

**EFFECT OF DEMUTUALIZATION ON THE FINANCIAL  
PERFORMANCE OF THE FINANCIAL AND INVESTMENT FIRMS  
QUOTED AT THE NAIROBI SECURITY EXCHANGE (NSE)**

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**A Research Project submitted in Partial Fulfillment of the Requirement  
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## DECLARATION

This research project is my original work and has not been presented in part or whole in any other university for an award of a degree.

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## **DEDICATION**

I dedicate this research project to my beloved late Mother, Dakan Abdi Hussein for her immense love and support in my life. To my brothers Noor and Mohamed and the rest of my family for their encouragement and support during the study.

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

BSE-	Bombay Stock Exchange
CAP 485A-	Chapter 485A of Kenya Law
CDS-	Central Depository System
CMA –	Capital Markets Authority
ECNs-	Electronic Communications Networks
EDRN-	Event Design Research Network
IFC-	International Finance Centre
IPO-	Initial Public Offer
ITS-	Inter-Market Trading Systems
Ksh.bn,-	Kenya Shilling Billion
Ksh.mn-	Kenya Shilling Million
MSCI-	Morgan Stanley Capital International
NYSE-	New York Stock Exchange
R-BV-	Resource-Based View
ROE	Return on equity
SEC-	Securities Exchange Commission
US\$-	United States Dollar

## ABSTRACT

This purpose of this study was to establish the effect of demutualization and how the performance of the financial and investments companies listed at the NSE was impacted. The study used event research design. The study adopted descriptive and inferential statistics to find out the relationship between demutualization and its effect on the performance of the financial and investment companies quoted at NSE. In this case secondary data was collected from the NSE. The data collected was analyzed using statistical methodology and SPSS software was used in the analysis and later supported by use of tables and charts.

Regression analysis was conducted to empirically determine whether independent variables were a significant determinant of effects of demutualization. Regression results indicated the goodness of fit for the regression between independent variables and dependent variable is satisfactory. An R squared of 0.398 indicates that 39.8% of the variances in ROE are explained by the variances in the independent variables. ANOVA results indicated that the overall model is significant. Thus implied that the independent variables did a good job at predicting return on equity.

From the study, it was possible to conclude that there was an increasing trend in return on assets over the five years. Results also led to conclusion there was a decreasing trend in market price to book value ratio. The same declining trend was observed in growth of assets. However, there was no clear trend in the leverage ratio.

Results also led to the conclusion that there exists a significant and positive correlation between return on equity and market price to book value and also between return on equity and leverage. Furthermore, it was possible to conclude that the correlation between the dummy of demutualization was positive and significant.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

As part of the reforms to develop the capital market, the Government of Kenya established a Demutualization Steering Committee in 2009 to advise on the best way to demutualize the Nairobi Stock Exchange. The objective of the demutualization project was on two-fold; to reform the ownership structure of the Nairobi Stock Exchange (NSE); and to focus on ensuring the business viability of the Exchange as a for-profit company intent on maximizing returns to its shareholders.

#### 1.1.1 Demutualization

Demutualization (Birchall 2001), refers to changes in the ownership structure of user owned and controlled organizations from a mutual to a for-profit, proprietary organization. As a result of demutualization, residual claim and control rights are reassigned among stakeholders with implications to firm behavior and performance. In particular, cooperative membership rights are converted to unrestricted common stock ownership rights in a corporate organization. Most of times, demutualization is followed by public listing, which allows the firm to acquire additional risk capital from outside investors.

Efforts to demutualize the Nairobi Securities Exchange have been ongoing since the year 2005. In May 2006, NSE formed a demutualization committee to spearhead the process of demutualization. A demutualization consultant (Ernst and Young) was appointed to advise on the process. Ernst and Young submitted a demutualization report in 2008. Since then there have been numerous efforts and consultations aimed at progressing the demutualization process. These efforts culminated in the passing of the Finance Bill by Parliament in December 2010 which contains an amendment to the Capital Markets Act (Cap. 485A) to facilitate a demutualized securities exchange. On March 4, 2010 the Nairobi Security Exchange held an Extraordinary General Meeting to pass resolutions

that would facilitate demutualization in accordance with the then proposed Demutualization (Nairobi Stock Exchange) Bill 2009.

### **1.1.2 Firm Financial Performance**

Established financial indicators such as turnover and profit before tax are outcome indicators. Profitability measures the extent to which a business generates a profit from the factors of production: labour, management and capital. Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business (Gilbert and Wheelock, 2007).

Four useful measures of firm profitability are the rate of return on firm assets (ROA), the rate of return on firm equity (ROE), operating profit margin and net firm income. The ROA measures the return to all firm assets and is often used as an overall index of profitability, and the higher the value, the more profitable the firm business. The ROE measures the rate of return on the owner's equity employed in the firm business. It is useful to consider the ROE in relation to ROA to determine if the firm is making a profitable return on their borrowed money. The operating profit margin measures the returns to capital per dollar of gross firm revenue. Recall, the two ways a firm has of increasing profits is by increasing the profit per unit produced or by increasing the volume of production while maintaining the per unit profit. The operating profit margin focuses on the per unit produced component of earning profit and the asset turnover ratio (discussed below) focuses on the volume of production component of earning a profit (Crane, 2011).

### **1.1.3 Expected relationship between Demutualization and firm performance**

Many studies and reports pointed out that the ticket to successful growth of stock exchanges in today's competitive environment lies in demutualization. The program shifts the interest of the stock exchange from satisfying financial intermediaries to satisfying market participants. They argue that demutualization and self listing can free up the ability of stock exchanges to engage in many commercial activities. In addition,

demutualization can allow the stock exchange to modernize its technology, create a management structure that is more responsive to market conditions and, get an initial infusion of capital and allow for easier access to capital. It also enhances financial decision making by allocating resources to business initiatives and ventures that increase the shareholder value (Lee, 2002). Thus, demutualized stock exchanges are in general expected to bring better performance of exchanges.

The decision to demutualize is expected to bring a corporation that facilitates the ownership and trading privileges of the members of the exchange, thus permits the stock exchange to achieve greater independence. It brings a management that should take actions that are in the best interests of the stock exchange and ultimately its shareholders. Therefore, the interests of the owners of the stock exchange should be linked to those of the stock exchange as both parties will aim at profit maximization.

Further, the demutualized organizational structure will allow for greater transparency because exchanges will be obliged to report to their shareholders not only regarding the bottom-line but also on issues regarding corporate governance (Hughes and Zargar, 2006) It is important therefore to incorporate four core elements of corporate governance – when assessing the impact of demutualization on the performance of stock exchanges; shareholder rights, commitment to corporate governance principles, board governance, and transparency. Good corporate governance requires all shareholders to be equally informed and to be free to elect the management of their institution in an annual shareholders' meeting. All shareholders should have a clear understanding of the institution's policy and practice. Minority shareholders also need to have easy access to information and be treated fairly (Peralta, 2006, and IFC Corporate Governance Matrix, 2006).

#### **1.1.4 The Nairobi Securities Exchange (NSE)**

The Nairobi securities exchange in Kenya is small and somewhat speculative. The Exchange was established in 1954. The Exchange is sub-haran Africa's fourth-largest

bourse. A number of brokers are licensed to operate. The NSE, like many other emerging markets, suffers from the lack of liquidity in the market. Foreign investment on the Nairobi Securities Exchange and foreign ownership of companies is by application. Foreign investment in the local subsidiaries of foreign-controlled companies is banned so as to encourage input into Kenyan companies. The Kenyan government has made several reforms aimed at attracting foreign investment via the Nairobi Securities Exchange. The Exchange was opened to foreign investors for the first time in January 1995, but with a maximum limit of 20% shareholding for institutions and 2.5% for individuals. The ceiling on foreign investment has been increased to 40% for institutions and 5% for individuals, but a relatively small percentage of listed companies are available to foreigners.

## **1.2 Statement of the Problem**

Stock exchange demutualization continues to generate debate amongst academics, business people and policy makers on the impact of such conversion; from the mutualized to demutualized organizational form. (Lee, 2002) argue that Demutualization and self-listing can greatly free up the ability of stock exchanges to engage in many commercial activities. Demutualization can also help the stock exchange to modernize its technology, obtain a governance structure that is more flexible in responding to industry and market conditions, avoid concentration of ownership power in a particular group of stock exchange participants and ensure financial decision-making by ensuring that resources are allocated to business initiatives and ventures that enhance shareholder value.

Besides, (Seifsoy, 2006) points out that the increasing conflicts in the stock exchange member's interest and tough competition led to a reduction in stock exchanges wealth. As a result, this led to a change in the stock exchanges governance structure, or saying it otherwise to demutualization. In addition (Steil, 2002), argues the change in the governance structure raises concerns regarding the ability of the demutualized stock exchange to develop and enforce appropriate listing and disclosure standards,

surveillance and discipline, financial and operational compliance, and fair and equitable treatment of customers. There is also a question on whether or not the firms will perform better after demutualization.

Nairobi Security Exchange trading and settlement systems are efficient enough to accommodate relatively modern market participants. Kenyan law provides for basic investor protections, including rules against market manipulation; prohibitions of insider trading; issuer disclosure; and broker/dealer prudential regulations. The Kenyan primary market for issuances, although very thin at present, has great potential for growth if some key reforms are met, including reforms directed towards reducing the cost of issuance and providing lower cost alternatives to issuer disclosure and reporting (Bryan, 2008).

The stock market in Kenya has witnessed turbulent times since the year 2003 with the stock prices and returns fluctuating every now and then. Demutualization process also started during this period. The problem of the study is whether the demutualization process could have contributed to the fluctuation in stock prices and returns and by extension therefore influencing the financial performance of quoted financial and investments firms.

Global studies (for instance, Faina and Lopez, 2006; Hart and Moore, 1996; Akhtar, 2002; Hughes and Zargar, 2006) show that demutualization has a positive effect on the performance of stock exchanges and consequently the listed firms. However, there also exist a host of studies (for instance, Mendiola and O'Hara, 2004; Worthington and Higgs, 2006) that find either a negative effect or no effect all arising due to demutualization. This implies that at a global level, there existing differing opinions as to the effect of demutualization. The difference in opinions forms a research gap.

Another research gap of this study arises out of the observation that local studies on the effect of demutualization are scarce. Wambui (2005) did a detailed study of capital markets in emerging economies, a case study of Nairobi stock exchange but failed to address the effect of demutualization on the financial performance of financial and



investment firms quoted at Nairobi Security Exchange. Kiruthu (2007) undertook the NSE demutualization study, to assess the case for demutualization of the NSE and review the implementation mechanisms but did not investigate the effect of demutualization on the financial performance of financial and investments firms listed at the NSE. Therefore this study wishes to answer the following research questions; what is effect of demutualization on the financial performance of the financial and investments firms quoted at the Nairobi Securities Exchange?

### **1.3 Objectives of the Study**

The study aims to investigate the effect of demutualization on the financial performance of the financial and investments firms quoted at the Nairobi Securities Exchange.

### **1.4 Significance of the study**

This study will benefit the following; Investors and the business community will be very much passionate to learn about the status and the impact of the demutualization process. Enhanced performance of the Nairobi Security exchange due to demutualization will mean enhanced confidence amongst the investors.

Other emerging markets in the region are keenly watching the general outcome and the consequences of demutualizing one of the biggest Security market in East and central Africa. Chances are, they are lining up to follow the example of NSE if the demutualization process turns out to be successful leading to the right direction in terms of performance and enhancing efficiency.

Policy makers and regulators will find very necessary on studies that will contribute knowledge to the demutualization of Nairobi Security Exchange, its important to note that the government had really tried in fast tracking the demutualization process of Nairobi security Exchange. Academicians and the practitioners; the study will provide them with the platform for further discussion in their quest to understand and affect the process of demutualization.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section draws on literature in the area of demutualization of the security exchange process and the impact of implementation on the turnover and trading volumes of the Nairobi security exchange since the inception of the process. Secondary material such as books, journals, and articles which have previous research work on the study topic are analyzed. The materials are of significant importance to this study as it forms a foundation for observations which will be made during the study in line with the study aims and objectives.

#### **2.2 Theories on Demutualization**

A number of theories support demutualization of the security exchange since already a number of exchanges have demutualized all over the world. Based on the past studies done in this area the following theories will be discussed in this study to shed more light on demutualization and its impact on the performance of Nairobi security exchange.

##### **2.2.1 Transaction Costs Theory**

Transaction costs provide an explanation of why firms exist. Pioneers in transaction costs theory argue that firms exist in order to reduce transaction costs and thus increase the volume of trade and economic value creation (Coase, 1937). The early work of Coase (1937) explains that firms exist where it is profitable to establish them as there are costs to conducting transactions in the market the most obvious cost is discovering what the relevant prices are.

The transaction costs theory explains the worldwide move towards demutualization. The new changes in today's competitive environment, that resulted from the introduction of new electronic systems have led to lower transactions costs of trading for investors, allowed for better price determination, and lowered the chance for market manipulation -

that exist under the mutual structure of stock exchanges. The new advances in technology has also facilitated cross-border trading and over time the development of Inter-Market Trading Systems (ITS) (Claessens et al, 2000).

### **2.2.2 Behavioral Theory**

The behavioral theory of the firm can also be used to explain the reason behind stock exchanges' demutualization. The investor– stock exchange relationship has changed to seek better liquidity and services. Members' interests become increasingly divergent and the benefits of the cooperative structure become greatly reduced. Another issue is the ability of the cooperative structure to raise new capital and provide some motivation for the members of the exchanges. Again, considering the transaction costs point of view, the cost of organizing the cooperative becomes greater than the benefits (Mendiola and O'Hara, 2004).

To sum up, the behavior of members of stock exchanges and the investors towards the Demutualization decision is explained in March and Simon (1958) who argues that behavior in Organizations is highly routinized. But, the routine has the character of dynamic capability rather than a fixed program. Routine-changing decision makings are modeled as “searches”. The lower the satisfaction of the organizational decisions, the more search will participants go through to look for alternative programs. The more the search, the higher the expected value of reward will be.

### **2.2.3 Resource Based Theory and Dynamic Capabilities**

Resource-based theory explains the ability of the firm to reach sustainable competitive advantage when different resources are employed and these resources cannot be imitated by competitors. Wernerfelt (1984) defines the resource-based view (R-BV) as an economic tool used to analyze a firm's resource position in order to look at some of its strategic options. That applies in particular to the relationship between profitability and resources, as well as ways to manage the firm's resource position over time. The fundamental principle of Wernerfelt (1984) is that the basis for a competitive advantage of a firm lies in the application of the combined valuable resources that the firm owns.

The resource based theory and dynamic capabilities have direct link with the demutualization decision of almost all of the stock exchanges that have undergone the demutualization decision. Recent changes in the global environment required exchanges to maintain flexibility and innovation. Without them, stock exchanges will not be able to compete with new entrants such as electronic communications networks (ECNs).

#### **2.2.4 Property Rights Theory**

Property right theory explains why a particular form of ownership takes place. Property rights come as a result of the bargaining strength of those affected. Decision makers usually want to adopt, or modify property rights to alleviate the harmful impact of economic losses of the common pool. The need for new property rights reflects the need to include new market prices and production possibilities that cannot be attained under the old arrangement (Libecap, 1989; and Demsetz 1988 & 1995). Based on Libecap's analysis, Mahoney (2004) noted that 'the greater the size of anticipated Aggregate economic benefits of institutional change (or) (the greater the economic losses of the Common pool), the more likely the new property rights will be sought and adopted. The property rights theory also helps to understand another question: Can members of the Exchange under the mutual structure protect their economic rights? Brazel (1989) argues that; 'legal rights are neither necessary nor sufficient for the existence of the economic rights'. Barzel (1989) looks at the concept of property rights to be closely related to the concept of transaction costs.

#### **2.2.5 The Agency Theory**

This theory views the agency relationship, in which one party (the principle) delegates work to another party (the agent), who performs that work. This involves delegating some decision making authority to the agent. The agency theory describes this relationship between the two parties through the metaphor of a contract (Jensen and Meckling, 1976).

The approach of positivist researchers suggests the importance for demutualized stock exchanges to maintain an efficient corporate governance system and enhanced

transparency. The decision to demutualize is expected to bring a corporation that facilitates the ownership and trading privileges of the members of the exchange, thus permits the stock exchange to achieve greater independence.

It brings a management that should take actions that are in the best interests of the stock exchange and ultimately its shareholders. Therefore, the interests of the owners of the stock exchange should be linked to those of the stock exchange as both parties will aim at profit maximization. Further, the demutualized organizational structure will allow for greater transparency because exchanges will be obliged to report to their shareholders not only regarding the bottom-line but also on issues regarding corporate governance (Hughes and Zargar, 2006).

### **2.3 Demutualization of the Nairobi Security Exchange**

Demutualization is the process by which a member customer-owned cooperative or mutual organization is transformed into a shareholder-owned company raising capital with shares issued and traded on the stock exchange and providing services to customers as well as returns to shareholders. This transformation also means that trading and ownership can be separated. Shareholders under the demutualized stock exchange provide capital to the exchange and receive profits but need not carry out trading on the exchange (Aggrawal, 2002 and Hughes and Zargar, 2006).

Coase (1937) explains that firms exist where it is profitable to establish them. According to him, the firm is a series of contracts that reduce and economize on its transaction costs. There are costs to conducting transactions in the market and there are also costs relating to negotiating and concluding transactions for each transaction.

The ideas of Libecap (1989) can be linked to the main reason of demutualization of the Nairobi security exchange – as a new form of ownership; the previous mutual structures have failed to respond to the new advancement in technology and new changes in the global market. Investors wanted to have a new ownership structure that improve their exchange and as a result can provide them with higher yields. Decisions to demutualize

usually take place when the old member-owned organizational structure fails to provide the flexibility and finance required to improve the stock exchange as in the case of the Nairobi security exchange, which in turn affect the profit-seeking investors and might force them to seek other stock exchanges.

As Mendiola and O'Hara (2004) pointed out, updating trading platforms is capital intensive and this need had required many large and small stock exchanges to look for ways of financing such investments. Also, the lack of liquidity problem had posed a threat on smaller businesses to go out of business. It was seen that the demutualization program and listing can allow the stock exchange to raise capital by selling shares in the public market and can also motivate the management of the exchange to seek more business initiatives.

To place the Nairobi security exchange as a competitive entity, a carefully drawn road map was to be determined. The ability to raise capital IPO private investment and the increased responsibility to stakeholders were viewed as convenient ways to respond to the global competitive pressures as it allows for the resources and incentives needed for investment in competitive products and information systems (Hughes and Zargar, 2006).

#### **2.4 Firm liquidity**

Liquidity is the ability of a company to meet the short term obligations. It is the ability of The company to convert its assets into cash. Short term, generally, signifies obligations which mature within one accounting year. Short term also reflects the operating cycle, buying, manufacturing, selling, and collecting. Lack of cash or liquid assets on hand may force a company to miss the incentives given by the suppliers of credit, services, and goods. Loss of such incentives may result in higher cost of goods which in turn affect the profitability of the business. So there is always a need for the company to maintain certain degree of liquidity. However, there is no standard norm for liquidity. It depends on the nature of the business, scale of operations, location of the business and many other Factors. It is still unclear in reality (empirically) how different demutualization affects the firms performance and their liquidity. A study by Biais (1993) found that competition

among stock exchange intermediaries improves liquidity. As the number of dealers increase, the spread charged to liquidity traders falls because dealers attempt to undercut each other's prices.

GAO and Kling (2006: 163), in their study, observed that higher market liquidity is positively related to economic growth, progress in productivity, and expansion of capital accumulation. Hence, market reforms should enhance market liquidity to facilitate investment and guarantee long run economic growth and good performance of the firm.

Similarly North (1990) addressed an important question on why societies experience long-term stagnation or an absolute decline in economic well-being. North and Thomas (1973) considered institutions the determinant of economic performance and relative price changes the main reason that accounts for institutional change. As North and Thomas explained, changes in relative prices provide an incentive to create more efficient institutions (In Mahoney, 2004).

## **2.5 Firm Leverage**

This refers to the use of various financial instruments or borrowed capital, such as margin, to increase the potential return of an investment. It also refers to the amount of debt used to finance a firm's assets. A firm with significantly more debt than equity is considered to be highly leveraged. Most companies use debt to finance operations. By doing so, a company increases its leverage because it can invest in business operations without increasing its equity. Leverage helps both the investor and the firm to invest or operate. However, it comes with greater risk. If an investor uses leverage to make an investment and the investment moves against the investor, his or her loss is much greater than it would've been if the investment had not been leveraged.

A firm with good projects grows no matter how its balance sheet looks, because it can always find funding. Miller (1991, p. 481) argues that we should not 'waste our limited worrying capacity on second-order and largely self-correcting problems like financial leveraging. For those on the other side however, high leverage reduces a firm's ability to

finance growth through a liquidity effect. ' Myers (1977) shows that, in extreme case, a firm's debt overhang can be large enough to prevent it from raising funds to finance positive net present value (NPV) projects.

Domowitz and Steil (1999) find that under the mutual ownership structure, members may resist innovations that enhance the value of the exchange in case this innovation threatens the demand on their intermediation services. For-profit stock exchanges run by for-profit investors are more likely to seek innovative ideas and processes in order to expand their commercial activities and provide better financing for the exchange. It is these innovative products, structures and strategies that will enhance and develop their position in the market and add to their comparative advantages.

## **2.6 Market Capitalization**

Market capitalization is the total value of the tradable shares of a publicly traded company; it is equal to the share price times the number of shares outstanding. As outstanding stock is bought and sold in public markets, capitalization could be used as a proxy for the public opinion of a company's net worth and is a determining factor in some forms of stock valuation. Preferred shares are not included in the calculation. The total capitalization of stock markets or economic regions may be compared to other economic indicators (Wikipedia). The last thirty years have seen the rise of equity index investing, driven primarily by a wide range of investors embracing the tenets of the efficient markets hypothesis. As more investors index, the ability of changes in the composition of the index to significantly affect prices of the stocks involved around the time of the change appears to be greater (Jonathan, Nov 2002).

Some of these stock price movements may be predictable. For example, Lynch and Mendenhall (1997) find predictable price movements after the announcement of changes in the S&P 500 index, and Madhavan (2001) finds a mean difference in return of 15% between additions and deletions in the Russell 3000 index in the month leading up to the annual reconstitution. In both cases, the abnormal returns are of sufficient magnitude to draw the attention of risk arbitrageurs. Thus, somewhat paradoxically, the widespread



embrace of the efficient markets hypothesis seems to result in pockets of temporary inefficiencies in prices (John and Charles, Nov 2002).

## **2.7 Demutualization and Corporate Governance**

Jensen and Meckling shaped to the work of Berle and Means (1932) by arguing that corporations are structured to minimize the costs of getting agents to follow the direction and interests of the principles. They found out that the agent will more likely follow the goals of the principle and work for his interest when the contract is outcome-based. And also when there is an established mechanism that enables the principle to verify the behavior of the principle.

Good corporate governance requires all shareholders to be equally informed and to be free to elect the management of their institution in an annual shareholders' meeting. All shareholders should have a clear understanding of the institution's policy and practice. Minority shareholders also need to have easy access to information and be treated fairly (Peralta, 2006, and IFC Corporate Governance Matrix, 2006).

Demutualization results in a complete change in the structure of the stock exchange; from an organization that is basically owned by brokers to one that is owned by shareholders. The stock exchange should also work to adopt sound corporate governance policies and comply with the provisions of the institution's code of corporate governance. The basic principles of corporate governance are established in the exchange. The realization of these principles needs a neutral corporate governance officer that assures compliance (Strenger, 2004).

Demutualization entails a change in the management structure that should work in improving the commitment to corporate governance. Further, since shareholders depend on the board of directors in having effective governance of the institution. Therefore the institution needs to follow effective policies and practices in choosing the board of directors and ensure that they follow international best practices (Peralta, 2006). Finally, an enhanced transparency and disclosure system is required. As Peralta (2006) pointed

out; 'Investors and shareholders expect the institution to provide them with adequate access to information, management analysis of financial results, and complete reports of annual shareholders' meetings.

## **2.8 Empirical Studies**

Over the past few years, researchers have paid increasing attention to the implications of demutualization in the performance of stock exchanges. Many studies and reports pointed out that the ticket to successful growth of stock exchanges in today's competitive environment lies in demutualization. The program shifts the interest of the stock exchange from satisfying financial intermediaries to satisfying market participants. They argue that demutualization and self listing can free up the ability of stock exchanges to engage in many commercial activities (Lee, 2002).

Mendiola and O'Hara examined the impact of demutualization on the financial performance of stock exchanges. Mendiola and O'Hara (2004) study five general accounting measures of performance: the return on assets, the return on equity, profitability, asset turnover and financial leverage. Their study is faced with several shortcomings; first, it is restricted to exchanges that have been completely transformed into publicly listed companies. Second, there is a problem of having a control group of stock exchanges because almost all of the large stock exchanges are part of the sample. At the time of implementing the study, only the smaller stock exchanges were still member-owned. Third, most of the conversions – to the demutualized structure - happened in the last three years of applying the study. It was noted that this period witnessed difficulty for asset markets world-wide.

Other previous empirical studies that examined the impact of demutualization have studied that impact on one or more of the market measures. Examples of these studies include those of Serifsoy (2005) who conducted an efficiency analysis that focuses on the exchange governance, Krishnamurti, et al (2003) who compared trading costs for two major stock exchanges in India; the demutualized National Stock Exchange (NSE) and the mutualised Bombay Stock Exchange (BSE), Treptow (2006) who presented a detailed

analysis on the impact of demutualization of securities exchange on liquidity through examining securities that are listed on two markets simultaneously, Hazarika (2005) who examines the impact of demutualization on trading volumes and costs, and considers this impact in two different situations; in which competition plays very different roles, and Wambui( 2005) did a detailed study of capital markets in emerging economies, a case study of Nairobi stock exchange. She focused on the improvement of market infrastructure through the development of an automated central clearing, settlement and depository system (CDS) intended to serve the East African region and also the process of structural adjustment and privatization due to fiscal deficit and government divesture programs which resulted in the entry of restructured firms in the stock market and demutualization as the way forward for the NSE. John Kiruthu (2007) financial consultant with KPMG East Africa undertook the NSE demutualization study, to assess the case for demutualization of the NSE and review the implementation mechanisms.

### **2.8.1 Empirical Evidence**

Treptow (2006) also presented a detailed analysis on the consequences of demutualization of securities exchange on liquidity. In order to capture the demutualization impact on liquidity, Treptow (2006) examined securities that are listed on two markets simultaneously. He used a quasi experimental framework, as all securities are listed in primary markets that demutualized during the study period. All securities share the NYSE (which was not yet demutualized at the time of conducting the study), as a common second trading venue. The data consists of various liquidity measures for 156 dually listed equity issues on the New York Stock Exchange and 12 non-U.S. exchanges, and spans across a ten-year period. Treptow (2006) found out that demutualization brings significant beneficial effects on demutualizing exchange's liquidity. In comparison to pre demutualization levels, turnover and resiliency increase, while spreads tighten. He also concluded that the liquidity gap between a demutualized and an undemutualized exchange increases due to the transformation.

Mendiola and O'Hara (2004) also examined the liquidity issue following the exchanges

Demutualization. They used the illiquidity ratio, or the extent to which daily volume move daily prices. In order to study whether liquidity provision has improved after the exchange equitization, Mendiola and O'Hara (2004) collected daily volume and price change data for a sample of stocks trading on each of the exchanges in the sample. The sample was selected to represent the market for each exchange, and it included about 80-120 stocks for each market – except Athens Stock exchange, where only 14 stocks comprised the most of the trading). Mendiola and O'Hara (2004) then calculated the illiquidity ratio for each stock on a daily basis one year before and one year after each exchange's listing or IPO date. The overall illiquidity ratio is then calculated as the average across the stocks. Mendiola and O'Hara (2004) provided evidence that liquidity production is improving after the exchange conversion. They found out that illiquidity is reduced for four of the seven firms in the sample in the first year after conversion. They also show that this improvement continues into the second year for most of the sample exchanges. They conclude that in general, the liquidity data is supportive of enhanced exchange performance, but is not definitive.

Worthington and Higgs (2006), analyzed market risk in four demutualized and self listed Stock exchanges; the Australian Stock Exchange, the Deutsche Borse, the London Stock Exchange and the Singapore Stock Exchange. The company data were obtained from Bloomberg and the market indices from Morgan Stanley Capital International (MSCI). They used MSCI market indices instead of, the Australian All Ordinaries, because of their consistency in depth, breadth and construction. Daily company and MSCI index returns provide the respective asset and market portfolio data. While the results indicate significant beta volatility, unit root tests show the betas to be mean-reverting. These findings are used to suggest that despite concerns that demutualized and self-listed stock exchanges entail new market risks that need regulatory intervention, the betas of the stock exchange companies have not changed significantly since listing. However, market risk does vary considerable across the exchanges.

## 2.9 Chapter Summary

This chapter has reviewed literature on the demutualization of security exchanges and its impact. It has also briefly explained the theories related to demutualization exercise across the world. The chapter has also addressed the importance of corporate governance in relation to demutualization. It has also tackled the explanations of event research design, share turnover and trading volumes which are important elements in this study.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter briefly highlights the methods and procedures used in carrying out the study. It includes the survey research design, population, the sampling frame and technique used, data collection methods (instruments and procedures), and data analysis and presentation methods.

#### **3.2 Research Design**

In this project, an explanatory research design was being used. An explanatory survey design is used to show how variables relate to each other. Explanatory research focuses on why questions. Answering the 'why' questions involves developing causal explanations (De Vaus, 2001). It aims at establishing a cause and effect between variables (Mugenda and Mugenda, 2003). This is the most appropriate since there were sufficient secondary data available in the market for analysis to establish the facts. The research depended on secondary data from companies' published financial statement.

#### **3.3 Population**

Borg and Gall (1999) define population as all the members of a real hypothetical set of people, event or object to which a research wishes to generalize the results of the study. The population of this research consists of all the financial and investments companies quoted in the Nairobi Security Exchange between 2007 to 2011 (5 years). The population was 14 firms.

These periods was chosen because it represents the time before demutualization process kicked off (2007 to 2009) and the time demutualization became effective (2010 and

2011). The data used was for the two years after demutualization. These implies that a total of 112 observations were used ( 2 years\*14 firms\*4variables)

### **3.4 Sampling**

Cooper and Schindler (2000) define a sampling frame as a list of elements from which the sample is actually drawn. The sample of this research consists of all the financial and Investments companies listed in the Nairobi Security Exchange between the periods of 2007 to 2011 (14 firms). A census methodology was employed since all the 14 finance and investment firms were studied. This period is important since it represents the period which the demutualization process began, also availability of data and completeness was important in choosing this period.

### **3.5 Data Collection**

The research was based on the secondary information collected from the Nairobi Security Exchange and data available in the library of the Nairobi Security Exchange. Secondary data was therefore collected in this study. The main sources of data were the annual reports and accounts documents published by company covering the aforementioned period. This period was chosen due to data availability and completeness. Collected data related to the firms return on equity, market price to book value, growth in asset and leverage.

### **3.6 Data Analysis**

With the collection of the required data, statistical techniques were applied to derive a relationship from the data for the period under study. Both descriptive and inferential statistics were used. The descriptive statistics included means, standard deviations and frequencies. The data findings were presented in tables and graphs.

To analyze the relationship between demutualization and financial performance, inferential statistics were used. Specifically, multiple regression technique and correlation

which were used to establish whether a relationship exists or not. Parametric tests i.e. f test in Analysis of Variance (ANOVA) and t-test were used to measure statistical significance in the difference of mean ratios.

There were other explanatory variables other than demutualization that might play an important role in determining the financial and market performance for the firms. The study estimated the following simple regression to examine the effect of factors and demutualization on the Return on Equity of firms listed at the security exchange. This helped to control for the effects of these factors. The following model was used;

$$Y = \alpha + \beta_1 \chi_1 + \beta_2 \chi_2 + \beta_3 \chi_3 + \text{demutualization dummy} + \epsilon$$

The basis of the model is empirical evidence that link demutualization to financial performance. The empirical studies that identified this link included Faina and Lopez, 2006; Hart and Moore, 1996; Akhtar, 2002; Hughes and Zargar, 2006.

$Y$  = Return on equity

$\alpha$  = Is the autonomous component, which is the performance that is not affected by the factors in question.

$\chi_1$  = Size of the firms under study

Size is commonly identified by the market value of equity and the book value of assets. The study calculates the market price to book value Ratio.

$\chi_2$  = Growth

The research considers the growth in assets. Growth in assets = (assets of the current year / assets of the previous year) - 1. Growth can also be measured in terms of growth of transactions. Growth in assets is however a better measure for the growth of the firms quoted.

$\chi_3$  = Leverage



Leverage measures how much of the firm's total assets are financed by debt or equity. The most commonly leverage measures used are the debt / equity ratio and the debt / asset ratio. The study calculates leverage as Debt / Equity.

*Demutualization dummy*; it takes the value of zero (0) in the period before demutualization, that is between 2007 and 2009 and the value of 1 in the period after demutualization that is between 2010 and 2011.

$\epsilon$  is a random error term and takes care of other factors that affect financial operations which are not defined in the model.

$\beta_1 \beta_2 \beta_3$  =Beta values, provides the change in the outcome associated with a unit change in the predictor

In the regression analysis, we examine:

- R<sup>2</sup>; which – as a percentage represents the percentage of the variation in the outcome that can be explained by the model (Field 2003).
- The F-test. This test is based on the ratio of the improvement due to the model and the difference between the model and the observed data.  $F = \text{MSM} / \text{MSR}$ . If the model is Good, then we expect the improvement in prediction due to the model to be large (greater than 1 at least) (Ibid.).
- The t-statistic tests the null hypothesis that the value of  $\beta$  is zero: therefore, if it is Significant we accept the hypothesis that  $\beta$  value is significantly different from zero (Ibid.).
- If the t-statistic is very large, then it is unlikely to have occurred by chance. As a general rule, if this observed significance is less than 0.05, then the result reflects a genuine effect (Ibid.).

## **CHAPTER FOUR**

### **DATA ANALYSIS AND PRESENTATIONS OF FINDINGS**

#### **4.1 Introduction**

In this chapter, the data collected during the research was analyzed and reported. This study was executed to achieve the stated objectives. Descriptive results were first presented, followed by the analytical model results. A discussion of results was later presented in a separate section.

#### **4.2 Descriptive Results**

Descriptive results presented in table 4.1 reveal that the average Return on equity (ROE) for the 14 firms in the year 2007 was 16.49%. The average Return on equity (ROE) for the 14 firms in the year 2008 was 14.71%. The average Return on equity (ROE) for the 14 firms in the year 2009 was 15.55%. The average Return on equity (ROE) for the 14 firms in the year 2010 was 20.05%. The average Return on equity (ROE) for the 14 firms in the year 2011 was 20.72%. The overall Return on equity (ROE) over the 5 year period was 20.72%.

Descriptive results presented in table 4.1 reveal that the average market to book value for the 14 firms in the year 2007 was 3.1521. The average market to book value for the 14 firms in the year 2008 was 1.9807. The average market to book value for the 14 firms in the year 2009 was 1.4764. The average market to book value for the 14 firms in the year 2010 was 1.7464. The average market to book value for the 14 firms in the year 2011 was 1.0957. The overall average market to book value over the 5 year period was 1.8903.

Descriptive results presented in table 4.1 reveal that the average growth in assets for the 14 firms in the year 2007 was 28.42%. The average growth in assets for the 14 firms in the year 2008 was 31.13%. The average growth in assets for the 14 firms in the year 2009 was 10.58%. The average growth in assets for the 14 firms in the year 2010 was 26.65%.

The average growth in assets for the 14 firms in the year 2011 was -14.06%. The overall average growth in assets over the 5 year period was 16.54%.

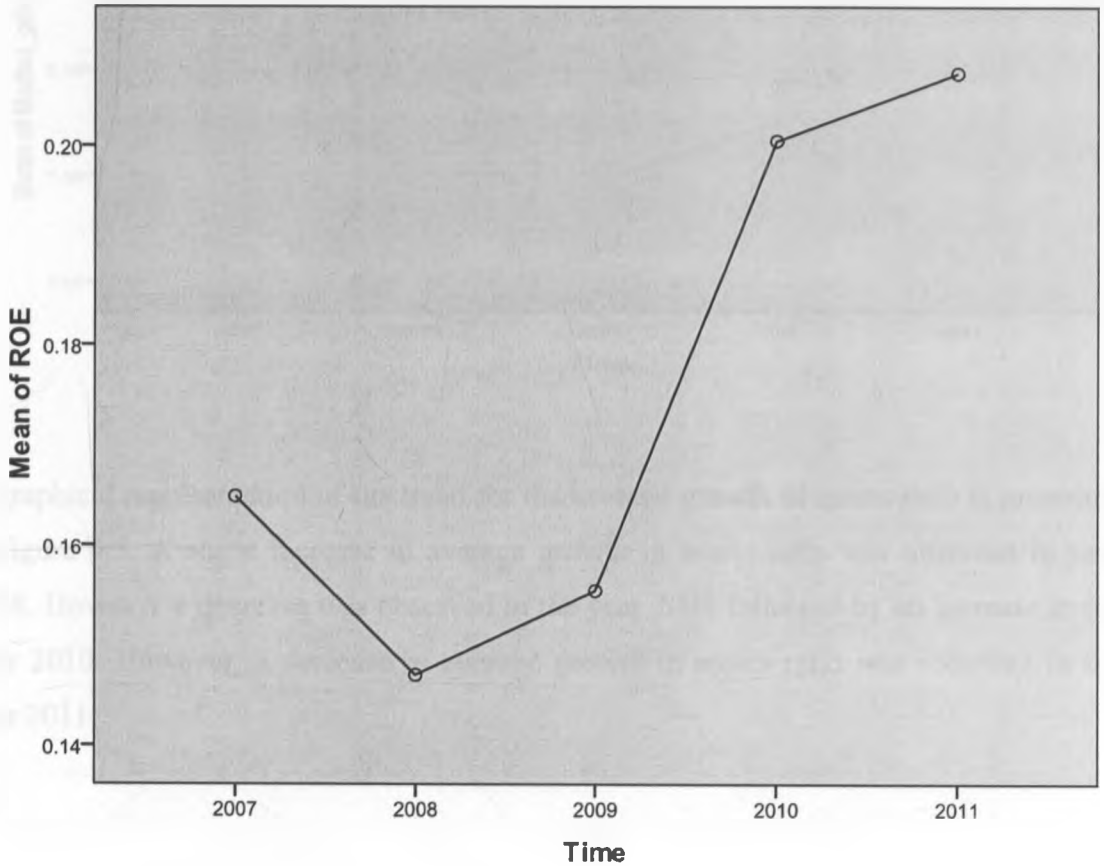
Descriptive results presented in table 4.1 reveal that the average leverage for the 14 firms in the year 2007 was 4.63. The average leverage for the 14 firms in the year 2008 was 4.14. The average leverage for the 14 firms in the year 2009 was 4.51. The average leverage for the 14 firms in the year 2010 was 4.21. The average leverage for the 14 firms in the year 2011 was 4.64. The overall average growth in assets over the 5 year period was 4.43.

**Table 4. 1: Descriptive Results**

		N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
ROE	2007	14	.1649	.07414	.01981	.05	.32
	2008	14	.1471	.10269	.02745	-.08	.28
	2009	14	.1555	.08927	.02386	.00	.34
	2010	14	.2005	.10258	.02741	.01	.34
	2011	14	.2072	.07956	.02126	.05	.30
	Total	70	.1750	.09109	.01089	-.08	.34
Market price to book value	2007	14	3.1521	1.51820	.40576	.38	6.11
	2008	14	1.9807	1.00822	.26946	.53	3.78
	2009	14	1.4764	.78166	.20891	.44	3.15
	2010	14	1.7464	1.01648	.27167	.34	3.64
	2011	14	1.0957	.70289	.18786	.00	2.43
	Total	70	1.8903	1.23306	.14738	.00	6.11
Growth In current assets	2007	14	.2842	.34902	.09328	-.17	1.05
	2008	14	.3113	.42152	.11266	-.03	1.57
	2009	14	.1058	.17404	.04651	-.28	.28
	2010	14	.2665	.14833	.03964	.05	.61
	2011	14	-.1406	.49408	.13205	-.93	.37
	Total	70	.1654	.37583	.04492	-.93	1.57
Leverage	2007	14	4.6323	2.85757	.76372	.01	8.12
	2008	14	4.1375	2.80540	.74977	.01	8.07
	2009	14	4.5136	2.60894	.69727	.09	7.89
	2010	14	4.2052	2.25076	.60154	.05	7.15
	2011	14	4.6442	2.44038	.65222	.29	7.13
	Total	70	4.4265	2.53511	.30300	.01	8.12

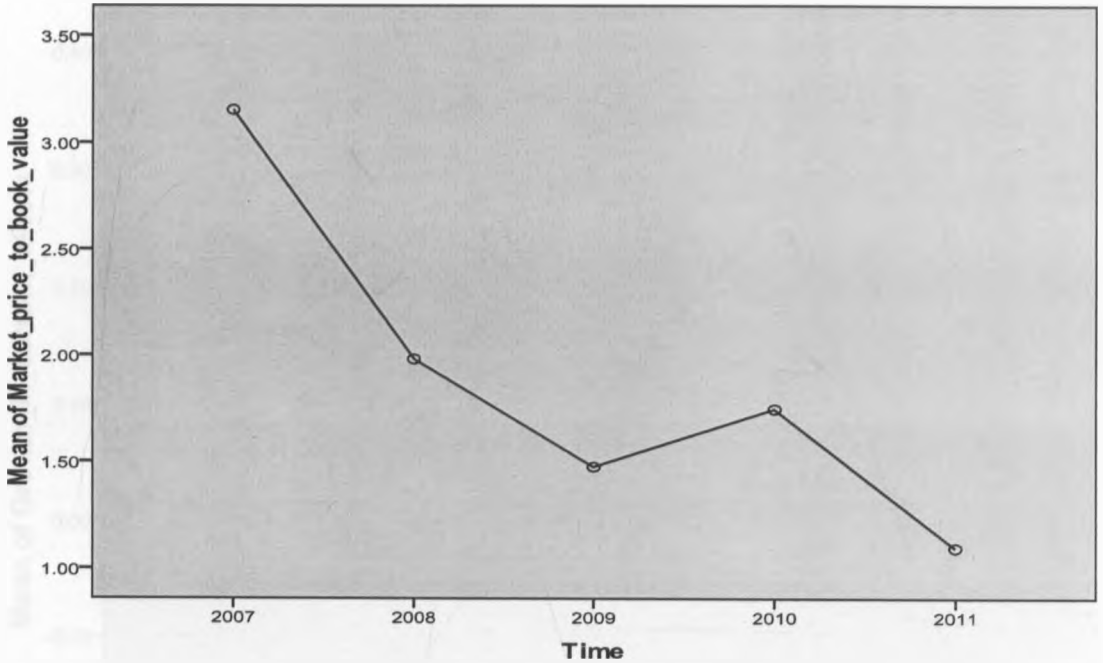
A graphical representation of the trend for the average ROE is presented in figure 4.1 . The trend for the average ROE for the 14 firms in the year 2007 indicated that there was a drop in the average ROE in the year 2008. However, an increase in the average ROE was observed in the year 2009. The highest rise in Average ROE was witnessed in the year 2010. A further increase was observed in the year 2011.

**Figure 4. 1: A graphical representation of the trend for the average ROE**



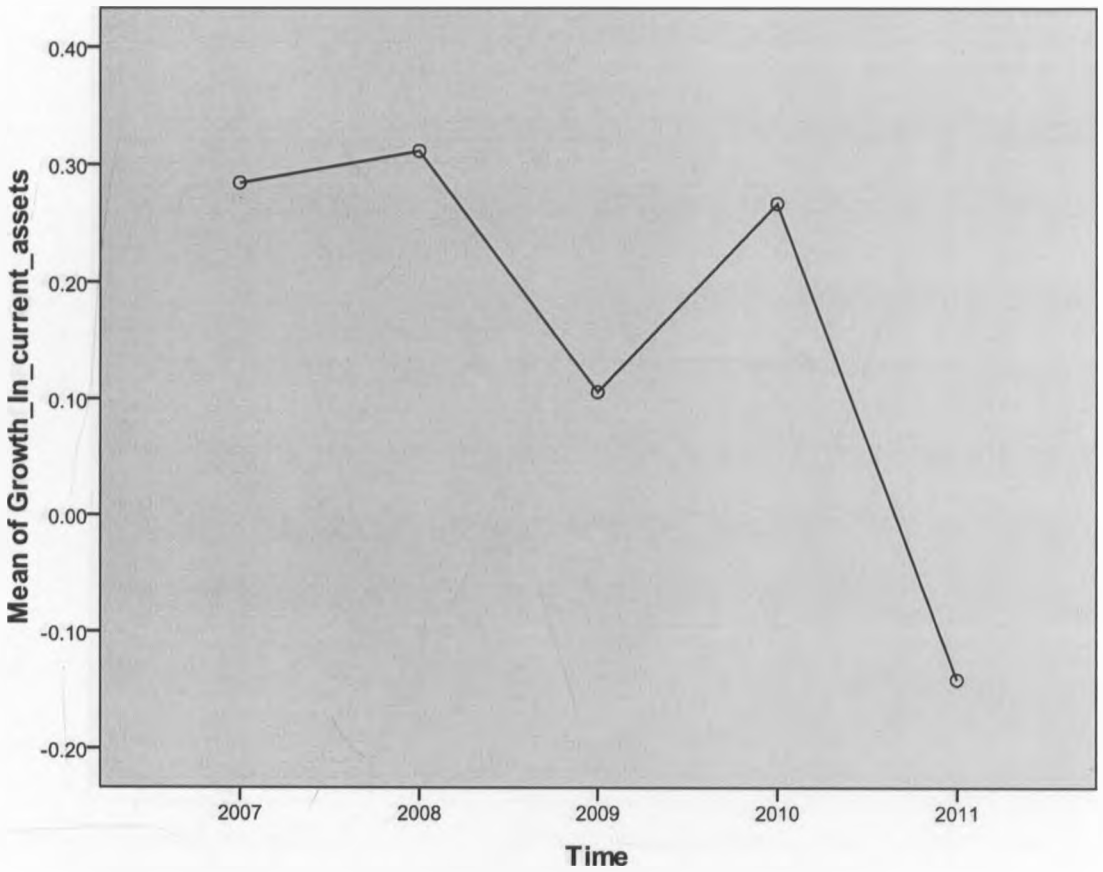
A graphical representation of the trend for the average market price to book ratio is presented in figure 4.2. A decrease in market price to book ratio was observed in year 2008 and 2009. However, a slight increase was observed in the year 2010. However, a decrease in average market price to book ratio was observed in the year 2011.

**Figure 4. 2: A graphical representation of the trend for the average market price to book ratio**



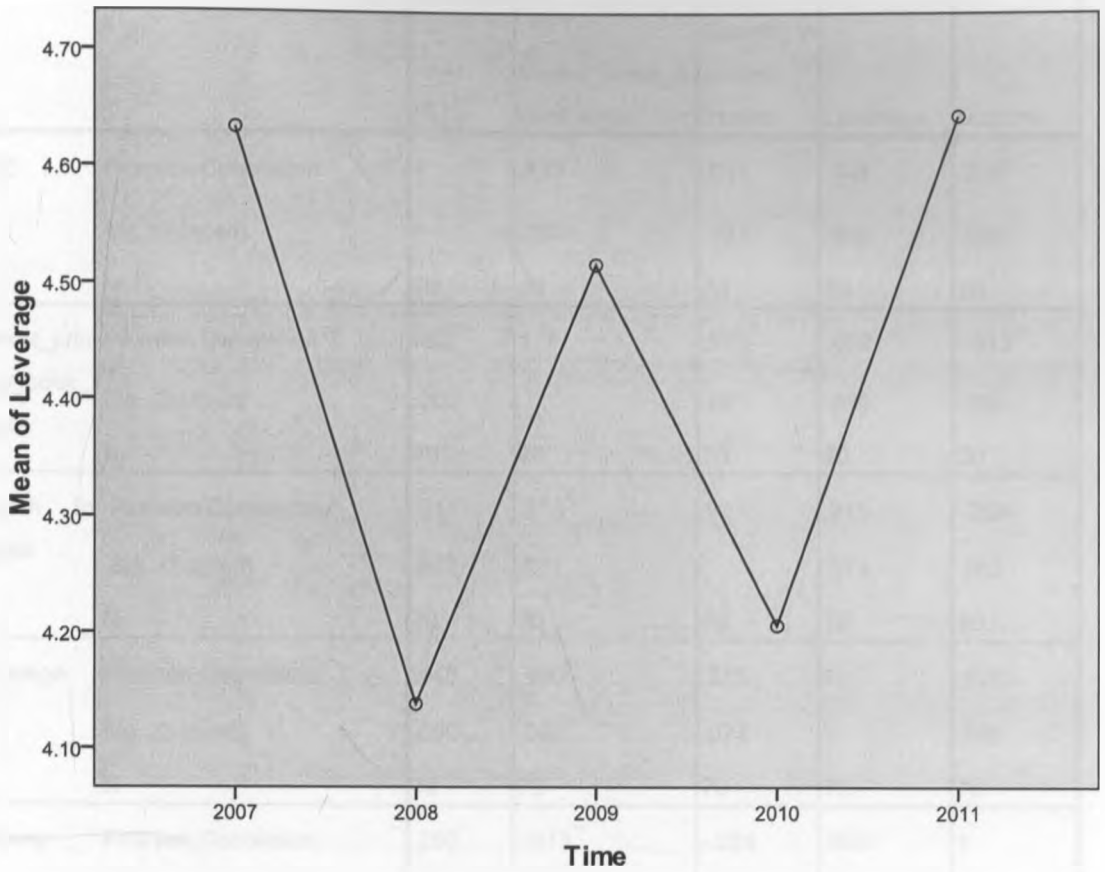
A graphical representation of the trend for the average growth in assets ratio is presented in figure 4.3. A slight increase in average growth in assets ratio was observed in year 2008. However a decrease was observed in the year 2009 followed by an increase in the year 2010. However, a decrease in average growth in assets ratio was observed in the year 2011.

**Figure 4. 3: A graphical representation of the trend for the average growth in assets ratio**



A graphical representation of the trend for the average leverage ratio is presented in figure 4.4. A sharp decrease in average leverage ratio was observed in year 2008. However an increase was observed in the year 2009 followed by another decrease in the year 2010. However, an increase in average leverage ratio was observed in the year 2011.

**Figure 4. 4: A graphical representation of the trend for the average leverage ratio**



### **4.3 Analytical Model**

#### **4.3.1 Correlation results**

Correlation results in table 4.3 revealed that there was a positive and significant correlation between ROE and market price to book value ( $r= 0.422$  and  $p$  value  $=0.000$ ). Results also indicate that the correlation between ROE and growth in assets was insignificant. The correlation between ROE and leverage was positive and significant ( $r=0.448$  and  $p$  value  $=0.000$ ). The correlation between ROE and dummy was positive and significant ( $r=0.260$  and  $p$  value $=0.03$ ).

Since the rule of the thumb is that high correlation range from 0.8 and above, there was no need to investigate the issue of multi co linearity among independent variables as the correlation ranged from 0 to 0.5

**Table 4. 2: Correlation results**

		ROE	Market price to book value	Growth In current assets	Leverage	Dummy
ROE	Pearson Correlation	1	.422**	.011	.448**	.260*
	Sig. (2-tailed)		.000	.927	.000	.030
	N	70	70	70	70	70
Market price to book value	Pearson Correlation	.422**	1	.275*	.480**	-.313**
	Sig. (2-tailed)	.000		.021	.000	.008
	N	70	70	70	70	70
Growth In assets	Pearson Correlation	.011	.275*	1	.215	-.224
	Sig. (2-tailed)	.927	.021		.074	.062
	N	70	70	70	70	70
Leverage	Pearson Correlation	.448**	.480**	.215	1	.000
	Sig. (2-tailed)	.000	.000	.074		.996
	N	70	70	70	70	70
Dummy	Pearson Correlation	.260*	-.313**	-.224	.000	1
	Sig. (2-tailed)	.030	.008	.062	.996	
	N	70	70	70	70	70

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

### 4.3.2 T-Test results

T-tests were conducted to test whether there were significant differences in the mean ROE before demutualization and after demutualization. Results in table 4.3 indicated that the mean ROE before demutualization was 15.58% and the mean ROE after demutualization was 20.39%. The difference between the two means was significant (-0.048%, p value =0.03).



T-tests were conducted to test whether there were significant differences in the mean market price to book value before demutualization and after demutualization. Results in table 4.3 indicated that the mean ROE before demutualization was 2.0231 and the mean market price to book value after demutualization was 1.4211. The difference between the two means was significant (0.78%, p value =0.01).

T-tests were conducted to test whether there were significant differences in the mean growth in assets before demutualization and after demutualization. Results in table 4.3 indicated that the mean growth in assets before demutualization was 23.38% and the mean growth in assets after demutualization was 6.29%. The difference between the two means was insignificant (0.17%, p value =0.08).

T-tests were conducted to test whether there were significant differences in the mean leverage before demutualization and after demutualization. Results in table X indicated that the mean leverage before demutualization was 4.4278 and the mean leverage after demutualization was 4.4247. The difference between the two means was insignificant (0.00313%, p value =1).

**Table 4. 3: T-Test for effect of demutualization**

Dummy	N	Mean	Std. Deviation	Std. Error	Mean Difference	P value
ROE						
Before Demutualization	42	.1558	.08756	.01351	-.04806	.030
After Demutualization	28	.2039	.09014	.01704		
Market_price_to_book_value						
Before Demutualization	42	2.2031	1.32349	.20422	.78202	.008
After Demutualization	28	1.4211	.91932	.17373		
Growth_in_current_assets						
Before Demutualization	42	.2338	.33627	.05189	.17082	.062
After Demutualization	28	.0629	.41364	.07817		
Leverage						
Before Demutualization	42	4.4278	2.69969	.41657	.00313	.996
After Demutualization	28	4.4247	2.31442	.43738		

### 4.3.3 The model results

Regression analysis was conducted to empirically determine whether independent variables were a significant determinant of ROE. Regression results in table 4.4 indicate the goodness of fit for the regression between independent variables and ROE is satisfactory. An R squared of 0.398 indicates that 39.8% of the variances in ROE are explained by the variances in the independent variables.

**Table 4. 4: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.631 <sup>a</sup>	.398	.361	.07280

a. Predictors: (Constant), Dummy, Leverage, Growth\_In\_current\_assets, Market\_price\_to\_book\_value

Anova statistics confirm these results since the reported probability was 0.000. The reported probability was less than the conventional probability of 0.05 (5%) significance level. Anova results indicated that the overall model is significant. This implied that the independent variables did a good job at predicting ROE.

**Table 4. 5: ANOVA Results**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.228	4	.057	10.759	.000 <sup>a</sup>
	Residual	.344	65	.005		
	Total	.573	69			

a. Predictors: (Constant), Dummy, Leverage, Growth\_In\_current\_assets, Market\_price\_to\_book\_value

b. Dependent Variable: ROE

The relationship between market price to book value, leverage and dummy is positive and significant. ( $b_1=0.033$ , p value 0.00,  $b_3=0.009$ , p value 0.028,  $b_4=0.070$ , p value 0.01) However, the relationship between growth in assets is negative and insignificant ( $b_2=-0.019$ , p value, 0.438).

**Table 4. 6: Regression Coefficients**

Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients		
1	(Constant)	.048	.022		2.233	.029
	Market_price_to_book_value	.033	.009	.442	3.736	.000
	Growth_In_assets	-.019	.025	-.080	-.780	.438
	Leverage	.009	.004	.253	2.250	.028
	Dummy	.070	.019	.381	3.645	.001

a. Dependent Variable: ROE

ROE= 0.048+ 0.033Market Price to Book value -0.019Growth In Assets + 0.009 Leverage + 0.070 Dummy

#### 4.4 Summary and Interpretation of Findings

The study findings indicated that the average Return on equity (ROE) for the 14 firms in the year 2007 was 16.49%. The average Return on equity (ROE) for the 14 firms in the year 2008 was 14.71%. The average Return on equity (ROE) for the 14 firms in the year 2009 was 15.55%. The average Return on equity (ROE) for the 14 firms in the year 2010 was 20.05%. The average Return on equity (ROE) for the 14 firms in the year 2011 was 20.72%. The overall Return on equity (ROE) over the 5 year period was 20.72%.

The findings further revealed that the average market to book value for the 14 firms in the year 2007 was 3.1521. The average market to book value for the 14 firms in the year 2008 was 1.9807. The average market to book value for the 14 firms in the year 2009 was 1.4764. The average market to book value for the 14 firms in the year 2010 was 1.7464. The average market to book value for the 14 firms in the year 2011 was 1.0957. The overall average market to book value over the 5 year period was 1.8903.

From the study it was also revealed that the average growth in assets for the 14 firms in the year 2007 was 28.42%. The average growth in assets for the 14 firms in the year 2008 was 31.13%. The average growth in assets for the 14 firms in the year 2009 was 10.58%. The average growth in assets for the 14 firms in the year 2010 was 26.65%. The average growth in assets for the 14 firms in the year 2011 was -14.06%. The overall average growth in assets over the 5 year period was 16.54%.

In addition the findings revealed that the average leverage for the 14 firms in the year 2007 was 4.63. The average leverage for the 14 firms in the year 2008 was 4.14. The average leverage for the 14 firms in the year 2009 was 4.51. The average leverage for the 14 firms in the year 2010 was 4.21. The average leverage for the 14 firms in the year 2011 was 4.64. The overall average growth in assets over the 5 year period was 4.43.

From the findings, the trend for the average ROE for the 14 firms in the year 2007 indicated that there was a drop in the average Roe in the year 2008. However, an increase in the average ROE was observed in the year 2009. The highest rise in Average ROE was witnessed in the year 2010. A further increase was observed in the year 2011.

From the findings it was also revealed that a decrease in market price to book ratio was observed in year 2008 and 2009. However, a slight increase was observed in the year 2010. However, a decrease in average market price to book ratio was observed in the year 2011.

It was also revealed from the findings that a slight increase in average growth in assets ratio was observed in year 2008. However a decrease was observed in the year 2009 followed by an increase in the year 2010. However, a decrease in average growth in assets ratio was observed in the year 2011.

Study findings further indicated that a sharp decrease in average leverage ratio was observed in year 2008. However an increase was observed in the year 2009 followed by

another decrease in the year 2010. However, an increase in average leverage ratio was observed in the year 2011.

The study further revealed that there was a positive and significant correlation between ROE and market price to book value ( $r=0.422$  and  $p$  value  $=0.000$ ). Results also indicate that the correlation between ROE and growth in assets was insignificant. The correlation between ROE and leverage was positive and significant ( $r=0.448$  and  $p$  value  $=0.000$ ). The correlation between ROE and dummy was positive and significant ( $r=0.260$  and  $p$  value  $=0.03$ )

T-tests were conducted to test whether there were significant differences in the mean ROE before demutualization and after demutualization. Results indicated that the mean ROE before demutualization was 15.58% and the mean ROE after demutualization was 20.39%. The difference between the two means was significant ( $-0.048\%$ ,  $p$  value  $=0.03$ ).

T-tests were conducted to test whether there were significant differences in the mean market price to book value before demutualization and after demutualization. Results in table 4.3 indicated that the mean ROE before demutualization was 2.0231 and the mean market price to book value after demutualization was 1.4211. The difference between the two means was significant ( $0.78\%$ ,  $p$  value  $=0.01$ ).

T-tests were conducted to test whether there were significant differences in the mean growth in assets before demutualization and after demutualization. Results in table 4.3 indicated that the mean growth in assets before demutualization was 23.38% and the mean growth in assets after demutualization was 6.29%. The difference between the two means was insignificant ( $0.17\%$ ,  $p$  value  $=0.08$ ).

T-tests were conducted to test whether there were significant differences in the mean leverage before demutualization and after demutualization. Results in table 4.3 indicated that the mean leverage before demutualization was 4.4278 and the mean leverage after

demutualization was 4.4247. The difference between the two means was insignificant (0.00313%, p value =1).

Regression analysis was conducted to empirically determine whether independent variables were a significant determinant of effects of demutualization. Regression results in table 4.6 indicate the goodness of fit for the regression between independent variables and dependent variable is satisfactory. An R squared of 0.398 indicates that 39.8% of the variances in ROE are explained by the variances in the independent variables. ANOVA results indicated that the overall model is significant. Thus implied that the independent variables did a good job at predicting ROE.

The relationship between market price to book value, leverage and dummy is positive and significant. ( $b_1=0.033$ , p value 0.00,  $b_3=0.009$ , p value 0.028,  $b_4=0.070$ , p value 0.01) However, the relationship between growth in assets is negative and insignificant ( $b_2=-0.019$ , p value, 0.438).

The findings disagree with those of Morsy and Rwesagira (2010) who found that demutualization did not have improved the financial performance (ROE). However, the findings agree with the study of Treptow(2006) who found out that demutualization brings significant beneficial effects on demutualizing exchange's liquidity. In comparison to pre demutualization levels, turnover and resiliency increase, while spreads tighten

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Summary

Chapter one discussed the problem statement and the objectives of the study. The study aimed to investigate the effect of demutualization on the financial performance of the financial and investments firms quoted at the Nairobi Securities Exchange and assess the case for demutualization.

Chapter two discussed the literature review and the various opinions of different people, the theories backing the study, the empirical studies supporting the research project and the actual empirical evidences that had been revealed by earlier researchers in this area.

Chapter three presented the research methodology which consists of the kind of research design the study has adopted, the population and the sampling size, in this case a sample of 14 companies were chosen which represents all the financial and investments companies quoted at the NSE, also the kind of data collected is covered in this area and the data analysis tools used in the project is also covered in this chapter.

Chapter four presented the findings.

T-tests were conducted to test whether there were significant differences in the mean ROE before demutualization and after demutualization. Results in table X indicated that the mean ROE before demutualization was 15.58% and the mean Roe after demutualization was 20.39%. The difference between the two means was significant (-0.048%, p value =0.03).

T-tests were conducted to test whether there were significant differences in the mean market price to book value before demutualization and after demutualization. Results in table X indicated that the mean ROE before demutualization was 2.0231 and the mean market price to book value after demutualization was 1.4211. The difference between the two means was significant (0.78%, p value =0.01).

T-tests were conducted to test whether there were significant differences in the mean growth in assets before demutualization and after demutualization. Results in table X indicated that the mean growth in assets before demutualization was 23.38% and the mean growth in assets after demutualization was 6.29%. The difference between the two means was insignificant (0.17%, p value =0.08).

T-tests were conducted to test whether there were significant differences in the mean leverage before demutualization and after demutualization. Results in table X indicated that the mean leverage before demutualization was 4.4278 and the mean leverage after demutualization was 4.4247. The difference between the two means was insignificant (0.00313%, p value =1).

## **5.2 Conclusions**

From the study, it was possible to conclude that there was an increasing trend in return on assets over the five years. Results also led to conclusion there was a decreasing trend in market price to book value ratio. The same declining trend was observed in growth of assets. However, there was no clear trend in the leverage ratio.

Results also led to the conclusion that there exists a significant and positive correlation between ROE and market price to book value and also between ROE and leverage. furthermore, it was possible to conclude that the correlation between the dummy of demutualization was positive and significant.

It was also possible to conclude that there exists a significant difference between return on equity (ROE) before demutualization and after demutualization. This also leads to the conclusion that demutualization affects the performance of finance and investment companies.

T-test results also led to the conclusion that there was a significant difference in market price to book value ratio before and after demutualization. Regression analysis was conducted to empirically determine whether independent variables were a significant



determinant ROE. Regression results indicate the goodness of fit for the regression between independent variables and dependent variable is satisfactory. Anova results indicated that the overall model is significant. This implied that the independent variables did a good job at predicting ROE.

Results led to the conclusion that there exists a positive and significant relationship between return on equity ( ROE) and market price to book value . This implies that an increase in market to book value ratio led to an increase in return on equity (ROE). It was also possible to conclude that there was a positive and significant relationship between ROE and Leverage. It was also possible to conclude that there was a significant and positive relationship between dummy of demutualization and ROE. Findings led to the conclusion that demutualization leads to improvement of financial performance (ROE).

### **5.3 Policy Recommendations**

The study presented recommendations for practice and for policy. The study recommended that demutualization efforts should be continued. The governance structures need to be put in place so as to enhance returns of the stock exchange.

The study also suggest that despite concerns that demutualized and listed financial and investments firms entail new market risks that need regulatory intervention, the mean of these firms have not changed significantly after demutualization. However, market risk does vary considerable across the firms. Therefore a better way of assessing this different risk and how it affects demutualization must be found out.

Our evidence suggests that stock exchange demutualization does appear to improve the performance of the financial and investment firms quoted at the Nairobi securities exchange. We recommend that this study be replicated after couple of years. From a broader perspective, we note that there are several market measures that improved after Demutualization, but their improvement is not significant. With longer time periods under investigation, the impact of demutualization will be much clearer.

Decisions to demutualization are based in essence on the recognition that the old Member-owned organizational structure fails to provide the flexibility and the financing needed to compete in the global competitive environment. Demutualized stock exchange is driven by profit seeking investors who want to produce better financed organizations with greater ability to respond quickly to the fast changing market place, this must be given all the necessary impetus t so that the exchange can be in good position to cope up with the intense global competition and advances in technology, electronic trading has the potential to led to competition between exchanges by removing geographical boundaries and monopolies. Companies do not need to list their stocks in the same country where they operate and the growth of ECNs puts pressure on the financial exchanges to adopt the most efficient trading systems.

#### **5.4 Limitations of the study**

One of the limitations of the study is that demutualization is an ongoing process and had not been completed at the time of study. So there could be a lag effect on ROE that was not captured.

Another limitation relates to the operationalization of demutualization. A dummy was used which assumed that the process of demutualization affected all companies equally, which in the actual sense is not right. To guarantee the consistency and availability of the data, the analysis is limited to only the financial and investments firms that are listed in the Nairobi securities exchange data are derived from the NSE manual hand book and annual reports of the those companies.

Another limitation was in regard to the type of research design. This research was quantitative and failed to capture qualitative issues. Perhaps an interview with the brokers on how they perceive demutualization and its effects would have yielded some hidden information.

## **5.5 Suggestions for further study**

The study suggests that another research be done once all the aspects of demutualization are concluded so that better results can be obtained. This study covers a shorter period after demutualization which may be giving different results like if for instance a broader period of ten or more years was adopted.

The study also suggests that broader areas of study and a bigger number of population be covered so that bigger results can be obtained in other various variables that can give whether really demutualization had effect on the financial performance. This study was only limited to 14 companies of financial investments firms quoted at the NSE.

Its also suggested that the qualitative aspect must also be introduced so that first hand information can be obtained from the brokers and even management of the various firms that are listed in the security market exchange. Questionnaire must be administered and one to one interview with the brokers be held so that the qualitative can also be measured. The study in this dwelt only quantitative aspect so much and failed to capture the qualitative aspects.

We can further suggest that demutualization of NSE be compared with other demutualized exchanges and the impact they had on the listed firms so that we can understand how the NSE is fairing in comparison with other exchanges in the financial world.

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## **APPENDICES**

### **APPENDIX I: LIST OF FINANCIAL AND INVESTMENT COMPANIES LISTED AT NAIROBI SECURITIES EXCHANGE BETWEEN 2007 – 2011**

1. BARCLAYS
2. CFC
3. DIAMOND TRUST
4. EQUITY
5. HOUSING FINANCE
6. CENTUM INVESTMENT
7. JUBILEE
8. NATIONAL BANK
9. KCB
10. KENYA REINSURANCE
11. NIC
12. OLYMPIA CAPITAL
13. PAN AFRICA
14. STANDARD CHARTERED



## APPENDIX II: DATA COLLECTED

	ROE	Market price to book value(Market capitalization/Net Assets value)	Growth in Asset(Current Assets/Previous year Asset-1)	Leverage(Debt/Equity)	Dummy
2011c1	0.276255005	2.43	-0.031238581	4.715669165	1
2011c2	0.084802433	0.57	0.072035968	6.76915662	1
2011c3	0.226188161	1.34	-0.93446539	7.133937372	1
2011c4	0.301152107	1.77	0.372512551	4.725360945	1
2011c5	0.131912229	0.61	0.0885472	5.756085814	1
2011c6	0.239804644	1.36	-0.823673056	0.286859593	1
2011c7	0.284637863	1.26	0.239430404	4.667730935	1
2011c8	0.147861794	0.54	0.143899679	5.56669887	1
2011c9	0.247515819	1.13	0.31572708	6.454433849	1
2011c10	0.166103023	0	0.107622507	0.656744532	1
2011c11	0.257260201	0.9	-0.919718384	6.50587834	1
2011c12	0.046949153	0.27	-0.826114246	0.435284749	1
2011c13	0.208893171	0.94	0.077552229	4.417418403	1
2011c14	0.282047569	2.22	0.149218457	6.92708076	1
<b>Average ROE</b>	<b>0.207241655</b>	<b>1.18</b>	<b>-0.140618827</b>	<b>4.644167139</b>	<b>1</b>
2010c1	0.336850469	2.7	0.045725272	4	1
2010c2	0.05683172	0.83	0.097025294	4.65555248	1
2010c3	0.24193447	2.15	0.253769203	7.148420336	1
2010c4	0.262167328	3.64	0.418660477	4.257241582	1
2010c5	0.089146046	1.43	0.605231631	5.87704887	1
2010c6	0.139222728	1.03	0.369568215	0.050890466	1
2010c7	0.329747947	1.63	0.293010659	4.50284821	1
2010c8	0.203625197	1.09	0.16773437	5.045221107	1
2010c9	0.1834402	1.64	0.288929823	5.4236563	1
2010c10	0.145778664	0.63	0.149346764	0.630578875	1
2010c11	0.223137424	1.98	0.240876886	6.064803563	1
2010c12	0.009122225	0.34	0.236856841	0.371318204	1
2010c13	0.321555933	1.72	0.410878108	4.823464506	1
2010c14	0.264431594	3.64	0.15323505	6.021070898	1
<b>Average ROE</b>	<b>0.200499425</b>	<b>1.746428571</b>	<b>0.266489185</b>	<b>4.239406849</b>	<b>1</b>
2009c1	0.251590252	2.52	-0.021565486	5.810243701	0
2009c2	0.001766233	0.61	0.149035634	5.277330075	0
2009c3	0.16745819	1.41	0.187608019	7.243996994	0
2009c4	0.184826262	2.32	0.278058799	3.400733368	0
2009c5	0.057489414	1.02	0.275982191	3.477700806	0
2009c6	0.053449232	0.96	-0.214655561	0.091802358	0

2009c7	0.240814286	1.36	0.174903667	5.256130443	0
2009c8	0.185004044	0.99	0.203971547	5.500557685	0
2009c9	0.17908632	1.99	0.019873074	7.551665908	0
2009c10	0.160865282	0.77	0.097693047	0.648434795	0
2009c11	0.159846496	1.5	0.115889819	6.001834884	0
2009c12	0.089735166	0.44	-0.277041069	0.326825365	0
2009c13	0.104853106	1.63	0.241164242	4.709129925	0
2009c14	0.340056181	3.15	0.250045529	7.893723291	0
<b>Average ROE</b>	<b>0.155488604</b>	<b>1.476428571</b>	<b>0.105783104</b>	<b>4.513579257</b>	<b>0</b>
2008c1	0.269999511	3.35	0.068848346	7.234862923	0
2008c2	0.043983489	0.85	1.568692914	4.773532569	0
2008c3	0.160455568	1.59	0.559707931	1.152096521	0
2008c4	0.199693565	3.33	0.486151933	3.02854954	0
2008c5	0.037352536	1.22	0.378533752	2.913674675	0
2008c6	0.107490237	1.7	-0.032749616	0.008383253	0
2008c7	0.222566832	1.73	0.125978364	5.304343647	0
2008c8	0.199845518	1.39	0.0309417	5.877700716	0
2008c9	0.198733795	2.47	0.587087445	8.067767878	0
2008c10	0.185047715	0.96	0.05424141	0.707370306	0
2008c11	0.186440462	2.32	0.362459463	6.657390109	0
2008c12	0.045717402	0.53	0.048501041	0.44887881	0
2008c13	-0.08094719	2.51	0.032647159	4.138622669	0
2008c14	0.282708719	3.78	0.086670991	7.611290806	0
<b>Average ROE</b>	<b>0.147077725</b>	<b>1.980714286</b>	<b>0.311265202</b>	<b>4.137461745</b>	<b>0</b>
2007c1	0.279582711	6.11	0.017955995	7.976245376	0
2007c2	0.153787089	3.35	0.17474144	6.194911698	0
2007c3	0.135060019	2.81	0.263389711	5.570452507	0
2007c4	0.126701079	3.64	0.18359048	2.558088087	0
2007c5	0.050825883	3.64	0.298388318	6.169648703	0
2007c6	0.133565233	1.76	-0.172312313	0.00877123	0
2007c7	0.171656779	2.48	0.335185022	3.644970503	0
2007c8	0.225355958	1.88	0.09375278	7.337489972	0
2007c9	0.225266838	4.31	1.029786171	8.124017809	0
2007c10	0.115942913	1.41	0.311650374	0.793557167	0
2007c11	0.157393209	3.91	0.099392728	5.602528678	0
2007c12	0.07542	0.38	0.0421	0.421	0
2007c13	0.139809552	3.32	0.248011184	3.103410201	0
2007c14	0.317870507	5.13	1.053570246	7.347551779	0
<b>Average ROE</b>	<b>0.164874126</b>	<b>3.152142857</b>	<b>0.284228724</b>	<b>4.632331694</b>	<b>0</b>