THE IMPACT OF DEMUTUALIZATION ON FINANCIAL PERFORMANCE OF A STOCK EXCHANGE: A CASE OF NAIROBI SECURITIES EXCHANGE

BY

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DECLARATION

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

Signature……. Date……

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This project has been submitted for examination with our approval as university supervisor.

Signature: ……. Date: ……

Mr. Gichana Jay Murray

Supervisor.

TABLE OF CONTENTS

DEDICATION

I dedicate this project to all my family members for their support.

ACKNOWLEDGEMENT

I would like to thank my supervisors; Mr. Gichana Jay Murray and Dr. Winnie Nyamute for their support and commitment that saw me complete this project. I thank all my class-mates and friends who supported me in all the activities that enabled me to complete this project.

ABBREVIATIONS AND ACRONYMS

AR: Average Return

BSC: Balance Score Cards

BSE: Bombay Stock Exchange

CAR: Cumulative Abnormal Returns

CBK: Central Bank of Kenya

CMA: Capital Market Authority the

GDP: Gross Domestic Products

IPO: Initial Public Offer

IRA: Insurance Regulatory Authority

LSE: London Stock Exchange

MCSI: Morgan Stanley Capital International

NASDAQ: National Association of Securities Dealers Automated Quotations

NSE: Nairobi Security Exchange

NYSE: New York Stock Exchange

SPSS: Statistical Package for Social Sciences

TSE: Tokyo Stock Exchange

USD: USA Dollar

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Since its inception in 1954, Nairobi Securities Exchange operated as a mutually owned organization. This resulted in numerous challenges including limited ability to fund its operations, financial unviability, poor management and regressive rules and regulations that did discouraged listing among companies. The challenges affected the ability of NSE to efficiently and effectively carry out its activities. This informed the decision to demutualize NSE that ended with self-listing of NSE in 2014. The objective of the study was to determine the impact of demutualization on financial performance Nairobi Securities Exchange. The study adopted an event window methodology. Secondary data was collected on share prices, NSE-20 share index and market capitalization. The study analyzed the collected data using SPSS. The study found out that that pre-demutualization had significant impact on financial performance of NSE. Post-demutualization had significant impact on financial performance of NSE. Market capitalization had significant impact on financial performance of NSE. The study concludes that demutualization had a significant impact on financial performance of NSE. The study recommends that the management team of NSE should seek to increase the value of market capitalization in order to improve on financial performance. The senior management team of NSE should establish sound policies and regulations that would increase the share prices and therefore financial performance of the company.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The increased level of competition among firms has affected the way operations are carried out. The increasing level of globalization coupled with an increase in competition requires organizations today to come up alternative ways of remaining competitive and profitable. These forces of globalization and competition have affected all firms including stock exchange markets. Investors on the other hand are always demanding for value from the funds they have invested. As a way of countering these increased forces, most organizations have opted for demutualization (Aldeehani & Bouresli, 2017). This study seeks to determine how the adoption of demutualization has affected performance of stock exchange.

The study will be anchored on the transaction costs theory and the theory of the firm and the agency theory. According to transaction costs theory, the main reasons as to why firms exist is to lower transaction cots hence increasing volume of trade and create more value. One way of lowering transaction costs according to theory is through demutualization. The transaction costs theory therefore indirectly advocates for demutualization so as to lower transaction costs and therefore improve on performance (Coase, 1937). According to the theory of the firm, all actions and decisions made by a firm are directed towards making profits. Thus, a decision of stock market to demutualize is to generate profits and thus performance of the firm as seen in the theory of the firm (Baumol, 1959 & 1962; Marris, 1964 & Williamson, 1966). The agency theory describes relationship between principal

and the agents. In this context, the agency theory indicates the relationship between shareholders (principal) and the management team (agents) of an organization. Conflict of interest is likely to arise where the management may undertake actions that are not in line with shareholders (Jensen & Meckling, 1976). Demutualization is likely to increase this conflict of interest in a firm as suggested by the agency theory hence adversely influencing financial performance.

A stock exchange plays an important role in any economic development by allowing companies to access sources of capital and allowing investors to transact in securities. Nairobi Securities Exchange (NSE) is a Kenyan security exchange market that plays an important role in growth and development of the economy. Since its inception, NSE was operating as mutual owned company. Being a mutual owned company meant that that NSE could only render certain services at the least price to benefit its members (owners). Owners had all exclusive rights to use the services that NSE offered. As a mutual company however, NSE faced numerous challenges including commercial inflexibility, poor governance, inability top effectively respond to the needs of the market, limited innovative ability, inflexible rules and regulation to investors and insufficient funding. All these challenges hampered the ability of NSE to carry out its role effectively and performance by extent (Murungi, 2017). In response to these challenges, NSE started the process of demutualization in 2005 that ended in 2014 with self-listing and issuance of an Initial Public Offer (IPO) (NSE, 2017). Investors at NSE are divided into institutional and individual. As of 2016, individual investors held 13.09% while institutional investors occupied 86.08% (NSE, 2016). This study thus seeks to determine how demutualization has impacted on financial performance of NSE.

1.1.1 Demutualization of Securities Exchange

Demutualization is the process of converting a mutually owned company to a share owned entity. It is the process of changing company ownership structure. Various activities are undertaken during demutualization process including seeking for approvals from relevant regulations, converting membership rights to equities and issuance of shares through IPO that would culminate into self-listing (Hammad, Awan & Rafiq, 2015). Demutualization can also be defined as a process of converting a mutually owned entity to a profit making company. At the end of demutualization, all control rights and residual claims are reassigned among shareholders. Thus, demutualized firms are those owned by shareholders with public limited liability status (Fulton & Girard, 2015).

The history of demutualization dates back in 1993 when the Stockholm Stock Exchange changed status from a not for profit to a profit making organization (Sial & Tahir, 2013). Since then the trend has spread globally starting with Australian Stock Exchange that was the first security market to demutualize and had an Initial Public Offering. Many security exchange markets across the world have adopted demutualization including the Bombay Stock Exchange (BSE), London Stock Exchange and New York Stock Exchange. In Kenya, demutualization of NSE began in 2005 with formation of a demutualization committee in 2006. Several factors inform security markets to demutualize including commercial viability, competitiveness improved governance, and efficient response to market needs increased capital base and reduction in conflict of interest (Rydzewska, 2015). The study seeks to determine how demutualization has had an impact on financial performance of NSE.

1.1.2 Financial Performance

Performance is an underlying measure of why an organization exists. Performance is how well an organization attains its goals and objectives within a stipulated time frame. An organization can measure its performance by use of either financial or non-financial measures. Financial measures of performance are quantitatively expressed. It is measured using return on assets, return on investment, return on equity and profitability. Financial performance is an underlying reason why firms (especially for profit firms) exist (Ubochioma, 2016).

Non-financial measures of performance are mostly expressed in qualitative terms. Being qualitative means they are so subjective. Financial performance covers people and the environment. The people aspects of non-financial measure of performance include employee morale, customer satisfaction and loyalty. The environment measures of performance asses the overall effect of operations of the business to its surrounding. This is usually presented in a sustainability report in most organizations today (Yang & Pangastuti, 2016).

Organizations today have advanced in the way they measure their performance. This has seen adoption of Balance Score Cards (BSC). A BSC links performance of an organization to its overall strategy. It is made up four perspectives; learning and growth, financial, customer and business processes perspectives. Financial perspective is the basis of organization performance of any business (Kaplan & Norton, 1992.

1.1.3 Demutualization and Financial Performance of Stock Exchanges

As a process, demutualization can result into self-listed public company or a demutualized but private company. A demutualized company can opt to go public through an IPO that would help in raising capital to be used in funding profitable investments and therefore performance. According to Davis (2016), demutualization increases the trading volume of a security exchange. Demutualization improves competitiveness, flexibility and governance of institutions and these have direct influence on performance.

In a study, Azzam (2010) noted that demutualization of a stock market improved efficiencies and effectiveness in an organization. The study noted positive influence of demutualization on financial performance of a stock market. Magadi, Muza and Kandiero (2015) in a study established that positively influenced financial performance of a firm. Hammad, Awan and Rafiq (2015) in another related study established that announcement of demutualization had mixed effect of positive and negative effect on financial performance of stock markets. Thus, there exists relationship between demutualization and performance that the current study seeks to explore.

1.1.4 Nairobi Securities Exchange

A stock exchange market plays an important role in growth and development of an economy. A stock exchange acts as a market that brings to together suppliers and demanders of funds. These funds exchanged in a stock exchange can be long term or short term. Long term sources of funds include issue of bonds and equities. Short term sources of fund exchanged in a stock market include treasury bills and commercial papers. A stock exchange fosters a saving and investment culture among participants. These savings and

investments form the basis of economic growth and development as they have direct influence on the Gross Domestic Products (GDP) (Rydzewska, 2016).

Across the world, there are several stock exchanges that move trillions of shares on a daily basis. Some of these global stock exchanges include the New York Stock Exchange (NYSE), Tokyo Stock Exchange (TSE), London Stock Exchange (LSE), NASDAQ and Hong Kong Stock Exchange. NYSE and NASDAQ are the first two biggest stock exchanges across the world with market capitalizations of $19.223 Trillion USD and $6.831 Trillion respectively.

In Kenya Nairobi Securities Exchange (NSE) was started in the year 1954 as a mutually owned organization by members. Being a mutually owned firm resulted into a number of challenges that affected its efficiency in carrying out its activities. The rules and regulations at that time did not encourage most companies to get listed. There was limited funding capability that limited expansion efforts. The management was conservative thus adversely affecting its performance. This informed the efforts to demutualize that commenced in 2005 with establishment of a demutualization committee in 2006. The demutualization process culminated into self-listing of NSE in 2014 (NSE, 2018).

Today, NSE is one of the leading stock exchanges in Africa in terms of market capitalization. According to MSCI Indices 2013 Performance Results, NSE was ranked as the fourth best performing stock market across the world having attained 43.58% returns. This study thus seeks to determine whether demutualization has contributed towards this performance of NSE.

1.2 Research Problem

Demutualization as a process helps a mutually owned organization to be converted into a public company. Demutualized company can readily issue shares on security market which increase its capital base for investing in projects that would maximize the wealth of shareholders. Demutualization is likely to increase the conflict of interest as a new management team is established that may be motivated to pursue their personal interests at the expenses of the financial goals of an organization. This would adversely affect financial performance of a demutualized company (Hammad et al, 2015).

Since its inception in 1954, Nairobi Securities Exchange operated as a mutually owned organization. This resulted in numerous challenges including limited ability to fund its operations, financial unviability, poor management and regressive rules and regulations that did discouraged listing among companies. The challenges affected the ability of NSE to efficiently and affectively carry out its activities. This informed the decision to demutualize NSE that ended with self-listing of NSE in 2014 (NSE, 2018). A comparison of performance of NSE before and after demutualization reveals interesting findings. For instance, NSE today has grown to become one of the largest security markets in Africa. The innovative ability of NSE has improved with recent introduction of a derivative market duped NEXT. A critical analysis of financial performance NSE for periods 2012, 2013 and 2014 showed a net profit of Kshs. 85 Millions, 263 Million and Kshs. 320 Million respectively (NSE, 2017). It is therefore important to determine if demutualization has contributed to this trend in performance of NSE and this informs the study.

A number of studies have explored how demutualization influences performance of organizations in different contexts. Globally, Wahid, Azam, Adil and Naqvi (2018) looked

at the spillover influence of demutualization on performance of stock exchanges. Slimane and Angulo (2017) looked at how demutualization influenced performance of stock exchanges financially. The findings of the study indicated that demutualization improved governance that enhanced financial performance of an organization. In Bangladesh, Al-Mamun and Akter (2013) investigated how demutualized benefited a stock market. The key finding of the study was that demutualization improved financial performance of an organization. All these studies however were done in developed countries that have developed security exchanges. This creates contextual gaps.

Locally, Murungi (2017) examined how demutualization impacted on confidence of shareholders at NSE. The study noted that demutualization positively influenced investor confidence at NSE thus improving on performance. Using a case of investment and financial firms listed on NSE, Ibrahim (2012) demutualization influenced their financial performance. The study revealed that demutualization positively influenced performance of listed firms. Thus, few local studies than global studies have been done on demutualization and how it affects performance. None of the local study linked demutualization and performance of NSE which creates gaps. To fill these gaps, the current study seeks to determine the impact of demutualization on performance of a stock exchange: A case of Nairobi Securities Exchange. To fill these gaps, the current study used an event study methodology with adoption of a descriptive design and collection of secondary to answer one research question: how had demutualization affect the financial performance Nairobi Securities Exchange?

1.3 Research Objectives

To determine the impact of demutualization on financial performance Nairobi Securities Exchange.

1.4 Value of the Study

The study would be of great benefit to theory, practice and policy. The findings of the study will add to theory on demutualization and how it influence organizational performance. The study would provide a basis of carrying out future studies among scholars and academicians. The study would expand literature and facilitate other studies in future.

In practice, the study would provide meaningful evidence of how demutualization affects performance of an organization. The study would strengthen demutualization decision making ability of the management team in mutually owned firms seeking to be demutualized. This would generally improve performance of companies.

Policy makers including the Capital Market Authority (CMA), the Central Bank of Kenya (CBK) and the Insurance Regulatory Authority (IRA) would rely on the findings of this study to advice mutually owned firms in their industries on the best way to demutualize and how this will influence their performance. This would help these companies to gain competitive advantage and therefore improve their performance. This would also improve on governance and financial viability of the successfully demutualized organizations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews relevant theories that form the basis of the study. The determinants of financial performance are also provided. The chapter reviews empirical literature on demutualization and how it influences performance. The gaps from this literature are also pointed out in a Table. The conceptual framework showing how variables of the study are interrelated is also provided.

2.2 Theoretical Foundation

This section points out the theories that shall be used to support the current study. The study will be informed by the Transaction Costs Theory, the Agency Theory and the Theory of the Firm. Each of these theories is discussed in details in subsequent sections.

2.2.1 Transaction Costs Theory

This theory was formulated by Ronald Coase (1937), a British Economist, to justify existence of a firm. According to this theory, the rationale for existence of firms is reduction in transaction costs. These transaction costs raise the volume of trade and increase economic creation of value of the firm. The theory views a firm as a composition of several contracts which economizes and reduces the transaction costs incurred.

This theory offers an explanation on the rising of demutualization on a global scale. According to this theory, the increased level of competition resulting from use of advanced and sophisticated forms of technology has lowered transaction costs of trading on security

exchanges by investor. This has also allowed for flexible pricing and reduced chances of manipulation of the market which existed in a mutually owned company. The advancing technologies and forces of globalization have also facilitated cross listing of shares of investors. In response to the advanced technologies, most security exchanges have therefore opted to demutualize. This is because mutual structures in this case are costly and less appealing to investors and other participants in an exchange process (Cox & Steigerwald, 2016).

The theory further suggests that transaction costs security exchanges increase with increase in information asymmetry, uncertainty and room of opportunistic attributes and behavior among participants. This features and behavior are most common in mutually owned structures where such behavior is enjoyed by members. In a mutually owned structure, investors have to pay members for an exchange as in most cases, only those members had knowledge on shares. These opportunistic behaviors however are not justified in demutualized firms. This is because advancement in technology lowers the cost of accessing information on shares (Tortia, 2017).

2.2.2 Agency Theory

This theory was formulated by Jensen and Meckling (1976) to illustrate the relationship existing between the principal and an agent. An agent acts on behalf of the principal thuds all actions undertaken should be influenced and controlled by the principal. This relationship between the principal and the agent is the basis of corporate governance in organizations. In corporate governance, the there exists relationship between shareholders, the management team and the board of directors. Shareholders are principals while the

management team is the agent. In this relationship, threw management has only objective of maximizing the wealth of shareholders. However, management of an organization may undertake actions that are not in line with shareholders, a board of directors is put in place by shareholders to monitor and control actions of the management team (Sial, Talib, Ashkanani & Alam, 2015).

Thus, the board of directors helps in reducing conflict of interest that arises from the principal agent relationship. One way through which board of directors effectively monitors and control action of the management team (agents) is by ensuring that all actions undertaken are in line with the goals of shareholders. Demutualization is one of these activities that a mutually owned business can undertake. Demutualization helps in improving corporate governance of an organization thus reducing conflict of interest between parties (Sarpong, 2017). This has bearing influence on performance of demutualized organizations.

2.2.3 The Theory of the Firm

This origin of this this theory is contributed by Baumol (1959 & 1962), Marris (1964) and Williamson (1966). This theory is founded in neoclassical economics and it states that firms exist and make decisions that improve their profitability. In the market, firms interact with others to price product and allocate resources so as to maximize their profits. According to this theory, the behavior of any firm is deemed to be driven by ability to maximize profits.

This theory forms basis of making decisions with regard to allocation of resources, techniques of production and volume of production. The theory of the firm has however

been criticized on the basis that it focused on broad industries. As such, it could not explain why companies produce goods and service they do and what motivates the choice of firms in allocation of resources during the production process (Çal & Lambkin, 2017).

This theory is relevant to the study because it supports the decisions (putting in place marketing strategies) that firms make aimed at improving performance. The theory shows that firms allocate resources in most viable avenues of increasing profitability. One way that firm enhances their performance ids through allocation of resources in demutualization that drive performance. Thus, the theory links demutualization and performance of security exchanges.

2.3 Determinants of Financial Performance of Security Market

This section presents literature on factors determining performance of security markets. The identified factors of interest include market capitalization, corporate governance, demutualization and size of the security market.

2.3.1 Demutualization

Demutualization converts a mutually owned organization into a private or publicly listed company (Boussetta, 2017). The subsequent effect of demutualization is improving governance and financial viability of the firm that directly influences performance. A demutualized organization will in most cases undertake an initial public offering that would improve financial performance. Demutualization would see institution of boards of directors that would effectively monitor and control the actions of managers and therefore influencing financial performance (Girotti & Meade, 2017).

Studies have argued that demutualization increases the conflict of interest as it separates ownership and management of a corporation (Rydzewska, 2016). The management team of demutualized firm may be motivated by personal goals and interests at the expense of the goals of the firm through increased extravagance and allocation of heavy salaries and perks. In deciding on investment projects, such management may be less risk averse and thus undertaking investments that are not profitable. All these actions would adversely affect financial performance (Malkiel, 2003).

2.3.2 Market Capitalization

Market capitalization describes the total value of companies listed on a securities exchange (Gormley & Keim, 2016). It is a product of the total volume of shares moved and the current price. It provides a summary on the activities taking place in as far as a given security is concerned. All factors held constant, a rise in market capitalization would increase performance of a security exchange. A rise in market capitalization is an expression of shareholders confidence and therefore would increase uptake of shares that would increase performance (Boussetta, 2017).

Market capitalization plays an important role during valuation of securities of listed companies since it indicates the value of all outstanding shares of the company on a given date. According to Appel, Gormley and Keim (2016), an increase in market capitalization increases profitability of listed firms on stock exchange explained by accruing economic of scale. Edelen, Ince and Kadlec (2016) noted that existence of information asymmetry renders market capitalization of listed firms as less accurate in determining the exact value of the firm.

2.3.3 Size of the Security Market

Size is commonly measured by logarithm of assets that an organization has. Some security markets perform better than others because of differences in sizes. Size particular explains why security markets like NYSE and NASDAQ perform better than others. Large security markets are able to enjoy economies of scale that accrue because of their sizes. They move trillions of shares on a daily basis and thus more performance (Akinsoyinu, 2017).

Size of the security market facilitates cross listing of firms stocks in more than one exchange market. For members of the East Africa Community for example, there is the East Africa Security Exchange (EASE) where firms in member states have cross listed their shares. For instance, Kenya Commercial Bank is listed on NSE and similarly cross listed on EASE. It can generally be conceived that existence of regional economic blocks result into growth in size of Security Exchange that determine the overall financial performance of listed companies (Davis, 2016).

2.4 Empirical Literature Review

Various scholars and researcher have examined the influence that demutualization of a securities exchange has on performance. Globally, Angulo, Slimane and Alidou (2014) used a case of London stock exchange top determining the influence of demutualization on performance. The study adopted correlational research design that entailed testing of hypothesis. Data was collected mainly from secondary sources. The analyzed findings indicated that when accompanied by restructuring of governing bodies, demutualization increase efficiency and effectiveness within an organization.

In Kuwait, Aldeehani and Bouresli (2017) how the prediction and perceptions of shareholders affected the demutualization process. The study used survey questionnaires to collect data for analysis. The variables used in the study included market harmony, attractiveness, governance and stability. Through factor analysis, significant factors were established and retained. The findings of the study indicated that market harmony was significantly influenced by attractiveness, governance and stability.

With reference to key demutualized stock exchanges in Pakistan, Zulfigar (2014) examined how demutualization affected growth of security exchanges. A total of 13 stock exchanges were involved in the study. An event window methodology was employed was data was collected five years before and after demutualization. The collected data analyzed and the findings indicated that demutualized firms performed better after the process. In Hongkong Islam and Hossain (2016) determined a link between demutualization and performance. The variables of the study included pre and post-demutualization. The study relied on secondary data collected over a period of 1999 to 2013. The study established that demutualized firms had better post listing share and operating performance than mutual exchanges.

Slimane and Angulo (2018) did a study on how restructuring of boards and demutualization influenced performance. Field experiments were conducted using stock exchanges. The study relied on secondary data and the analysis was done using ANOVA technique. The study established that converting mutually owned organization to a company increase efficiency and effectiveness when the governing bodies are restructured. The finding of the study further established that demutualization improved reputation of exchanges of the firms.

While basing on evidence from Zimbabwe, Nyangara and Musikavanhu (2014) empirically looked at how demutualization influenced performance of a stock exchange. The variables of the study were listing, market capitalization and value of trades. Secondary data was collected from 50 exchanges. The collection of secondary data covered a period from 1990 all through to 2011. Regressions were used to analyze the findings. From the findings, the demutualized firms had improved financial performance than the mutually owned firms.

Locally Murungi (2017) assessed how demutualization impacted in confidence of shareholders and performance of NSE. Specifically, the study examined how demutualization influenced NSE's financial performance its non-financial performance and confidence of shareholders. A descriptive design was employed to achieve this objective. Data was collected from both secondary and primary source using questionnaires. The analysis revealed that demutualization had a direct and significant influence on NSE performance. This implied that improvement in demutualization increased financial performance.

With specific reference to both investment and financial firms listed on NSE, Ibrahim (2012) looked at how demutualization influenced their financial performance. The variables used in the study were market value book ratio, Return on assets, return on equity and leverage. A descriptive deign was adopted. Secondary data was collected from NSE report and publications. Regression analysis was used to analyze the findings. The findings of the study indicated that demutualization positively influenced financial performance.

2.5 Summary of Literature and Research Gaps

Table 2.1 exposes gaps in literature that the current study seeks to fill. The table summarizes the authors, tittle of projects the methodologies adopted and the key findings. A column for research gaps is also presented.

Table 2.1: Summary of Literature and Research Gaps

Author	Topic	Methodology	Findings	Research Gaps
Aldeehani and Bouresli (2017)	how the prediction and perceptions of shareholders affected the demutualizatio n process	survey questionnaire s	market harmony was significantly influenced by attractiveness, governance and stability	The study conducted in Kuwait creating a need for a similar study in Kenya
Zulfigar (2014)	how demutualizatio n affected growth of security exchanges	An event window methodology	demutualized firms performed better after the process	The study was done in Pakistan creating need for similar study in Kenya
Nyangara and Musikavanhu (2014)	how demutualizatio n influenced performance of a stock exchange	Secondary data	the demutualized firms had improved financial performance than the mutually owned firms	The study was done Zimbabwe. Need for a similar study in Kenya
Murungi (2017)	Assessed how demutualizatio n impacted in confidence of shareholders and performance of NSE	descriptive design	demutualizatio n had a direct and significant influence on NSE performance	The study related demutualization and investor confidence. This create a need for study on demutualization and NSE performance

2.6 Conceptual Framework

A conceptual framework is a diagrammatic illustration of the relationship between the study variables. In Figure 2.1, the independent and the dependent variables are clearly identified. Arrows are used to show the direction of the relationship.

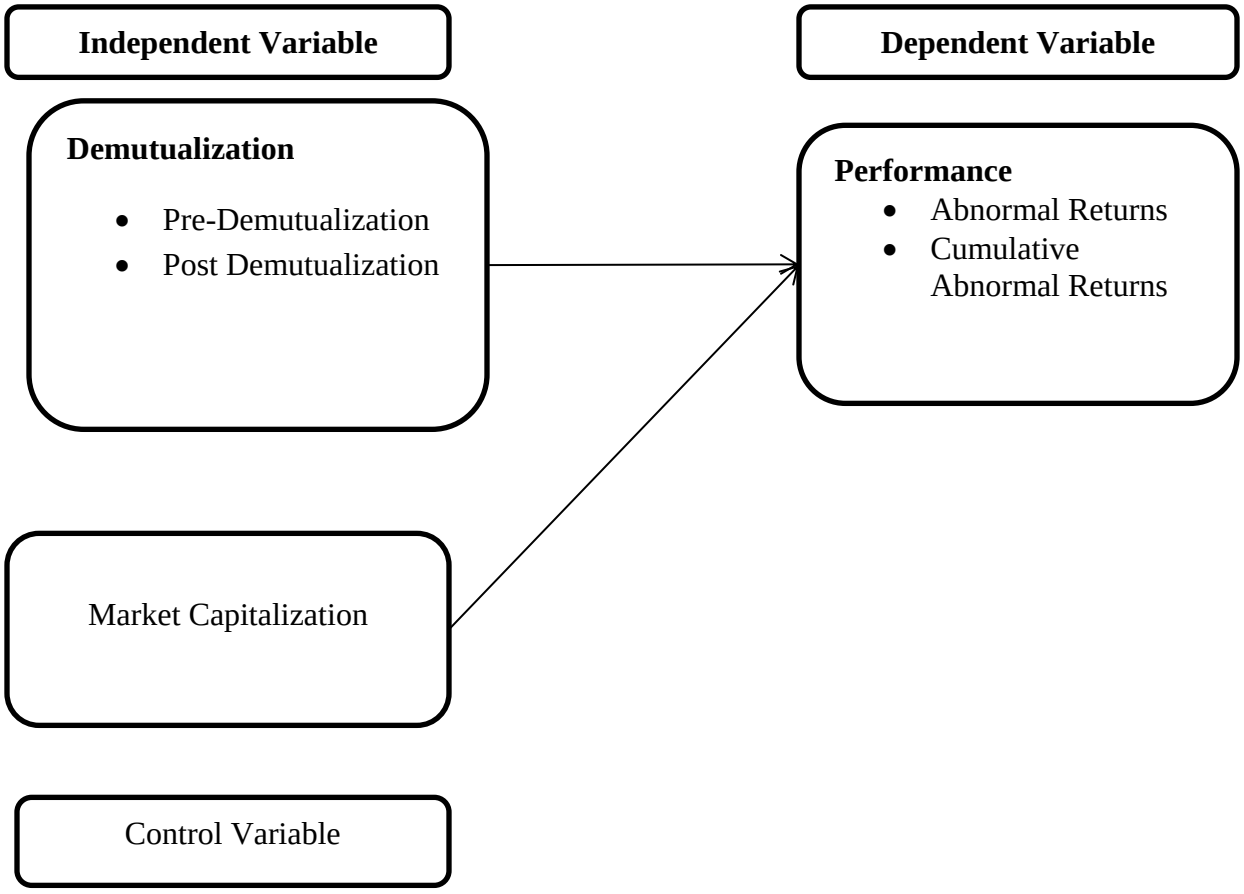


Figure 2.1: Conceptual Framework

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter details how the researcher achieved the study objectives. The chapter explores the research design and population of the study. The methods of collection and analysis of data are also well provided.

3.2 Research Design

The study adopted a descriptive research design. The design helped in determining how demutualization has impacted on performance of NSE. A descriptive design according to Yin (2017) accounts for things the way they are. Thus, the problem in the study was best achieved through a descriptive design. A descriptive design helped the researcher to apply an event study methodology so as to attain objectives.

3.3 Population

The population of the study comprised of Nairobi Securities Exchange (NSE) as a demutualized company. This was therefore a case study with specific reference to NSE. Sampling was done because of the small size of the population.

3.4 Data Collection

The study collected secondary data on market capitalization, NSE 20 share index and the daily share prices from financial publication of NSE. An event study methodology was employed in collection of data. NSE was self-listed in the year 2014. The study therefore collected data three years before listing (2011) and 3 years after listing (2017). The window

period was therefore 6 years. Data was collected on share prices of NSE before and after demutualization.

3.5 Data Analysis

The event window consisted of pre-demutualization, demutualization and post-demutualization period defined as t_n, t_0 and t_{n-1} respectively. In this case, n is identified as 3 years. The collected data was used to compute expected returns using the single-index market model equation as indicated by equation (1) below:

$$R_{it}=a_i+b_jR_{mt}+b_kR_c+u_{it} \quad \text{..... (1)}$$

Where:

R_{it} is Expected returns of stocks i at time t

R_{mt} is value-weighted market returns (NSE-20 index)

U_{it} is Return residual for stock i at time t with zero mean

R_c= market capitalization

a and b are Regression coefficients and constants determined by simple regression using data over the window period.

The returns for each stock (or index) were calculated according to equation (2) below:

$$R_{it}= \text{Ln} (P_{it}/P_{it-1}) \quad \text{.....(2)}$$

Where:

R_{it} return of stock i at time t

Ln is the natural Logarithm

P_{it} is the Price of stock i at time t

The market model was then used to estimate the returns which were used to device the cumulative abnormal returns (CAR) over the event window so as to test demutualization impact on performance. The abnormal return (AR) was estimated using equation (3) below:

$AR_{it} = R_{it} -(a_i+b_iR_{mt})$ ……....(3)

The cumulative abnormal returns (CAR) were then computed for all years within the window period. The use of CAR is common in event study methodology (Brown & Warner, 1980; Warren & Dalkir, 2001).

CAR was obtained using equation (4) below:

$CAR\,(T\text{-}3, T+3) = \sum_{T-3}^{T-3} AR_{it}$ …….. (4)

3.5.1 Hypothesis Testing

The study adopted the following null hypotheses;

H_{O1}: Pre-demutualization had no significant impact on financial performance of NSE

H_{O2}: Post-demutualization had no significant impact on financial performance of NSE

H_{O3}: Market capitalization has no significant impact on financial performance of NSE

To effectively determine a link between demutualization and financial performance of NSE, the study used a t-test at 5% level of significance. This helped the researcher to establish the statistical significance of the demutualization, market capitalization and financial performance. The p values were interpreted at 5% level of significance.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the findings of the analysis on the collected secondary data. The researcher collected data on share prices, NSE 20 share index and market capitalization. The collected data was first cleaned and then entered into excel and SPSS software and then analyzed.

An event window study methodology was employed in analysis of the data. The window period was taken as 6 years. The self-listing date of NSE was 9th of September, 2014 and this was taken as day zero of the window period. The daily data collected on share prices, NSE-20 share Index and the market capitalization was averaged on a monthly basis.

Pre-demutualization period was taken as from June-2011 all through to 10th of September 2014. On the other hand, the post demutualization window period started from 8th of September 2014 all through to December 2017. Thus, 9th of September 2014 was taken as time zero of the window period.

4.2 Descriptive Statistics

The researcher used means and standard deviations to describe the variables of interest in the study as presented in Table 4.1.

Table 4.1: Descriptive Statistics

	N	Mean	Std. Deviation
Expected Returns on Share	80	.0400	.13166
Return on NSE-20 Share Index	80	.0275	.08735
Market Capitalization Post	80	6.3178	.04060

Source; Research Data (2018)

Table 4.1 shows that on average, the expected returns across the window period were 0.0400, returns on NSE-20 Share were 0.0275 abd market capitalization was at 6.3178. The values of standard deviations are relatively low (all less than 1) showing that there were no significant deviations in the reported average values of expected returns on share, returns on NSE-20 share index and the market capitalization across the window period.

4.3 Trend Analysis

In order to understand to appreciate and understand the pattern of movement in variables of the study, the study generated graphs. This helped in determining the trend in movement of the variables within the period of consideration.

4.3.1 Abnormal Returns

Abnormal returns (AR) were determined under the following equation;

$$\mathbf{AR_{it} = R_{it} -(a_i+b_iR_{mt})} \text{ ……..(3)}$$

Where; AR_{it} are the AR; R_{it}=Expected Returns on Share while b_iR_{mt}=Return on NSE-20 Share Index

Thus AR=Expected Returns on Share-Returns on NSE-20 Share. The trend in the movement of AR is shown in Figure 4.1.

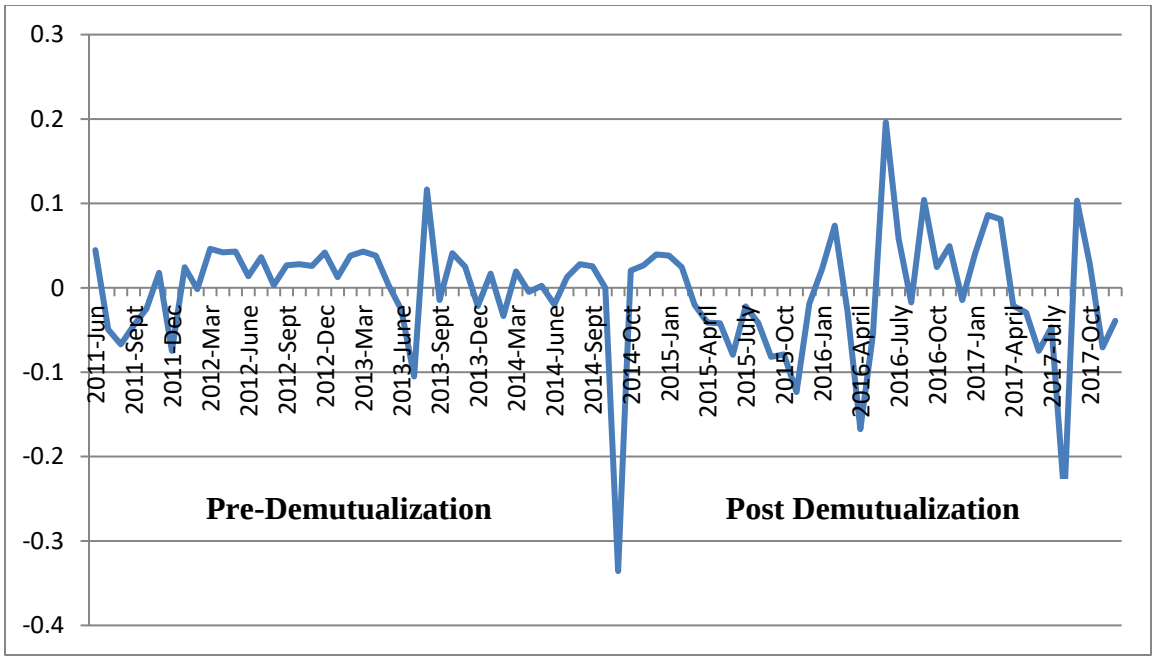


Figure 4. 1: Abnormal Returns

Source; Research Data (2018)

Figure 4.1 shows the trend in AR across the window period. From the findings, Pre-demutualization had more positive AR as compared to the post demutualization period. At the same time, the movement in ARs in post demutualization period is more erratic as compared to the pre-demutualization period.

This trend could be attributed to the fact that in post demutualization, NSE had just been self-listed and thus shareholders could react differently on share prices based on information available in the market.

4.3.2 Cumulative Abnormal Returns

To determine the cumulative abnormal returns across the window period, the researcher summed up the ARs obtained in Figure 4.1. The findings of the movement in CARs are indicated in Figure 4.2.

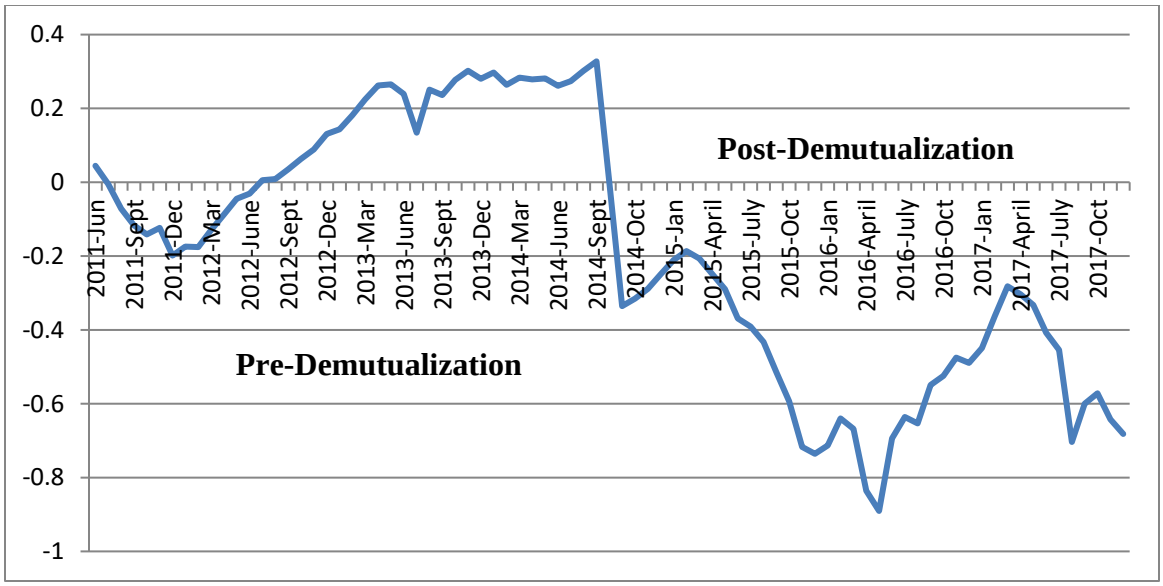


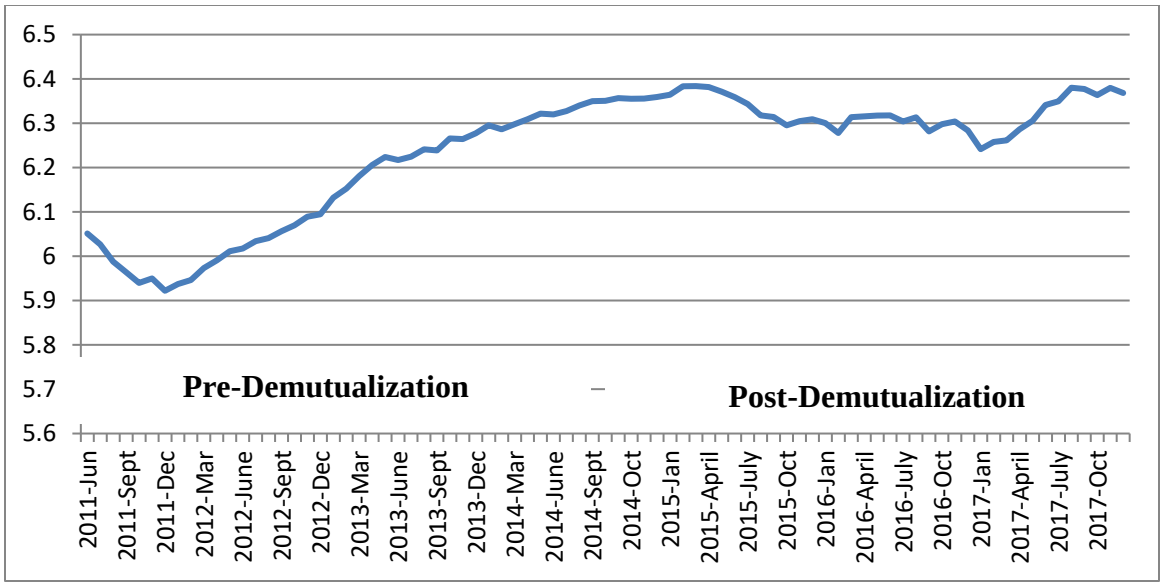
Figure 4.2: Cumulative Abnormal Returns

Source; Research Data (2018)

The findings in Figure 4.2 show that post demutualization period was characterized by negative CARs as compared to the post demutualization period. This could be attributed by the fact that investors (both individuals and institutional) started reacting on share prices in the post demutualization period after NSE had been self-listed. The movement in CAR in the post demutualization period is slightly erratic due to this reaction of investors in share price movement.

4.3.3 Market Capitalization

Market capitalization was used as a control variable in the study. It was determined by averaging all the daily values of Market capitalization on a monthly basis after which the averaged values were expressed in their natural logarithm form. The obtained values of natural logarithm were then graphed as shown in Figure 4.3.



Source; Research Data (2018)

Figure 4.3: Market Capitalization

From Figure 4.3, the market capitalization was generally stable across the window period. This could be attributed to a consisted rise in the number of listed firms at the NSE, increased participation of the government (corporate bonds and treasury bills including the M-Akiba bond) and the current investment in technology that facilitates the speed and timeliness in transactions at NSE.

4.4 Regression Results

To generate market beta coefficients and the p values so as to have a deeper understanding of how pre and post demutualization periods affected financial performance of NSE, the researcher used regression analysis. The following equation guided the modeling;

$$R_{it}=a_i+b_jR_{mt}+b_kR_c+u_{it} \quad \text{..... (1)}$$

Where:

R_{it} is Expected returns of stocks i at time t

R_{mt} is value-weighted market returns (NSE-20 index)

U_{it} is Return residual for stock i at time t with zero mean

R_c= market capitalization

4.4.1 Pre-Demutualization Period

This section presents the regression results of the study in the pre-demutualization window period of the study. Table 4.1 presents the findings of the Model Summary.

Table 4.2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.577[a]	.333	.297	.11036

a. Predictors: (Constant), Market Capitalization, Returns on NSE

Source; Research Data (2018)

Table 4.2 indicate that in pre-demutualization period, 33.3% change on expected returns on shares (financial performance of NSE) was attributed to by returns on NSE and market capitalization as a control variable.

Table 4.3 shows an Analysis of Variance that was conducted at 5% level of significance. Its essence was to determine the overall significance of the model used in the study.

Table 4.3: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.225	2	.113	9.253	.001[b]
Residual	.451	37	.012		
Total	**.676**	**39**			

a. Dependent Variable: Expected Returns

b. Predictors: (Constant), Market Capitalization, Returns on NSE

Source; Research Data (2018)

As shown in Table 4.3, the value of F calculated is 9.253 while F critical (obtained from F-distribution Table at degrees of freedom 2 and 37) is 3.252. Therefore, the value of F calculated is greater than F critical. This is particularly important for the study because it shows that the overall regression model used in pre-demutualization was significant.

Table 4.4 is the backbone of the analysis since it shows the values of beta coefficients and the p values that would be used in determining whether the variables are significant. The interpretation of p values was done at 5%.

Table 4.4: Beta Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**		
	B	Std. Error	Beta	**t**	**Sig.**
(Constant)	-3.119	1.432		-2.177	.036
Returns on NSE	2.993	.779	.960	3.840	.000
Market Capitalization	.511	.232	.549	2.197	.034

a. Dependent Variable: Expected Returns

Source; Research Data (2018)

The resultant equation from Table 4.4 becomes;

$$\mathbf{R_{it}=-3.119+2.993R_{mt}+0.511R_c}$$

Where; R_{it} is Expected returns of stocks i at time t

R_{mt} is value-weighted market returns (NSE-20 index)

U_{it} is Return residual for stock i at time t with zero mean

R_c= market capitalization

Thus, the possible value of expected share returns when with or without considering demutualization would be -3.119. When efforts for demutualization were being done (pre-

demutualization period), any returns earned on NSE-20 share index had significant effect of financial performance ($p=0.000<0.05$). Any change in market capitalization in the pre-demutualization period also had significant effect on financial performance of NSE.

The beta coefficients were positive showing that pre-demutualization had direct and significant effect on financial performance of NSE. Betas, especially the one on return on NSE-20 share index is important in this study because it indicates the sensitivity of the shareholders on share prices. It also gauges whether the share prices were over-valued or undervalued. In practice, the beta of the market is always 1. Hence, betas above one show that the stock is over-valued while beta below 1 could be an indicator that the stock is relatively undervalued. In this case, it can be inferred that the stock of NSE in pre demutualization period was over-valued as the beta of return on NSE-20 Share Index (2.993) which is above the market beta of 1.

4.4.2 Post Demutualization

The researcher carried out regression analysis to determine how post demutualization period influenced financial performance of the NSE. Table 4.5 gives the model summary.

Table 4.5: Model Summary for Post Demutualization

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.896[a]	.804	.793	.03973

a. Predictors: (Constant), Market Capitalization, Returns on NSE

Source; Research Data (2018)

As shown in Table 4.5 above, 80.4% change in financial performance of NSE in the post demutualization was explained by market capitalization and returns on NSE-20 share index.

The findings of the Analysis of Variance at 5% level of significance are shown in Table 4.6.

Table 4.6: Analysis of Variance during Post Demutualization

	Sum of Squares	df	Mean Square	F	Sig.
Regression	.239	2	.120	75.734	.000[b]
Residual	.058	37	.002		
Total	**.298**	**39**			

a. Dependent Variable: Expected Returns

b. Predictors: (Constant), Market Capitalization Post, Returns on NSE

Source; Research Data (2018)

From the findings in Table 4.6, the value of F calculated is 75.734 while F critical is 3.252. Thus, the overall regression model used in the study during post demutualization was significant.

Table 4.6 shows the beta coefficients with p values that indicate the significance of the variables.

Table 4.7: Regression Coefficients during Post Demutualization

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	5.947	1.732		3.434	.001
Returns on NSE	-1.302	.329	-.503	-3.954	.000
Market Capitalization	-.940	.274	-.437	-3.436	.001

a. Dependent Variable: Expected Returns

Source; Research Data (2018)

The following equation is established from the findings in Table 4.7.

$$\mathbf{R_{it}=5.947-1.302R_{mt}-.940R_c}$$

Where; R_{it} is Expected returns of stocks i at time t

R_{mt} is value-weighted market returns (NSE-20 index)

U_{it} is Return residual for stock i at time t with zero mean

R_c= Market capitalization

Thus, returns on shares with beta -1.302 and p=0.000<0.05 had a negative and significant effect on financial performance of NSE in the post demutualization period. Market capitalization with a beta of -0.940 and p=0.001<0.05 had a negative and significant controlling effect on financial performance of NSE. Thus, it can be concluded that post demutualization period had a negative and significant effect on financial performance of NSE.

4.5 Hypothesis Testing

Table 4.8 summarizes the results of the hypothesis formulated for the study.

Table 4.8: Hypothesis Testing

Hypotheses	p-value	Remark
H_{O1}: Pre-demutualization had no significant impact on financial performance of NSE	0.036; 0.000 and 0.034	Reject
H_{O2}: Post-demutualization had no significant impact on financial performance of NSE	0.001; 0.000 and 0.001	Reject
H_{O3}: Market capitalization has no significant impact on financial performance of NSE	0.034 and 0.001	Reject

Source; Research Data (2018)

Thus, the study findings from Table 4.8 show that pre-demutualization had significant impact on financial performance of NSE. Post-demutualization had significant impact on financial performance of NSE. Market capitalization had significant impact on financial performance of NSE.

4.6 Discussion of the Findings

Pre-demutualization period had a positive and significant effect on financial performance of NSE. This is because at that time, an organization is still mutually owned by members

and decision making is collectively made. The stock of NSE in pre-demutualization period was over-valued as the beta of return on NSE-20 Share Index (2.993) which is above the market beta of 1. Slimane and Angulo (2018) established that demutualization improved reputation of exchanges of the firms. Nyangara and Musikavanhu (2014) revealed that the demutualized firms had improved financial performance than the mutually owned firms.

Post demutualization period had a negative and significant effect on financial performance of NSE. This finding is supported by the logic that after demutualization, an organization becomes a separate legal entity. This brings in the issue of the principal and the agent as explained by the agency theory which increases the conflict of interest and thus adversely affecting financial performance. According to Jensen and Mecklin (1976), conflict of interest is likely to arise where the management may undertake actions that are not in line with shareholders and therefore demutualization is likely to increase this conflict of interest in a firm as suggested by the agency theory hence adversely influencing financial performance.

Pre-demutualization had significant impact on financial performance of NSE. Post-demutualization had significant impact on financial performance of NSE. Girotti and Meade (2017) noted that the subsequent effect of demutualization is improving governance and financial viability of the firm that directly influences performance. Ibrahim (2012) indicated that demutualization positively influenced financial performance. Similarly, Slimane and Angulo (2018) established that demutualization improved reputation of exchanges of the firms. Market capitalization had significant impact on financial performance of NSE. According to Boussetta (2017), a rise in market capitalization is an

expression of shareholders confidence and therefore would increase uptake of shares that would increase performance.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the findings of the analyzed data. The study relied on secondary data that was collected using data collection sheet. Data was collected on daily share prices, NSE 20 share index and the market capitalization. The collected data was then entered in excel and coded into SPSS for analysis.

5.2 Summary of the Findings

The objective of the study was to determine the impact of demutualization on financial performance of the Nairobi Securities Exchange. To achieve this objective, an event window methodology was adopted. The study was guided by the Transaction Cost theory, the Agency Theory and the Theory of the firm. The study involved testing of hypotheses.

The findings on trend analysis indicated that pre-demutualization had more positive AR as compared to the post demutualization period. At the same time, the movement in ARs in post demutualization period is more erratic as compared to the pre-demutualization period. Post demutualization period was characterized by negative CARs as compared to the pre demutualization period. The market capitalization was generally stable across the window period.

In the pre-demutualization period, the value of R was 0.33, which shows that 33.3% change on expected returns on shares (financial performance of NSE) was attributed to by returns on NSE and market capitalization as a control variable. The value of F calculated is 9.253

while F critical (obtained from F-distribution Table at degrees of freedom 2 and 37) is 3.252. Returns on NSE-Share ($p=0.000<0.05$) and market capitalization ($p=0.034<0.05$) all had significant effect on financial performance of NSE.

With regard to post demutualization period, the coefficient of determination R square was 0.804, which shows that 80.4% change in financial performance of NSE in the post demutualization was explained by market capitalization and returns on NSE-20 share index. The value of F calculated is 75.734 while F critical is 3.252. Market capitalization with a beta of -0.940 and $p=0.001<0.05$ had a negative and significant controlling effect on financial performance of NSE.

In respect to the formulated hypotheses, all of the hypotheses are rejected. The study therefore holds that that pre-demutualization had significant impact on financial performance of NSE. Post-demutualization had significant impact on financial performance of NSE. Market capitalization had significant impact on financial performance of NSE.

5.3 Conclusion

The study concludes that pre-demutualization had more positive AR as compared to the post demutualization period. The movement in ARs in post demutualization period was more erratic as compared to the pre-demutualization period. Post demutualization period was characterized by negative CARs as compared to the pre demutualization period. The market capitalization was generally stable across the window period. Pre-demutualization had significant impact on financial performance of NSE. Post-demutualization had

significant impact on financial performance of NSE. Market capitalization had significant impact on financial performance of NSE.

5.4 Recommendation of the Study

The study recommends that the management team of NSE should seek to increase the value of market capitalization in order to improve on financial performance. One way of increasing the value of market capitalization is through ensuring increasing the number of listed firms.

The study also recommends that the senior management team of NSE should establish sound policies and regulations that would increase the share prices and therefore financial performance of the company.

Regulatory bodies like the Capital Market Authority CMA should consider simplifying the rules and regulations governing demutualization. This would increase the number of firms that seeking for demutualization and thus financial performance.

5.5 Suggestions for Further Studies

The focus of the current study was on demutualization and how it affected financial performance of the NSE. Future studies should focus on other aspects including Initial Public offering and how it influenced financial performance. The study focused on NSE as the company of interest, future studies should focus on security exchange markets across East Africa. This would facilitate comparison of the findings and thus informed decision making.

The current study focused on financial aspects of the NSE in relation to demutualization. Specifically, the study looked at how demutualization affected financial performance.

However, performance can be measured in financial and non-financial terms. Thus, future studies should use both measures of performance. Financial measures of performance include among other things the use of return on assets, return on equity and return on investment. Non-financial performance on the other hand includes aspects like efficiency, effectiveness and customer satisfaction.

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APPENDIX I: DATA COLLECTION SHEET

Period (Year)	Market capitalization	NSE-20 Share Index
2009		
2010		
2011		
2012		
2013		
2014		
2015		
2016		
2017		

APENDIX II: DATA COLLECTED FOR THE STUDY

Year/Month	NSE-20 Share	Market Capitalization	Log. Of Mkt Cap
2011-May	3843.379545	1130882.528	6.053
2011-Jun	4015.222381	1125233.153	6.051
2011-July	3816.606667	1063798.461	6.027
2011-Aug	3561.079545	972264.2092	5.988
2011-Sept	3401.222273	920180.8097	5.964
2011-Oct	3316.4965	870580.9048	5.940
2011-Nov	3375.515	891158.9233	5.950
2011-Dec	3122.7845	835672.6165	5.922
2012-Jan	3199.130952	865222.9063	5.937
2012-Feb	3193.903333	883508.881	5.946
2012-Mar	3341.356364	940740.2699	5.973
2012-April	3481.852105	979174.5744	5.991
2012-May	3631.545	1026158.375	6.011
2012-June	3681.777	1040506.696	6.017
2012-July	3815.298636	1081544.324	6.034
2012-Aug	3827.032727	1099073.712	6.041
2012-Sept	3928.671	1138822.45	6.056
2012-Oct	4038.537391	1174009.391	6.070
2012-Nov	4142.941818	1228026.295	6.089
2012-Dec	4316.476471	1243438.452	6.095
2013-Jan	4371.046818	1355232.232	6.132
2013-Feb	4537.417	1420020.3	6.152
2013-Mar	4731.907895	1516251.762	6.181
2013-April	4911.5015	1606365.284	6.206
2013-May	4925.892727	1674206.902	6.224
2013-June	4797.7165	1648660.356	6.217
2013-July	4293.754783	1677681.082	6.225
2013-Aug	4794.088095	1743098.358	6.241
2013-Sept	4724.379048	1732477.56	6.239
2013-Oct	4918.470476	1843418.212	6.266
2013-Nov	5040.797619	1838218.875	6.264
2013-Dec	4931.709444	1893592.256	6.277
2014-Jan	5014.354091	1973444.114	6.295
2014-Feb	4847.027	1934062.613	6.286
2014-Mar	4941.395714	1986227.571	6.298
2014-April	4917.5475	2036743.688	6.309
2014-May	4929.608571	2097038.636	6.322
2014-June	4831.832	2089151.47	6.320
2014-July	4893.265909	2125913.717	6.328

2014-Aug	5030.512381	2187984.714	6.340
2014-Sept	5158.946667	2238314.542	6.350
9/9/2014	5,272.53	0	0
2014-Sept	4942.084118	2273256.1	6.357
2014-Oct	5131.745909	2266539.807	6.355
2014-Nov	5081.1565	2268834.738	6.356
2014-Dec	5170.332	2286172.685	6.359
2015-Jan	5388.43381	2314273.25	6.364
2015-Feb	5323.829	2417111.2	6.383
2015-Mar	5105.901364	2420195.193	6.384
2015-April	4929.037	2408496.864	6.382
2015-May	4788.9615	2350065.393	6.371
2015-June	4655.779048	2285344.295	6.359
2015-July	4358.073478	2204751.375	6.343
2015-Aug	4208.379524	2078792.077	6.318
2015-Sept	3965.947727	2060494.778	6.314
2015-Oct	3942.390476	1973366.58	6.295
2015-Nov	3988.654	2016878.804	6.305
2015-Dec	3847.072025	2036588.891	6.309
2016-Jan	3831.094782	1996367.417	6.300
2016-Feb	3959.31875	1897225.528	6.278
2016-Mar	3978.399415	2059548.125	6.314
2016-April	3901.571154	2068418.042	6.316
2016-May	3751.9581	2076751.943	6.317
2016-Jun	3560.612306	2078514.943	6.318
2016-July	3411.323067	2013795.905	6.304
2016-Aug	3199.490604	2057735.989	6.313
2016-Sept	3238.557247	1913139.045	6.282
2016-Oct	3261.981008	1985097.536	6.298
2016-Nov	3158.734406	2013100.585	6.304
2016-Dec	2930.860646	1922201.205	6.284
2017-Jan	2946.443533	1743808.609	6.241
2017-Feb	3013.476662	1811001.463	6.258
2017-Mar	3124.837262	1826205.929	6.262
2017-April	3293.31009	1933221.15	6.286
2017-May	3543.441892	2019888.755	6.305
2017-Jun	3679.69196	2194295.227	6.341
2017-July	3976.529412	2235646.488	6.349
2017-Aug	3787.454779	2400687.576	6.380
2017-Sept	3664.916677	2383454.262	6.377
2017-Oct	3783.129148	2310699.545	6.364

2017-Nov	3724.62614	2398053.08	6.380
2017-Dec	3720.066433	2334561.25	6.368