1: Summary Statistics

		FD	COA	CDC	INT	DIV
N	Valid	160	160	160	160	160
	Missing	0	0	0	0	0
Mean		.622458	37.718983	82.216949	48.760847	43.988475
Median		.400000	31.200000	92.800000	42.000000	69.400000
Std. Deviation		.221422	14.0136233	15.07067	37.0223301	32.1237788
Percentiles	25	.300000	9.600000	57.400000	25.000000	42.300000
	50	.400000	31.200000	92.800000	42.000000	79.400000
	75	.600000	59.300000	126.500000	60.100000	124.400000

Source: Calculations based on Annual reports of firms from 2007-2011

The mean value of the financial distress as a measure of a firm's signal of financial difficulty is explained by 62.2% of the independent variables and the standard deviation 22.1%. It means that the value of the financial distress can deviate from the mean to both sides by 22.1%. The mean (median) dividend payout is 43.9% (90%) lagged by total earnings. On the other hand, the average (median) all variables share a common sample size of 160 firm-years.

4.3 Quantitative Analysis

For quantitative analysis the study used two methods. At first, correlation is used to measure the degree of association between different variables under consideration and as multiple variables are influencing the problem, the study identified the crucial factors associated with financial distress. The correlation analysis is first determined to establish the regression analysis of the variables and then Heteroskedasticity and multicollinearity of the variables is established.

Data is analyzed by panel data regression Random Effect Model. The result of financial ratio indicate; Interest to total net flow is statistically significant and has positive influence on the financial distress, Dividend payout, Cash dividend coverage, are not statistically significant and

have positive influence on the financial distress, whereas Cash flows from operating activities to customers deposit is statistically significant but negatively influences financial distress.

Table 4.2 Panel Data Regression Random Effect Model Result

Dependent Variable: FD

Method: Least Squares

Included observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2	0.004810	0.003936	1.222213	0.2281
XI	-0.531667	0.689743	-0.770819	0.4449
X4	0.003864	0.003272	1.180926	0.2440
X3	0.001240	0.015396	0.080573	0.9361
C	1.258751	0.036197	34.77474	0.0000
R-squared	0.585577	Mean dependent var		1.278062
Adjusted R-squared	0.535593	S.D. dependent var		0.233202
S.E. of regression	0.226459	Akaike info criterion		-0.036054
Sum squared resid	2.256483	Schwarz criterion		0.156989
Log likelihood	5.883329	Hannan-Quinn criter.		0.037186
F-statistic	1.725247	Durbin-Watson stat		1.553013

The determinants of a firm's financial distress are investigated for the 160 firm-year observations. From Table 4.2 above, the established multiple linear regression equation becomes:

$$FD = 1.25875067602 - 0.531667140418X_1 + 0.00481034638479X_2 + 0.00124049356403X_3 + 0.00386365854176X_4 + 0.226459$$

The coefficient of intercept C has a value (1.259) and is significant. In the regression the following proxy were used to measure different variables. The financial distress of the firm was measured by the total customer and bank deposits (liability) to total advances to banks and customers by the banks. Cash flow from operating activities to customers is measured by the total cash flow from operating activities to customer deposits while the cash dividend coverage is proxied by total cash flow from operating activities to total dividends. The dividend payout is measured by the dividends paid to the total cash flow from operating activities and age of the firm is measured by the natural logarithm of the age that the firm will have been in existence.

The adjusted R^2 , also called die coefficient of multiple determinations, is the percentage of the variance in the dependent variable explained uniquely or jointly by the independent variables (cash dividend coverage, interest to operating cash flow coverage, dividend payout and age of the firm) and is 53.6 %. This means diat 53.6 % of the changes in the financial distress (FD) will be explained by the changes in the independent variables and control variables in the model. The remaining 46.4% of the changes in the FD is explained by other factors not in the model.

I he ratio of cash flows from operating activities to customers' deposit gives the capacity of the bank to cover the customer's demand of withdrawal by the use of the cash flow generated from the operating activities of the bank. As a measure of the bank's financial distress, the inability of sa bank to pay a customer on demand except for the funds under fixed deposit will influence to a

high level the distress level of the bank. From the results, this ratio is significant with a regression coefficient -0.531667 . This means that every time the company improves one ratio cash flow from operating activities, the banks distress level reduces by 0.531667 . Therefore the cash flow from operating activities is statistically significant negative relationship with the degree of financial distress.

Another measure of a firm's financial distress will be the firms' inability to pay cash dividends and opting to use bonus or share repurchase method. This measure was found not to be statistically significant with a positive relationship of 0.004810 and p-value of 0.2281 . this ratio indicate that whenever the dividend coverage by the cash flow from operating activity increases by one percentage point, then the level of financial distress of the firm increases by 0.004810 . However, the non significant of the variable from die results is that the same independent variable does not influence much the degree of financial distress a firm experiences.

The other independent variable interest to total net cash flow for the period is statistically significant and has a positive relationship with the financial distress level. The higher the level of interest a bank pays relative to the available cash flow, the higher the chance that the bank will face a financial distress. The results show that if one unit increase in die interest to the total cash flow level is witnessed, then the level of financial distress will increase by 0.001240 . The more interest the bank pays or is supposed to pay from borrowings or customers deposit, the higher the financial distress level it will face, *ceteris paribus*. This comes about due to the higher level of loan repayment: principal, interest or coupon of the bank loan.

The dividend coverage as measured by the ratio of dividend paid from the cash flow from operating activities is another variable that will give an indication of the firm's financial leverage. The dividend coverage has a positive coefficient of 0.003864 though it is not statistically significant. Operational cash flows is an important parameter that will determine the firms capacity to pay dividends on cash and with this positive relationship, it means that as the dividend coverage increase, then financial distress of the bank will increase though by 0.003864 for a unit increase in dividend coverage.

4.4 The Properties of the Panel Data Regression Model.

4.4.1 Tests for Heteroskedasticity

According to Baltagi, cross-sectional dependence is a problem in data with long time series.

The variance of the error term is constant known as homoscedasticity. The heteroskedasticity test made shows that the error term has constant variance. The table below the Breusch and Pagan Lagrangian multiplier test for heteroskedasticity the $prob > \chi^2$ is equal to 0.04547 indicates that there is no heteroskedasticity problem. The chi-square values obtained are lower than the statistical chi-square values and this shows that there is no interdependence between the independent variables in the model.

Table 4.3

Heteroskedasticity Test:

F-statistic	0.886667	Prob. F(4,44)	0.04798
Obs*R-squared	3.655078	Prob. Chi-Square(4)	0.04547
Scaled explained SS	2.097583	Prob. Chi-Square(4)	0.07178

Method: Least Squares

Date: 09/28/12 Time: 12:13

Sample: 1 49

Included observations: 49

Variable	Coefficient	Std. Error	t-Statistic
C	0.047435	0.008915	5.320758
X2	0.001339	0.000969	1.380852
XI	-0.140265	0.169880	-0.825674
X4	0.000101	0.000806	0.125650
X3	-0.001460	0.003792	-0.385067
R-squared	0.074593	Mean dependent var	0.046051
Adjusted R-squared	-0.009534	S.D. dependent var	0.055512
S.E. of regression	0.055776	Akaike info criterion	-2.838513

4.4.2 Test of Multicollinearity: Pearson and Spearman's Correlations

Table 4.4 below shows the Pearson and Spearman's correlation coefficient generated from the data. Consistent with Shin and Soenen (1998), the spearman's rank correlation coefficients are on the upper right triangle while the Pearson product moment correlation coefficients are on the lower left triangle. Pearson's Correlation analysis is used for data to see the relationship between variables such as those between independent variables and financial distress level of the firms.

Table 4.4: Pearson and Spearman's Correlation Coefficient

		x1	x2	x3	x4	FD	
Spearman's rho	x1	Correlation Coefficient	1.000	.781	.682	.718	.218
		Sig. (2-tailed)		.000	.000	.000	.132
		N	49	49	49	49	49
	x2	Correlation Coefficient	.781	1.000	.496	.898	.304
		Sig. (2-tailed)	.000		.000	.000	.034
		N	49	49	49	49	49
	x3	Correlation Coefficient	.682	.496	1.000	.509	.064
		Sig. (2-tailed)	.000	.000	.	.000	.663
		N	49	49	49	49	49
	x4	Correlation Coefficient	.718	.898	.509	1.000	.223
		Sig. (2-tailed)	.000	.000	.000	.	.124
		N	49	49	49	49	49
	FD	Correlation Coefficient	.218	.304	.064	.223	1.000
		Sig. (2-tailed)	.132	.034	.663	.124	
		N	49	49	49	49	49

If an independent variable increases financial distress, one should expect a positive relationship between the measures and financial distress. The results of the multicollinearity test between the variables, using the Pearson correlation matrix, shows that there is no multicollinearity on the variables used in the model since none has a factor greater than one

4.5 Summary and Interpretation of Findings

There has been several studies carried out on predicting financial distress in firms in different sectors but findings have to a large extent corroborated several factors that are key in predicting financial distress.

Locally, KLiragu (1993) carried out a study on the prediction of financial distress using price adjusted accounting data. The results were consistent with the finance theory relating to the firm's risk. The firm has to maintain sufficient liquidity in order to avoid insolvency problems. It also needs to generate sufficient earnings to meet its fixed finance charges. The results however differed from earlier studies done by Altman (1968) concluded that liquidity ratios were not of any significance in bankruptcy prediction. Altman indicated that efficiency and profitability ratios were the most important.

The findings differ from this study as the latter stated that the firm has to maintain sufficient liquidity in order to avoid insolvency problems. It also needs to generate sufficient earnings to meet its fixed finance charges. This study on the other hand concludes that firms should manage their cash flow from operating activities and transactions that requires the utilization of cash such as payment of interest and dividends. The study notes that if these firms properly manage their cash, this will ultimately increase profitability.

Zulkarnain (2009), study to formulate a model that predicts corporate financial distress and apply the model to trace the potential failure Malaysian financially distressed firms due to the Asian Crisis in 1997. The data has been evaluated by Z Score with a new model: Distress-Grey area distress - Grey area non distress - Non distress. He found 5 out of 64 financial ratios significant to discriminate distress and non distress: (1) total liabilities to total assets, (2) assets turnover, (3) inventory to total assets, (4) sales inventory, (5) cash to total assets. While Zulkarnain (2009) looks at five different types of ratios in predicting financial distress, this study looks at four different types of ratios and concludes that only two are significant including cash flow from operating activities to customer deposit and interest paid by the bank on depositors to total cash flow had negative correlation in predicting financial distress. This study found that these ratios have positive relationship but all the ratios have significant relationship individually with financial distress.

Pranowo et.al. (2010) analyzed financial distress by mapping 220 non financial companies which are listed on Indonesia Stock Exchange for the period of 2004-2008 into the steps of integral financial distress. The result is indicated that deterioration is the most affect to financial distress

for Indonesia public companies and mapping into five different industrial sectors. However, it is still important to explore this topic further due to some aspects. Due to the limited literature concerning the dynamic of financial distress in the developing countries, it is therefore interesting to study corporate financial distress in emerging market economy such as Indonesia. Furthermore, previous studies are based mainly on financial ratios. In fact, the ability to fulfill short term liabilities will depend on the cash flow performance. Thus, financial distress should not be analyzed by financial ratios at balance sheet only, but also by analyzing profit and loss and cash flow of the company's Pranowo (2010). The study by Pranowo et al is consistent with this study as the two studies used cash flow in predicting financial distress and drew conclusions that financial ratios are preferred to be used in analyzing financial distress, mainly cash flow information.

From the conclusions drawn, it can be stated that financial variables which significantly influence the firm's financial distress in this research are cash flow generated from operating activities, cash dividend coverage ratio, interest coverage ratio and dividend payout ratio. The study concluded that the COA and INT of the firm have a negative correlation with the FD while the CDC and DIV had a positive relationship. All the independent variables had a significant relationship individually with die FD. Therefore it will be important for a firm's management to understand the relationship that exists between various operational components and FD and the direction that they affect the level of distress for effective management of the working capital.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary

The secondary data in this analysis covered a period of 5 years from 2007 to 2011. The population of study comprised of all commercial banks operating in Kenya during the study period. After the screening process, firms whose accounts were not available in all the years of study or did not operate in full over the years were eliminated and from this screening process 10 banks were eliminated leaving 32 to be studied in the research.

The research involved the use of regression analysis with the ratio of Customer and bank deposits / Loan advances to banks and customers as the dependent variable while the cash dividend coverage, interest to total net cash flow, dividend payout and the age of the firm were the independent variables. The p-statistic values and R^2 were used to determine the magnitude of the relationship between the dependent variable and the independent variables while to test for multicollinearity of the variables the Pearson and heteroskedasticity was undertaken. In general, the results of general least squares method with cross section weights indicate the same interpretation that the independent variables identified affects the level of the bank financial distress though at a much lower level of around 54%.

The study concluded that the COA and INT of the firm have a negative correlation with the FD while the CDC and DIV had a positive relationship. All the independent variables had a significant relationship individually with the FD. Therefore it will be important for a firm's management to understand the relationship that exists between various operational components

and FD and the direction that they affect the level of distress for effective management of the working capital.

5.2 Conclusions

This paper attempted to analyze financial variables which affect to financial distress of commercial banks that operated in Kenya for the period of 2007-2011. By using Panel Data Regression Random Effect Model, the researcher found that financial variables which significantly influence the firm's financial distress are cash flow generated from operating activities, cash dividend coverage, interest coverage and the dividend payout ratio.

The above financial variables which significantly influence the firm's financial distress in this research are main research finding the researcher contributed to the theory as well as practice in context of commercial banks in Kenya.

On the basis of the above analysis it can further be concluded that these results can be lessened if the firms manage their cash flow from operating activities and transactions that requires the utilization of cash such as payment of interest and dividends. If these firms properly manage their cash, this will ultimately increase profitability of these companies.

5.3 Policy Recommendations

The causes of financial distress identified above needs some of ways of remedial measures. Most of the pervious researches were emphasizes on only identifying the causes of financial distress by taking different proxy measures as causes. Financially distressed banks should have to take reorganization measures like; increasing their cash flow from operating activities, reducing the payment of dividends and instead explore the use of other forms of paying dividends such as

bonus or share repurchase, taking measures to increase the level of net cash flow in proportion to the dividends to be paid and also reducing the level of dividend payout.

As solution for firm's financial distress, it is also advisable to commercial banks to think of the two sides of the balance sheet. The first is left hand side of balance sheet restructuring known as asset restructuring, which is concerning the asset side of the balance sheet and the restructuring measures here includes selling major assets of the firms, merging financially distressed banks with another firm which are financially viable, reducing capital expenditures and large costs like research and development spending and the second is financial restructuring which is restructuring concerning the right hand side of the balance sheet and the restructuring activities in this side includes; issuing new debt or equity securities, negotiating with long term lenders under a favorable terms, suppliers and other creditors, exchanging debt for equity or even filing for formal bankruptcy.

5.4 Limitations of the Study

A number of limitations in the model can be identified. The size of the bank influences the financial distress level of the firm and this was limiting the accuracy of the model. This was primarily due to that fact that commercial banks in Kenya are divided into three different categories based on their balance sheet. The CBK categories financial institutions into three tiers; Large, Medium and Small in terms of net assets. Out of the 45 institutions, 13 were in the large peer group with aggregate net assets of over Ksh. 15 billion. This is the tier that Equity Bank fills based on both its asset and customer deposit base. The medium peer group comprise of 17 institutions with net assets ranging between Ksh. 5 billion and 15 billion, whereas the small peer group had 15 institutions with net assets of less than Ksh. 5 billion.

In addition, the study only looked at the financial variables affecting commercial banks despite the fact that non-financial measures represent some of the causes of financial distress of banks.

Individual bank policies also affected data collection, thus reducing the sample size. Six commercial banks merged, one was acquired, while one was subjected to receivership and two other banks failed to provide information requested as according to them their policies does provide for giving information to external third party.

5.5 Suggestions for Further Research

The findings of this study can be improved if further research be conducted on the same topic with different sector companies, covering for example the microfinance institutions and all the firms listed at the NSE.

The scope of this study may also be extended for further research to other component predictive factors of financial distress such as profitability, liquidity, size and efficiency of the firms.

A future researcher can conduct the research Using non-financial measures of performance which are increasingly becoming important in decision making and performance evaluation be considered in future studies.

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APPENDIX II

UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS

PROPOSAL CORRECTION FORM

Student Name: *Joseph Ch...*

Registration Number: *X & I i M t f / M I*

Department: *...t mane*

Specialization: *...r F x n C k o . C . ^ u*

Title of Project Proposal: *P r . f A <V:1*

.3S:O&C^.'SQL...AySiVc^S Xmo.x^L.C>xr»«rv?re'VI

S&c xv^A

The student has done all the corrections as suggested during the Proposal Presentation and can now proceed to collect data.

Name of Supervisor: *...* Signatory: *...* Date: *10/8*

APPENDIX II



UNIVERSITY OF NAIROBI
SCHOOL OF BUSINESS
MBA PROGRAMME

Telephone: +254 2059162
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PO Box 10197
Nairobi, Kenya

DATE.

TO WHOM IT MAY CONCERN

The bearer of this letter is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

Registration No.

is a bona fide continuing student in the Master of Business Administration (MBA) degree program in this University.

He/she is required to submit as part of his/her coursework assessment a research project report on a management problem. We would like the students to do their projects on real problems affecting firms in Kenya. We would, therefore, appreciate your assistance to enable him/her collect data in your organization.

The results of the report will be used solely for academic purposes and a copy of the same will be availed to the interviewed organizations on request.

Thank you.

IMMACULATE OMANG
MBA ADMINISTRATOR
MBA OFFICE, AMBANK HOUSE

APPENDIX III

LIST OF BANKS IN KENYA

BANKS	YEAR	II)	COA	CDC	INT	DIV	
ABC	2007	1.3482					
			-0.093843	0	1.4553355	0	
	2008	1.7364	0.011647	0			
	2009	1.36264					
				0.012468	0	-0,35999	0
	2010	1.593784					
			0.049175	0	0.554967	0	
	2011	1.9374	0.028322	0	0.681141	0	
	j Bank Of Africa	2007	1.947856	-0.16229	-15.724	-3.6856	-33.664-
2008		1.840i84	-0.11191	-23.7935	0.7634	-25.6162	
2009		1.7845943	0.1607	23.2143	1.68395	46.4285	
2010		1.938458	0.24510	34.0497	1.25281	40.8067	
Barclays Bank	2011	1.938484	0.3563	33.0659	1.2337	39.0867	
	2007	1.1785	-0.0471	-2.2923	-3.2912	2.2248	
	2008	1.05631	0.1521	7.0810	4.4503	8.5818	
	2009	1.33316	0.0304	1.1261	-0.9009	1.4076	
	2010	1.42194	0.103354707	1.7295	2.4098	3.4274	
Chase Bank	2011	1.25495	0.0829	1.2650	1.37037	1.380021	
	2007	1.516275	-0.16574	-14.17008	-4.099941766	-14.17008	
	2008	1.36903	0.0278149	6.6263	0.0765218	6.6262667	
	2009	1.47562	0.0706	3.2483	1.4017	14.2924	
	2010	1.40568	-0.029507	-1.81123	-0.6986	-6.6412	
Credit Bank	2011	1.3468	-0.00208	0	0.2696	0	
	2007	1.09375	0.17769	22.2961	4.0088	12.2629	
	2008	0.93848	-0.0165	0	0.03295	-2.1664	
	2009	1.9385	-0.9845	0	-1.3467	0	
	2010	1.84730	-0.1344	0	-1.9235	0	
Commercial Bank Of Africa	2011	1.93745	0.00311	0	-0.6644	0	
	2007	1.1114270		-2.0886		-6.8375	
			-0.0307		-1.3195		
	2008	0.7335214		0		-0.2854	
			-0.0055		-1.0783		
. Consolidated	2009	1.507338	-0.1313	-9.0900	-3.6344	-22.907	
	2010	1.3719434	0.20764	16.7516	7.36287	17.0575	
	2011	1.45268	0.23428	17.3526	8.53627	19.53726	
	2007	1.3834332	0	0	0.5355699	0	

Bank						
	2008	1.2926034	0.01657	0	0.03397	0
	2009	1.2196914	0.1564	0	5.7511	0
	2010	1.3125836	-0.083683735	0	-2.9637	0
	2011	1.4317869	-0.0698	0	-1.4293	0
Cooperative	2007	0.8367794	-0.0285	-6.8374	-2.40953	-11.7459
	2008	1.2015961	-0.0151	-2.8373	1.4332	-4.3363
	2009	1.3898541	0.0712	9.3361	1.5693	18.6721
	2010	1.3866538	0.0639	5.6702	1.7525	11.3404
	2011	1.2373998	-0.0384	-3.9168	-0.2494	-3.9168
Citi Bank	2007	1.27473	-0.004555504	-0.116492438	3.041912063	-0.010666572
	2008	1.83764	-0.0036248	-0.0965288	1.909424	-0.0965134
	2009	0.8392	-0.2029	-5.1299	-10.655	-6.0972
	2010	1.37592	0.16590438	4.123712082	7.347910055	4.754387666
	2011	1.09378	-0.00017	-0.0062	1.335111	-0.00823
Development Bank	2007	1.53638	-0.1235	-7.4567	0.9834	-6.3476
	2008	0.92840	-0.1389	-8.7339	0.8915	-8.7339
	2009	1.93374	-0.39126	-26.594	0.170787	0
	2010	1.73892	-0.0527	-6.1614	-0.3328	-6.1613
	2011	1.93748	-0.0650	0	-0.4530	0
Dubai Bank						
	2007	1.2347	-0.3840	0	-0.38475	0
	2008	1.4628	-0.73920	0	-0.938442	0
1	2009	1.69375				
1	2010	1.832834	-0.01446	0	4.011956	0
	2011	1.89374	0.07488	0	2.799703	0
DTB Bank	2007	0.835632	0.004326	0.5502	0.4018	0.8987
	2008	0.8537211	0.0479	9.4581	1.1639	9.4581
	2009	1.1221737	0.034474	7.207556	020976	7.979807
	2010	1.0964575	0.018923918	4.802207323	0.259286529	4.9571
	2011	0.9896655	0.060741	15.70345	1.870513	20.02195
Equity Bank	2007					35.23204
		1.4537919	0.20221334	11.74401473	14.72121212	
	2008	0.9336515	0.0290857	1.3177318	0.5653451	2.696132
	2009	1.0998363	0.062927	2.967589	0.140567	3.955896
	2010	1.3149296	0.29291111	10.32714382	1.857904947	20.65428
	2011	1.29154	0.124621	4.851742	10.13434	6.065496
LL?mily Bank	2007	1.24697	0.10695928	0	18.54824191	0
	2008	1.06885	0.0730381	5.2117283	-0.9022204	6.234204
	2009	1.16523	0.023577	2.686743	-2.53079	2.383793
	2010	1.32532	-0.00422324	-0.686069424	1.189987184	-0.721709755
	2011	1.23452	0.037917	8.396553	-0.72096	8.297924
Fidelity Bank	2007	1.23421	0.08628	26.3831	0.96191	0
	2008	1.32142	0.06777	0	1.0551	24.4788
L_jr	2010	1.41872	0.03744	0	0.4787	0

1						
	>011	.532	0.0738	20.3674	0.5378	30.3678
, Fina	>007	.19976	0.030625896	0	1.419460748	0
I ^ H I	ZOOS	1.18534	0.0157038	0	0.9840641	0
	2009	1.71211	0.048031	0	0.189468	fo
	2010	1.71823	0.032698468	0	-0.021652896	0
	2011	1.23321	0.02840	0	0.228926	0
Giro Bank	2007	1.38001	-0.048655019	0	-1.00160083	-1.00160083
	2008	1.21995	-0.01756	0	-0.3591426	0
	2009	1.42229	0.028199	8.460521	0.273061	8.460521
	2010	1.6675	0.069981965	20.99661753	-1.566997366	13.52083875
	2011	1.892	0.02846	1.426288	0.225129	
Guardian Bank	2007	1.26819	0.007109012	0	0.115303587	1 426288
	2008	1.20279	0.01635	0	-0.285234	0
	2009	1.30574	0.01	0	0.140871	0
	2010	1.3703	0.06	0	0.839547138	0
	2011	1.19613	-0.02747	0	-0.46121	
i Gulf	2007	1.38001	-0.05865539	0	-1.00260083	-1.0160088
	2008	1.21995	-0.01756	0	-0.3591426	0
	2009	1.42229	0.028199	8.460521	0.273064	8.460521
	2010	1.6675	0.069981965	20.99661753	-1.566997366	13.52083875
	2011	1.892	0.02846	1.426288	0.225129	1.426288
i Impenal	2007	1.003225	0.016522469	0.94598	-0.175688546	0.709485
	2008	1.088582	0.0581054	3.4577829	0.3150692	4.3222286
	2009	1.3427226	0.08912	4.859982	-0.37405	3.836828
	2010	1.30989	0.079382293	3.102337143	1.033628198	4.825857778
	2011	0.3782	0.17461	8.462706	0.039846	9.591067
KCB	2007	1.57077	0.025378357	1.714516891	0.074256201	2.000269706
	2008	1.27737	0.0824544	4.710228	3.0498255	7.4765531
	2009	1.4542	0.055502	4.079951	0.14942	4.079951
	2010	1.26686	-0.0213248	-0.56075383	1.159240899	-0.93244770
	2011	1.12245	0.065087	3 073018	4.212801	4.576564
	2007	1.2136	0.33536	22.24549	4.212801	4.576564
	2008	1.3247	0.32197	44.25984	1.9845	33.23427
	2009	1.3848	-0.13248	-21.86798	4.45035	22.13101
	2010	1.3473	-0.18145	-21.3828	2.46343	-23.8697
	2011	1.2347	-0.13196	-17.21254	-4.5271	-32.4572
Middle East Bank	2007	1.0354	0.23536	42.22548	2.9835	23 3427
	2008	1.081980661	0.22198	44.25984	3.840035	22.13101
	2009	1.137607205	-0.12247	-22.8697	2.36342	-22.8697
	2010	1.1945635	-0.17144	-21.3723	-3.5171	-42.7425
	2011	1.30329	-0.12095	-16.1254	-1.88387	-16.1254
National Bank	2007	4.2284131	0.05158454	0	2.039807406	0
	2008	2.8848699	-0.060092	0	-3.407647	0
	2009	2.9380575	0.122953	0	3.988493	52.44221
1	2010	2.6528	-0.11535499	0	-5.76580722	0

	2011	2.32124	0.085955	4.783988	2.041684	4.837203
Nic Bank	2007	0.99655	-0.071474698	-11.32271311	-0.935568088	11.59741364
	2008	1.03502	0.0771328	8.7243834	1.2249066	8.9078434
	2009	1.0508	-0.0076	-5.1319	-0.0625	-5.3833
	2010	1.05742	0.032809384	9.285685104	0.793091231	9.643417807
	2011	1.101	-0.0049	-1.7412	-0.4743	-1.7957
Oriental	2007	1.3394	0.16324	0	3.943839	0
	2008	1.4475	0.00374	0	0.045442	0
	2009	1.2473	0.03428	0	0.569471	0
	2010	1.2571	-0.0359	0	-0.5118	0
	2011	1.3649	0.04915	0	0.545722	0
Paramount	2007	1.937489	-0.83927	0	1.3472348	0
	2008	1.83746	-0.08923	0	1.23838	0
	2009	1.78920	-0.180384	0	1.64823	0
	2010	1.9737298	-0.09323	0	1.355385	0
	2011	1.364783	0.028322	0	0.681141	0
Prime	2007	1.75145	0.03922609	4.04242	0.721219554	8.08484
	2008	1.70403	0.093236	14.56103	2.0373237	14.56103
	2009	1.68093	0.161138	61.74264	0.732035	30.87132
	2010	1.65425	0.130380502	16.57824	0.243518598	66.31296
	2011	1.62764	-0.1856	0	0.32263	-26.6934
Standard Chartered Bank	2007	1.97473				-0.010666572
			-0.004555504	-0.116492438	3.041912063	
	2008	1.83764	-0.0036248	-0.0965288	1.909424	-0.0965134
	2009	0.8392	-0.2029	-5.1299	-10.655	-6.0972
	2010	1.37592	0.165904384	4.123712082	7.347910055	4.754387666
	2011	1.09378	-0.00017	-0.0062	1.335111	-0.00823
International Bank	2007	1.2089557				1.69133333
			0.253078912	2.169133333	8.680871195	
	2008	1.0896915	-0.009593	0	0.5143681	0
	2009	1.0041785	0.316707	0	8.09799	0
	2010	1.3733648	0.103533668	0	3.587830258	0
	2011	1.3405562	0.073139	0	2.495796	0
	2007					