THE EFFECT OF CROSS-LISTING ON THE VALUE OF FIRMS

CROSS-LISTED WITHIN THE EAST AFRICA

SECURITIES EXCHANGES

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DECLARATION

I hereby declare that this Research Project is my original work and that it has not been presented in any University or Institution for an award of a degree and that all the references cited in this study have been fully acknowledged.

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DEDICATION

I dedicate this Research Project to my Grandfathers and grandmothers the Late Karukwo, Kiprasi, Chechema, Kulmuses, Machungwa, Ko Yano (Jemsuko), Ko Pchumba Chechema, Ko Chebet Chechema, Ko Prono Machungwa, Ko Jepkosgei Kiprasi (Jebolet) My Parents, Brothers and Sisters and all my Children

ACKNOWLEDGEMENT

ABSTRACT

Before 1997 when Kenya, Uganda and Tanzania signed a memorandum of understanding to establish the East Africa Regulatory Authority whose objective was to establish a framework for a mutual cooperation in the area of capital market development, harmonization of securities laws and promotion of information–sharing and cooperation among members, companies had not cross-listed their shares, but it was until 2001 when East Africa Breweries Ltd become the first company to cross-list its shares.

The objective of this study was to determine the effect of cross-listing on the values of firms cross-listed within the East Africa Securities Exchanges; and the findings of the study shall be of importance to Investors, Policy makers, Academicians and Researchers.

To achieve the objective of the study, Event study methodology was adopted and the approach outlined in MacKinlay (1997) was followed. Seven firms which had cross-listed their shares were sampled for this study; and an estimation and event period of 120 days and 41 days respectively were chosen. Market model equation was used to calculate the market model parameter using the estimation period data. The findings of the study showed that cross-border listing increases the value of a firm therefore it is recommended that the policy makers especially countries within the East Africa Region should focus on formulating policies that enables the integration of their securities markets.

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LIST OF ABBREVIATIONS AND ACRONYMS

ATS: Automated Trading System

ADRs: American Depositary Receipts

ARs: Abnormal Returns

CARs: Cumulative Abnormal Returns

CEOs: Chief Executive Officers

CMA: Capital Markets Authority

DF: Degrees of Freedom

DSE: Dar es Salaam Stock Exchange

EABL: East Africa Breweries Ltd

EAC: East Africa Community

EADB: East African Development Bank

EASE: East Africa Securities Exchange

IPO: Initial Public Offer

KCB: Kenya Commercial Bank

KQ: Kenya Airways

NMG: Nation Media Group

NSE: Nairobi Securities Exchange

OLS: Ordinary Least Square

OTC: Offer the Counter

PTA: Preferential Trade Area

ROTCE: Rwanda over the Counter Exchange

RSE: Rwanda Stock Exchange

SPSS: Statistical Package for Social Science

SSA: Sub-Sahara Africa

USA: United States of America

USD: United States Dollars

USE: Uganda Securities Exchange

WAEMU: West African Economic and Monetary Union

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In the Kenyan economy individuals have the freedom to establish any legal business they choose (Companies Act, 2009), however for them to run these businesses they must have adequate financial capital of their own or be able to arrange the necessary financing, (Melicher and Norton 2003). Self-financing is therefore the sources of Capital for most that is least subject to problems caused by information asymmetries. Though entrepreneurs contribute their own money with limited resources, the ability to grow the enterprise rapidly will be constrained if external sources of capital are not used (Ritter 1991).

As firms grow big, private financing through self-financing or use of debt may be inadequate to meet the cost of expansion and to serve the needs of their customers efficiently; this is the point in which the firm has to go public in order to raise the funds needed although there are costs such as floatation costs associated with when raising external equity (Mulu, 2006). Rising of these funds can be done by private firms by offering securities for sale to the public and if the offer by the firm is being offered for the first time then it is called Initial Public Offering (IPO) and through the IPO, a firm is said to have gone Public (Ritter 1991). Depending on the size and the activities of the firm, raising capital within the local market alone may not be enough; companies may decide to raise it within or beyond their national boundaries. The former is referred to as listing, while the latter is known as cross-listing (Onyuma, Mugo and Karuiya 2012).

1.1.1 Cross Border Listing

According to Onyuma et al. (2012), cross-listing refers to the listing of ordinary shares of a firm on a different exchange other than its home stock exchange. It is therefore where a firm lists its shares for trading on at least two stock exchanges located in different countries. Ordinary listing and Depositary Receipts are the two types of cross-border listing. Though the Ordinary listing abroad is being prestigious, it is the one for which requirements are the most stringent and companies seeking a listing their equity overseas must satisfy to qualify for listing. When approached by any firm for listing, the exchange conducts an investigation of the firm to determine whether the firm meets certain conditions such as minimum levels market capitalization and certain accounting variables. The exchange may also request the firm to recast its financial statements and other disclosures in the format prescribed by the exchange. The second type is the Depositary Receipts, these are negotiable and-issued financial securities representing publicly traded security - equity (usually) or debt, of a company listed in one market which is traded on another market. Such a receipt therefore allows investors to hold shares in equity of other countries without need to go directly into the foreign markets (Adelegan, 2009).

1.1.2 The Value of a Firm

Valuation is a process used to determine what a business is worth. Determining a company's worth and knowing what drives its value is a prerequisite for deciding on the appropriate price to pay or receive in an acquisition, merger transaction, corporate restructuring, sale of securities, and other taxable events (Damodaran, 2002). Firm value therefore is the intrinsic value of a firm obtained by discounting all future cash flows

using the weighted average cost of capital of the firm (Pandey, 2010). However, according to Fama (1970), the actual price of a security at any point in time is a good estimate of its intrinsic value in an efficient market.

1.1.3 The Cross-border Listing and the Value of a Firm

According to Fama (1970), a market in which prices always fully reflect all available information is called efficient. It therefore holds to say that markets react to any available information such cross-listing either favorable or unfavorable depending on whether it will or will not lead to an Improvement in the firm's efficiency in both the home and host country. If the information is considered good, it will have a positive impact on the firm's value and shareholders' wealth, and vice versa (Adelegan, 2009). In either way the effect of the information will be reflected in the share prices at any point in time by all shares traded in the market. As correctly put by Fama (1970) that the actual prices of a security at any point in time is a good estimate of its intrinsic value in an efficient market, this study seeks to find out whether cross-border listing will have any effect on the values of firms cross-listed within the East Africa Securities exchange markets by applying the event study methodology.

1.1.4 East Africa Securities Exchanges

Well-functioning capital markets can accelerate economic growth and, therefore, alleviate poverty. However, structural constraints have made most of the capital markets to remain underdeveloped in most of the low income countries, which are faced with the difficulties of raising enough funds for developing and running the capital market (Yabara, 2012). Regional integration has the potential to help such countries overcome

these constraints because integrated capital markets will allow savings to be pooled across the region, risk diversification will be enhanced, there will be sharing of information among member states, enhanced competition and innovation across financial institutions, cost reduction, and wider choice of financial products provided to regional and foreign investors (Irving, 2005; Yabara, 2012). Countries of the East African Community (EAC) have been pursuing development of capital markets through regional integration. Integration, therefore, can be either full or partial (Adelegan, 2008). Though the East Africa Community countries are seeking to fully integrate their capital markets, evidence shows that their capital markets are still partially integrated (Onyuma et al, 2012). The East Africa community securities markets are currently composed of four stock exchanges: the Nairobi Securities Exchange (NSE), Uganda Securities Exchange (USE), Dar es Salaam Stock Exchange (DSE) and Rwanda Stock Exchange (RSE).

1.1.4.1 Nairobi Securities Exchange

NSE which is the oldest market in the region was formed in 1954 when Kenya was still a British Colony (Onyuma et al, 2012). Its market capitalization was USD 14.8 Billion with sixty one (61) listed companies as at December 2012, making it the largest bourse in the region and the fourth largest in Sub Sahara Africa. This market is regulated by the Capital Markets Authority (CMA) and its trading activities take place on Mondays through Fridays between 10.00 a.m. and 1.00 p.m. and the exchange has been fully automated (Nairobi Securities Exchange, 2013).

1.1.4.2 Dar es Salaam Stock Exchange

This exchange was incorporated in September 1996 as a private company limited by guarantee but it was until April 1998 when it became operational. As at December 2012, it had seventeen (17) listed companies with market capitalization of USD 8.4B, making it the second largest exchange in East Africa. The Exchange is open for five days in a week, from Monday through Friday starting from 10.00 a.m. to 12.00 noon. Trading is conducted at the exchange trading floor under an Automated Trading System (ATS) which matches bids and offers using an electronic matching engine as soon as they are posted by brokers (Dar es Salaam Stock Exchange, 2013).

1.1.4.3 Uganda Securities Exchange

This is the third largest bourse in the region which had fifteen (15) companies listed with market capitalization of USD 6 Billion as at the end of the year 2012 (Uganda Securities Exchange, 2013). Trading activities occurs from Monday through Friday between 10 a.m. to 12 noon. The market was incorporated in June 1997 but it was until January 1998 when it became operational following the listing of the East African Development Bank (EADB) bond, which was then followed by the listing of PTA Bond in March 1999. The automation of the USE is still hampered by the political constraints as Ugandan parliament is yet to enact a law to regulate the same (Onyuma et al, 2012).

1.1.4.4 Rwanda Stock Exchange

The Rwanda Stock Exchange (RSE) is the fourth largest bourse in EAC. It started its operations on 31st January 2011. Before the formation of the RSE there was the Rwanda over the Counter Exchange (ROTCE) which began business in bond trading in January

2008. The bourse currently has four (4) listed firms, two local and the rest cross-listed from NSE. Its market capitalization was USD 1.6 Billion as at December 2011. The market is yet to be computerized but plans are underway (Rwanda Stock Exchange, 2013).

1.2 Research Problem

Cross-border listing has been a topic of intensive empirical studies such as Doidge, Craig and Karolyi 2004, Karolyi 2006; and Adelegan, 2009. This follows a lot of interest that researchers and academicians alike have developed towards understanding the reasons why the number of companies which have opted to cross-list their shares in foreign markets have been on the rise since the last quarter of the 20th century when the process of deregulation of stock markets began in the USA (Wong, Penm and Lim, 2004).

Tripathy and Jha (2009) argued that the reason why so many firms list their shares for trading in more than one stock exchange is because of segmentation of capital markets, which according to Moffett, Stonehill and Eiteman (2003), a national capital market is a segment if the required rate of return on securities in that market differs from the required rate of return on securities of comparable expected return and risk that are traded on other national securities markets. Eun and Resnick (2009) held the views that by cross listing its shares, a company will enjoy benefits such as higher stock prices and lower cost of capital, creation of secondary market for the company's shares, enhancing of the liquidity of the company's stock, and cross listed shares may be used as the "acquisition currency" for taking over foreign companies. It therefore worth noting that to understand if investors can maximize their wealth by cross-listing their shares, then there is a need to

understand whether cross-listing can have effect on the value of the firm cross-listing its shares (Adelegan, 2009).

There are numerous studies which have been carried out in the past on cross-listing; for instance, a study on the reaction of Common stock returns to international listing announcements was done by Doukas and Switzer (2000). Podpiera (2001) studied the effects of market fragmentation and information flows. Pagano et al, (2002) examined the reasons why companies list abroad. Edison and Warnock (2003) examined Cross-Border Listings, Capital Controls, and Equity Flows to Emerging Markets. A study whether regional cross listing can accelerate stock market development was done by Adelegan (2008). The Impact of the Regional Cross-Listing of Stocks on Firm Value in Sub-Saharan Africa (Adelegan, 2008), Cetorelli and Peristiani (2010) investigates the valuation impact of a firm's decision to cross-list on a more (or less) prestigious stock exchange relative to its own domestic market and the Impact of International Cross-Listings on Firm Value after the Sarbanes–Oxley Act; Evidence from American Depositary Receipts was studied by Cao (2012).

From the aforementioned empirical studies it is apparent that the effect of cross-listing on the value of a firm has been done on the developed and emerging economies with little evidence of such studies on developing economies, especially within the East Africa regional economy. This study therefore, seeks to contribute towards filling this gap by answering the question "Does cross-listing of securities have effect on the value of a firm whose securities have been cross-listed within the East Africa Securities Exchange markets?"

1.3 Objective of the Study

To determine the effect of cross-listing on the value of the firms cross-listed within the East Africa Securities Exchanges

1.4 Value of the Study

Several stakeholders shall benefit a lot from the findings of this study, Investors for example, can use the findings of this study as a guide in making informed investment decision whether cross-listing will give them the desired benefits that will enable them maximize their wealth and reduce the risk that they would suffer if they list in a single market.

Policy makers shall also benefit from the findings of this study. They shall be in a better position to understand the reason why formulating policies which promotes integration of the capital markets by relaxation of stock markets controls shall be of enormous benefit to the their country.

Academicians and Researchers can also benefit from the findings of this study because they will use the findings as reference for future researches on cross-listing of securities.

The findings will also contribute to the existing body of knowledge in fields of finance and economics.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is a review of the theoretical and empirical literature on the valuation of a firm and cross-listing of shares beyond national boundaries.

2.2 Theoretical Review

This section reviews the theories that are related to the effects of cross-border listing on the value of a firm.

2.2.1 Efficient Market Hypothesis

Fama (1965) published is dissertation arguing for the random walk hypothesis. He argued that, in an efficient market, completion among the many intelligent participants leads to a situation where, at any point in time , actual prices of individual securities already reflects the effects of information based both on events that have already occurred and on events which as of now the market expects to take place in future. In other words, in an efficient market at any point in time the actual price of a security will be a good estimate of its inherent value.

Fama (1970) presented the efficient market theory in terms of a fair game model contending that investors can be confident that a current market price fully reflects all available information about a security and the reflected return based upon price is consistent with risk. The information efficiency of major stock markets has been extensively examined through study of causal relations between stock prices indices and

macro economies aggregates. The findings of these studies are important since information inefficiency in the stock market implies on the one hand, that market participants are able to develop profitable trading rules and thereby can consistently earn more than average market returns and on the other hand, that the stock market is not likely to play an effective role in channeling financial resources to the most productive sector of the economy (Chirchir, 2011).

2.2.2 The Dow Theory

According to Kaimba (2010), The Dow Theory was derived from 255 wall street Journal editorial written by Charles H. Dow (1851-1902). This theory presumes that the market moves in persistent Bull and Bear cycles. While Dow himself did not use the term "Dow Theory," or presented it as a trading system, William Peter Hamilton, presented the theory in his book 'the Stock Market Barometer' in 1922. The theory agrees with one of the premises of the Efficient Capital Market Hypothesis that the stock market discounts all news allowing stock prices to quickly incorporate new information as it becomes available. Once news is released, stock prices will change to reflect this new information and the cycles of performance continues creating visible trends within the stock market.

2.2.3 Behavioral Finance Theory

This is a theory that attempts to explain how emotions and cognitive errors influence investors and the decision making process. It is the last group of theories which explains the stock market performance through behavioral reasons such as irrational behavior and biases of investors whether individual or corporate investors (Kaimba, 2010), and

therefore the study of market efficiencies and security pricing should take into account the behavior of investors (Chirchir, 2011).

According to Sewell (2005), behavioral finance is the study of the influence of psychology on the behavior of the financial practitioners and the study of subsequent effect of markets. Belsky and Gilovich (1999) referred behavioral finance as behavioral economics in that "Behavioral economics combines the twin disciplines of psychology and economics to explain why and how people make seemingly irrational or illogical decisions when they spend, invest, save and borrow. Much of economic and financial theories presume that individuals act rationally and consider all available information in the investment decision making process.

Behavioral finance argues that some financial phenomena can plausibly be understood using models in which some agents are not fully rational. The field has two building blocks: limit to arbitrage, which argues that it can be difficult for rational traders to undo the dislocations caused by less rational traders; and psychology, which explains the kinds of deviations from rationality we might expect to see. The empirical and theoretical literature on this subject are still limited and underdeveloped but it is assumed that some investors in the stock market exhibit sentiments such as herding instincts, emotional and social influences as well as conservatism behavior which sway their actions and guide their decisions. When this happens therefore, stock markets performance is affected by non-fundamental issues and may not conform to empirically supported investment behavior (Kaimba, 2010).

2.3 Empirical Studies

Various empirical studies relating to the different aspects of the cross-listing of securities in foreign markets have been done by different researches in the past. Hargis (2000) examined the International cross-listing and stock market development in emerging economies (Latin America) and the findings of the study showed that cross-listing has been instrumental in the development of Latin America stock markets. Another study was done by Jayakumar (2002) on the Impact of International Cross-listing on Local Exchanges and the findings of the study was that there is some indication of an increase in the base-level price volatility of the underlying stock series following cross-listings. Pagano et al (2002) on their study on the geography of equity listing, that was trying to find out the reason why European Companies list their shares abroad concluded that the single major common feature between the European and the United States of America is size whose importance suggests that the cross-listing decision involves non negligible fixed costs and economies of scale, consistent with the findings of studies of the decision to list in domestic markets, such as Pagano et al (1998).

A study by King and Segal (2004) was on the International Cross-Listing and the Bonding Hypothesis. The findings of the study indicate that Cross-listed Canadian firms that succeed in attracting share turnover in the United States realize the benefits from cross-listing in terms of an increase in valuation, however when firms cross-list their shares but continue to trade predominantly at home, these benefits will be limited. Tolmunen and Torstila (2005) on their study on Cross-Listings and Mergers & Acquisition Activity analyzed whether European firms choose to list shares in the United States of America to facilitate acquisitions and they argue that Evidence from a sample of

547 European companies shows that cross-listed firms are significantly more active in acquiring US companies than are their domestically listed peers.

Lel and Miller (2006) studied the International Cross-listing, Firm Performance and Top Management Turnover. They examined the primary outcome of corporate governance, the ability to identify terminate poorly performing Chief Executives Officers (CEOs), to test the effectiveness of U.S.A investor protections in improving the corporate governance of cross-listed firms. Their findings showed that firms from weak investor protection regimes that are cross-listed on a major U.S.A exchange are more likely to terminate poorly performing CEOs than non-cross-listed firms, and more so Cross-listings on exchanges that do not require the adoption of the most stringent investor protections (OTC, private placements and London listings) are not associated with a higher propensity to shed poorly performing CEOs.

A study by Adelegan (2008) on the impact of cross-listing of stocks on the depth of stock markets in Sub-Sahara Africa (SSA), was done by analyzing data from 1997 to 2007 of a panel thirteen stock markets within the SSA countries (Botswana, WAEMU, Ghana, Kenya, Mauritius, Namibia, Nigeria, South Africa, Tanzania, Uganda, Zambia, Zimbabwe and Swaziland) and findings showed a significant positive effect in measures of stock markets depth around regional cross-listing events. The Impact of the Regional Cross-Listing of Stocks on Firm Value in Sub-Saharan Africa was done by Adelegan (2009). Using event study methodology, the findings of the study showed positive abnormal returns around the date of the regional cross-listing of stocks. The positive announcement period effect, together with the normal post cross-listing performance,

shows that regional cross-listing increases firm value. Overall, this provides evidence that firms benefit from listing outside their home market and need to be taken into consideration by SSA country authorities as they seek a regional approach to stock market development.

Indian stock market reaction to international cross-listing is a study that was done by Tripathy and Jha (2009). The study investigates the impact of cross-listing of ADRs on the Indian stock market for the period June 2004 to July 2009, the results indicates a significant negative abnormal local market return on the ADR listing day. Six out of nine companies shows increased volatility of local returns after the cross listing and therefore they conclude that ADR listings have no tangible benefit impact to the local shareholders.

There are view empirical studies that have been done within the Kenyan and the regional economy on the cross-listing of securities, Achieng (2007) investigated if there is any abnormal returns that investors can gain by trading on identical shares between the East Africa Securities Exchanges and the study concluded that there is no any potential arbitrage opportunity for investors trading in cross-listed shares in East Africa. The findings of the study were consistent with the findings of a study that was conducted by Kuria (2007). Cherono (2010) examined the market reaction to the announcement of cross-listing by examining companies listed at the NSE and the findings of the study indicated that the market does not regard any individual stock market highly than another as they all react positively or negatively following the announcement of cross-listing. Other related studies that have done include a study by Mageto (2010) on the factors influencing cross-listing decision by Kenya Commercial Bank; a study on the challenges

of cross-border mergers and acquisition by Muchae (2010); and the study on the effects of the East Africa community on cross-border trade at the Malaba border (Gikonyo, 2009). Onyuma et al, (2012) studied the effects of cross-border listing on the financial performance of companies listed in East Africa Securities Markets and their overall findings provide some evidence that firms may benefit from cross-listing in terms of liquidity, and confidence as measured by price earning ration (P/E).

2.4 Summary of the Literature Review

From the foregoing review of literature it is evident that there are many studies that have been done in different parts of the world on cross-listing; of fundamental significance is the fact that many of these studies have been done in the developed and emerging markets. In addition, the review of literature abovementioned concludes that cross-listing of securities have effect on the value of the firm that has cross-listed its securities (Adelegan, 2009). Therefore, the lack of evidence of a similar study on the firms cross-listed within the East Africa securities markets, given the increasing number of firms that are cross-listing their shares within the region, is the knowledge gap that this study seeks to fill.

CHAPTER THREE

RESEARCH METHODOLGY

3.1 Introduction

This chapter outlines the methodological technique that was used to carry out the study. The section describes the research design, the study population, sampling design, data collection procedures, and data analysis.

3.2 Research Design

Research design refers to the way a study is planned and conducted, the procedures, and techniques employed to address the research problem or question. It shows the tools required, the resources needed, the cost involved, and the time schedule of anticipated progress (Frankfort-Nachmias and Nachmias, 1999). Event study research design was used in this study; which according to Strong (1992), an event study is an empirical investigation of the relationship between security prices and economic events, whereas MacKinlay (1997) defines an event study as; "Using financial market data, an event study measures the impact of a specific event on the value of the firm".

3.3 Population

Population is the total number of units in the study that the findings will be generalized in order to make inferences (Mugenda and Mugenda, 2003). The target population of this study was all the sixty one (61) companies listed at the Nairobi Securities Exchange (Appendix 2).

3.4 Sampling Design

According to Mugenda and Mugenda (2003) sampling design is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the larger group from which they were selected. Seven firms were selected to be the representative sample size of the study population. This sample was sampled using Purposive Sampling Research Design; this is a non-probability sampling method that allows researchers to use cases that have the required information with respect with the objective of the study (Mugenda and Mugenda 2003). All the firms sampled were from the NSE which had cross-listed their shares within the East Africa Securities Exchange markets (Appendix 3).

3.5 Data Collection

The data that was used in this study is secondary data that was collected based on the daily market statistics released by the Nairobi Security Exchange for the entire period of the study. The focus was on the daily market prices of the representative sample firms and the daily market index as measured by the NSE 20 Share Index for a period of forty one (41) days being the event period, that is twenty days before cross-listing and twenty days after cross-listing plus the event day and one hundred and twenty (120) days as the Estimation window; the same period was used by MacKinlay (1997)

3.6 Data Analysis

The study adopted an event study methodology to analyze market reactions to the regional cross-listing of stocks, which is the effect of regional cross-listing on firm value around the event period. In the application of event study methodology, this study

followed the approach outlined in MacKinlay (1997), which consists of the following steps: First is to define the event of interest which according to this study is the cross-listing of shares within the East Africa securities exchanges and identify the event window. Secondly is to select the sample of countries, stock markets, and firms to be included. Thirdly is to select the estimation window. Fourthly is to estimate the abnormal return. Lastly is to test whether the abnormal return is statistically significant; and to test whether the AAR observed were different from zero t-statistics was used on a confidence level of a 95%. Microsoft excel and SPSS computer software packages were used to analyze and test the statistically significance of the study accordingly.

Figure 3.1: Time Line of the Event Study
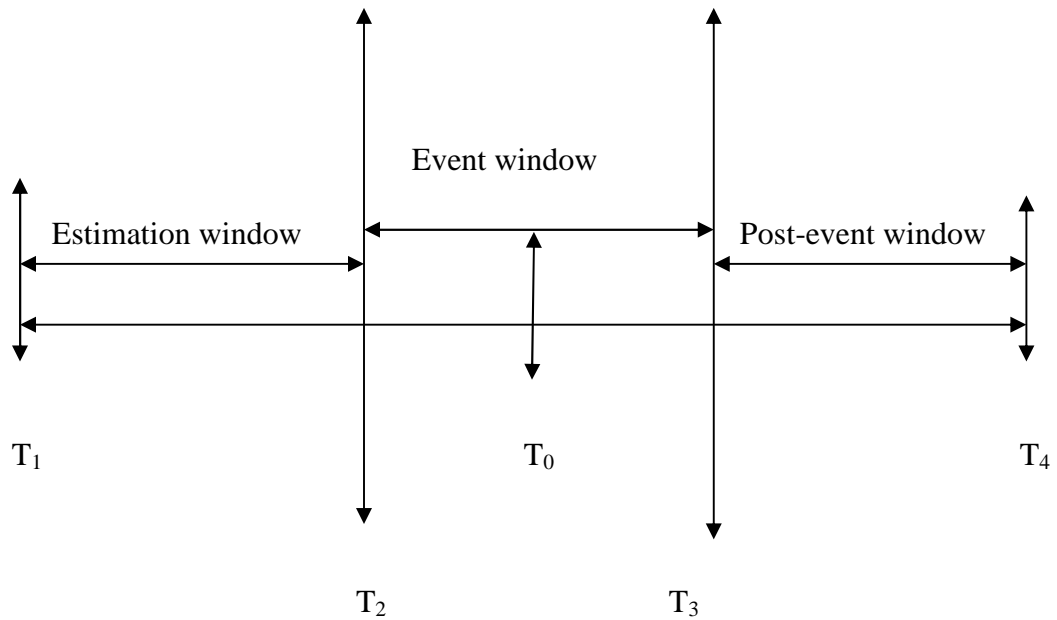
Source: Author's drawing

Where T_1 = start of estimation window

T_2 = end of estimation window

T_0 =event date

T_3= end of event window

T_4=end of post event window

Estimation window is the period used to define the normal return of the stock (Haggerty 2010). MacKinlay (1997) defines normal return as the expected return without conditioning on the event taking place. It is most common to use the period prior to the event window to do this. The event window itself is not included, since the effect from the event might contaminate the definition of the normal return for the stock (Haggerty, 2010).

The event window is the period for which the researcher investigates the abnormal return. It is important to define how many days surrounding the event date, which is the number of days to be included in the event window. Sometimes a post-event window is included to estimate the normal return model. This is done in cases where there are gradual changes in the parameters, or when the risk of the firm changes because of the event (Haggerty, 2010).

3.6.1 Analytical Models

In order to find the expected returns, this study shall adopt the market model which provides a linear specification of the return of the given stock to the return of the market portfolio. This is because this model reduces the variance of abnormal returns by removing the portion of the stock return that is related to variation in the market return (Adelegan, 2009). The market model is specified as:

$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$

Where: R_{it} = is the return on stock i at time t.

R_{mt} = is the market return at time t

ε_{it} = is the error term at period t.

Using regression analysis, the alpha, beta and sigma coefficients are calculated, these are the variables that explains the typical relationship between the stock and the reference index. With these three parameters, the expected returns were predicted then these expected returns were deducted from the actual returns to get the abnormal returns which are the metrics of interest.

$$AR_{it} = R_{it} - E\,(R_{it}\,|\,X_t)$$

Where: AR_{it} = abnormal return

R_{it} = Actual return

$E\,(R_{it}\,|\,X_t)$ = Expected return

X_t = is the conditioning information for the normal return model.

After getting the abnormal return, then cumulative abnormal return is computed by summing up all the abnormal returns.

$$CAR = \sum AR_{it}$$

Then the statistical significance of the AR and CAR were determined using t-test statistics. Microsoft excel and Statistical Package for the Social Science (SPSS) will be employed in modeling the financial data.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents a summary of the data analysis, results of the study and discussion on the results of the study.

4.2 Data Analysis and Results

The objective of this study was to determine the effect of cross-listing on the value of firms cross-listed within the East Africa Securities Exchanges. To achieve this objective, analysis of the share prices reaction to cross-listing of securities of companies listed at the NSE before and after was carried out. This was done by calculating the daily Abnormal Returns (AR) of each security and the Cumulative Average Abnormal Returns of all the firms for the entire event window.

4.2.1 Market Model Parameters and the Market Model Equation

Market Model equation was used to estimate the expected returns for each security during the event window. However before this was done the Market Model parameters were first estimated by regressing the share price returns and the market returns for the non-event window (i.e. estimation window) using the Ordinary Least Square (OLS) regression model (Table 1).

The alpha (intercept) indicates the security price when there is no any event to condition or influence the performance of the market. The beta (slope) is the coefficient obtained

by regressing the market index returns and the security prices; this measures the stock's volatility as compared with the market (Panayides and Gong, 2002).

Table 4.1: Market Model Parameters and Equation

Company	Intercept (Alpha)	Slope (Beta)	Market Model Equation $R_{it}=\alpha_i +\beta_i R_{mt}$
CENTUM	-0.00207	1.95354	$R_{it} = -0.00207+1.95354R_{mt}$
EABL	0.00001	0.44132	$R_{it} = 0.00001+0.44132R_{mt}$
EQUITY	-0.00321	2.99526	$R_{it} = -0.00321+2.99526R_{mt}$
JUBILEE	-0.03064	3.32320	$R_{it} = -0.03064-3.32320R_{mt}$
KCB	-0.00160	0.72254	$R_{it} = -0.00160+0.72254R_{mt}$
KQ	0.00095	1.17423	$R_{it} = -0.00049+1.17423R_{mt}$
NMG	0.00120	0.25638	$R_{it} = 0.00120+0.25638R_{mt}$

Source: Research Findings

4.2.2 Abnormal Returns

After computing the expected returns for the event window using the market model equation, the abnormal returns for each security was calculated. According to Mackinlay (1997), abnormal return is the actual ex post return of the security over the event window minus the normal (expected) return of the security over the event window; where the normal return, is the expected return without conditioning on the event taking place.

Table 4.2 shows that the average abnormal return of the study during the event day is a positive of 0.01117. The t-test statistics shows that the p-value of the event day is 0.276

which is less than 0.05 and it is 95% confidence that the mean average abnormal returns

lies -0.0116217 below zero and 0.0339617 (Table 4.3).

Table 4.2: Abnormal Returns on the Event Day (0)

Company Name	Abnormal Returns on the event Day
East Africa Breweries Ltd	-0.00182
Equity Bank	0.03743
Centum Investment	0.03206
Jubilee Insurance	0.04179
Kenya commercial Bank	-0.00964
Kenya Airways	-0.01325
Nation Media Group	-0.00838
Average Abnormal Returns	**0.01117**

Source: Research Findings

Table 4.3: Test Statistics for Period (0)

	Test value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AAR	1.119	6	0.276	0.01117000	-0.0116217	0.0339617

Source: Research Findings

Figure 4.1: Average abnormal Return Graph
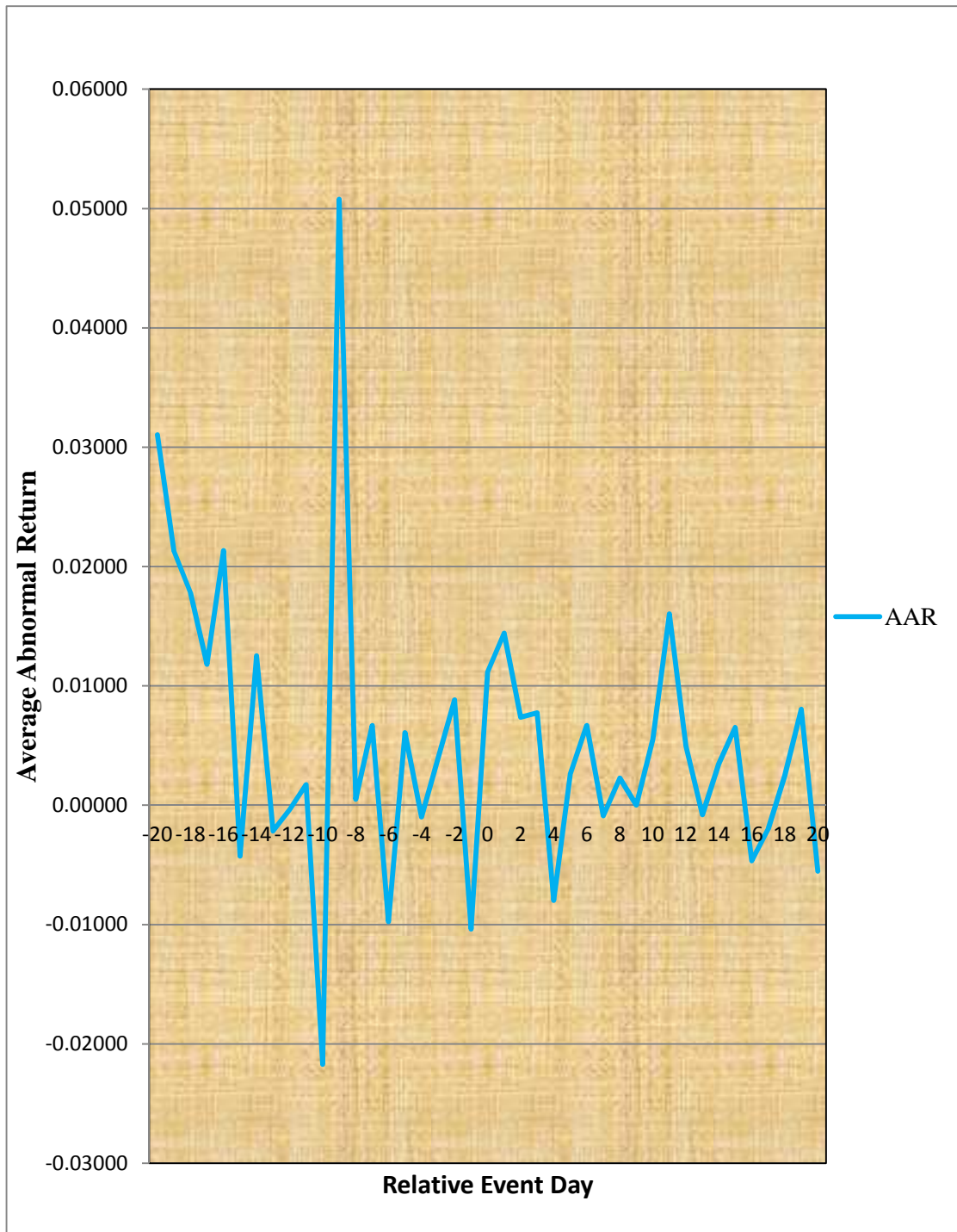
Source: Research Findings

By observing the trend of the graph in Figure 4.1, it is noted that there was a sharp rise on the average abnormal returns from -0.01038 on day t_{-1} to 0.01117 on the event day (i.e. day t_0). It is also important to note that, the mean of the average abnormal return for periods (-20, -1) and (1, 20) are 0.00724 and 0.00332 respectively showing slightly lower on the latter period and both are positive returns in absolute terms. The p-values of the same periods that is period (-20 -1) and period (1, 20) are 0.058 and 0.026 respectively (Table 4.4 and 4.5).

Table 4.4: Test Statistics for Period (-20,-1)

	Test value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AAR	2.016	19	0.058	0.00723550	-0.0002747	0.0147457

Source: Research Findings

Table 4.5: Test Statistics for Period (1, 20)

	Test value = 0ssss					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AAR	2.412	19	0.026	0.00331500	0.0004380	0.0061920

Source: Research Findings

To test the robustness of the study a t-test statistics for the entire event period was carried out and the findings showed that the mean average abnormal returns 20 days around the event day are positive with a p-value of 0.006 as depicted in table 4.6.

Table 4.6: Test-Statistics for Period (-20, 20)

	Test value = 0					
					95% Confidence Interval of the Difference	
	T	Df	Sig. (2-tailed)	Mean Difference	Lower	Upper
AAR	2.882	40	0.006	0.00541902	0.0016188	0.0092192

Source: Research Findings

4.2.3 The Cumulative Abnormal Returns

Figure 4.2 shows the trend of the cumulative abnormal returns twenty (20) days around the day of cross-listing. The overall findings of the study shows that there are positive abnormal returns around the date of the regional cross-listing of stocks providing evidence that firms benefit from listing outside their home market.

Figure 4.2: Cumulative Averages Abnormal Return Graph
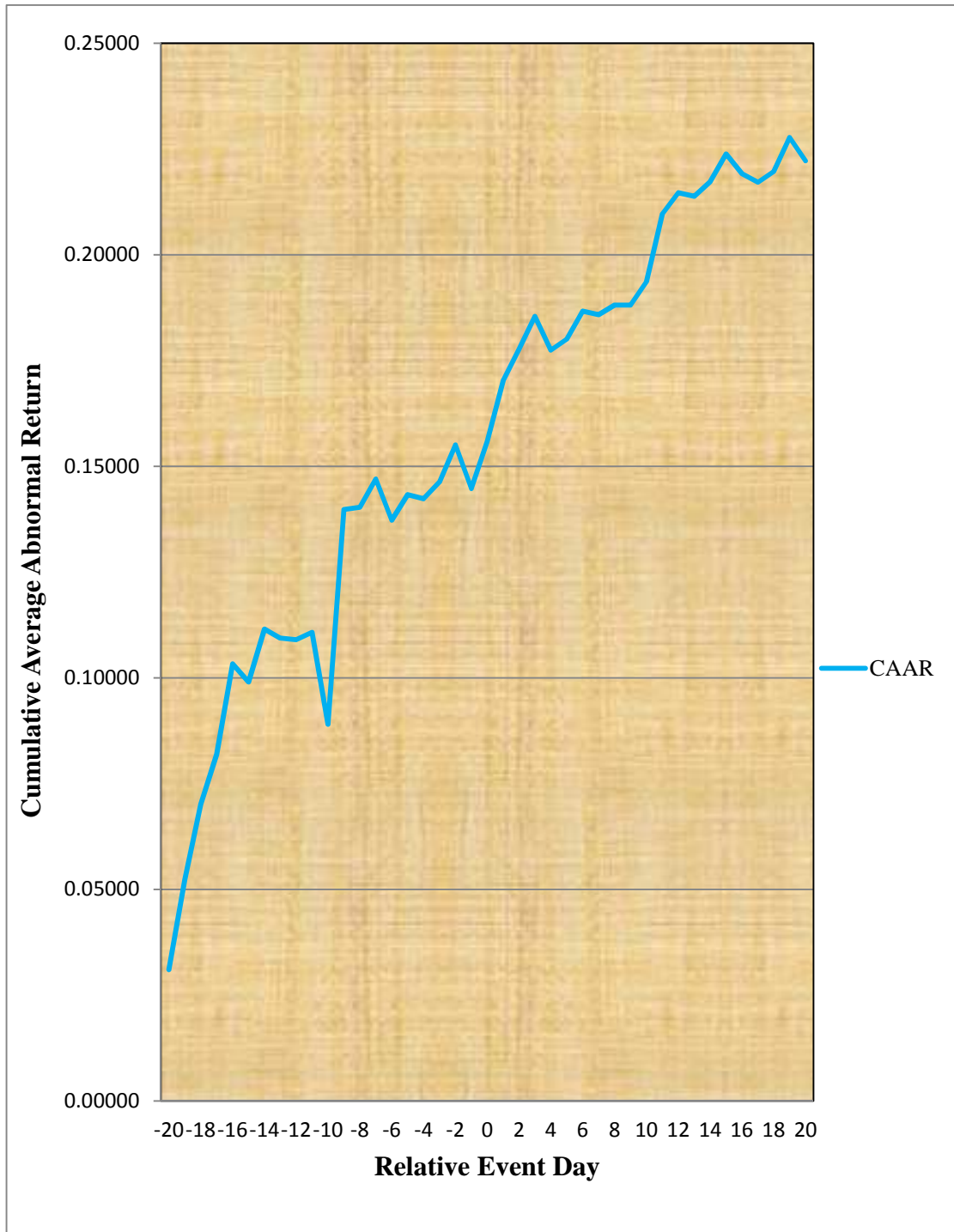
Source: Research Findings

4.3 Interpretation of the Findings

The stock market is an important institution for price discovery; the forces of demand and supply in the market determine the market price of a security. This market price is useful in the valuation of companies, evaluation of portfolio performance, facilitating transfer or disposal of securities (Chirchir, 2011). It is therefore worth to note that the current market value of a firm depends on its prevailing share price in the market, the higher the current share price the higher will be the current market value of the firm and vice versa.

The findings of this study indicate that the most volatile or risk securities are those of Jubilee Insurance Company whereas the least volatile securities are those of NMG (Table 4.1). However table 4.2 indicates that Jubilee insurance as the highest abnormal returns during the event day (t_0), this confirms that fact that the higher the risk of a security the higher the returns. During the event day the average abnormal returns was a positive 0.01117 though at 5% significance level the mean is not statistically different from zero, more so the findings shows that at 95% confidence the mean average of the abnormal returns during the event day lies -0.0116217 below zero and 0.0339617 above zero (Table 4.3).

Table 4.4 shows the t-test statistics of period (-20,-1) that is twenty days before the event day. The findings indicate that at 5% significance level, the mean of the abnormal returns is not statistically different from zero since its p-value is 0.058 which is more than 0.05. It also shows that at 95% confidence level, the mean average of the abnormal returns lies - 0.0002747 below zero in the lower side and 0.0147457 above zero in the upper side.

The t-test statistics of period (1,20) that is twenty days after the cross-listing shows different results from that of period (-20,-1) as indicated in table 4.5. The results shows that at 5% significance level the mean average of the abnormal return is statistically different from zero since its p-value is 0.026 which is less than 0.05, more so the results shows that at 95% confidence, the mean average of the abnormal returns lies 0.000438 above zero on the lower side and 0.006192 above zero on the upper side.

The overall findings of the study indicates that at 5% significance level the mean average of the abnormal returns is statistically different from zero this is because it p-value is 0.006 , a figure which is less than 0.05. The results also shows that at 95% confidence, the mean average of the abnormal returns lies 0.0016188 above zero from the lower side and 0.0092192 above zero from the upper side (Table 4.6).

The trend of the graph of the abnormal returns indicates that there was shape rise of average abnormal return up to 0.05 on day t_{-9} this could be an indication that holding other factors constant the market could have predicted the event Nine days before it took place. However since the findings on day t_0 indicates a positive results of 0.01117, which was a 207.61% rise above day t_{-1} results that was -0.01038, the results indicates that investors reacted positively to cross-listing (Figure 4.1). More so the trend of the graph of the cumulative average abnormal returns shows that, overall, the abnormal returns are positive around the date of the cross-listing, this provides evidence that firms benefits from cross-listing their shares outside the home markets (Figure 4.2).

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introductions

This chapter presents the summary of the findings of the previous chapter, conclusions drawn from the findings, limitation of the study and recommendations based on the findings of the study.

5.2 Summary

The study examined the effect of cross-listing on the value of firms cross-listed within the EASE; this was achieved by analyzing share prices reactions to cross-listing twenty (20) days around the event day (cross-listing date). Event study methodology was applied in analyzing the data following the approach outlined by the MacKinlay (1997).

The expected returns of each security was estimated using the market model equation ($R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it}$), however before this was done the Market Model parameters were first estimated by regressing the share price returns and the market returns for the estimation period (120 days before the event). After obtaining the expected returns for each firm, the abnormal returns were calculated by subtracting the expected returns from the actual returns for each day and the same were summed up and averaged to obtain the Average abnormal return. The results indicated that firms reacted positively to cross-border listing; this was confirmed by the results of the event day which rose by 207.61%, that is it rose from -0.01038 on day t_{-1} to 0.01117 on day t_0.

The t-test statistics of the study shows that at 5% significance level the mean of the abnormal returns before the event was not statistically different from zero whereas the mean of the abnormal after the event was statistically different from zero. More so, at 5% significance , the overall findings of the study shows the mean average of the abnormal return is statistically different from zero and it is 95% certain that, the mean lies between 0.0016188 above zero on the lower side and 0.0092192 above zero on the upper side.

These findings therefore underscore the fact that cross-listing of securities increases the value of a firm; similar to the findings of the studies done by Adelegan (2009) and Perotti and Cordfunke (1997).

5.3 Conclusion

The findings of this study present evidence on the effects of cross-listing on the price of a security cross-listed. Whereas the negative cross-listing effect shows that cross-listing decreases the value of a firm, positive cross-listing effect on the other hand shows that cross-listing increases the value of a firm.

The Empirical evidence from the study shows that though returns differ among firms, results are higher around the cross-listing date. Overall, the higher positive effect of cross-listing on the returns of securities after cross-listing is strong indication that regional cross-listing increases the value of a firm, hence firms within East Africa region may consider cross-listing their securities if they so wish. Based on the findings of this study it is clear that investors will gain a lot by investing on securities which have been cross-listed.

The government and other institutions like the Capital Market Authorities who are in charge of formulating policies have a reason also to be concerned about the effects of cross-listing on the value of a firm. The findings of this study will help them understand whether regional integration is of any importance or otherwise; and based on the results presented in this study it is apparent that cross-listing of securities has impact on the value of a firm and therefore the policy makers should formulate policies which promotes regional integration of capital markets.

The findings of this study have contributed to the body of knowledge. By applying the Event study Methodology and following the approach outlined by the MacKinlay (1997), the study found out that, overall, cross-border listing have positive effect on the share price of a security cross-listed and hence underscoring the fact that cross-listing increases the value of a firm. Previous study done in Kenya (Cherono, 2010), indicated that the market does not regard individual stock market highly than another in their analysis of cross-border listing announcements as they all had positive and negative returns following cross-border listing announcements.

5.4 Policy Recommendation

Given the fact that stock markets plays a key role in the development and growth of an economy, policy makers especially countries within the East Africa Region should focus on formulating policies that promotes integration of their security markets.

Firms should also be encouraged to make cross-listing one of their key objective by providing them with incentives like tax exemption and reduction in transaction and the approval costs of regional cross-listing of securities.

Countries within the East Africa Region should focus more on harmonizing their Laws such as that of Capital Markets Authority so that trading within the EASE could be made with ease.

5.5 Limitations of the Study

One of the limitations of the study is that contrary to the efficient market hypothesis which states that an impact of an event will be instantly reflected in stock prices, in an inefficient market observed stock prices may not fully and immediately reflects all information.

In some situations some unforeseen coexisting events could also have an effect on the sample stocks, which could lead to biased stock returns, therefore abnormal returns are not entirely the results of market reaction to the specified event of interest.

Another limitation is that there is no standard estimation and event period in event study and therefore different researchers could chose different length of estimation and event periods, hence their inferences depending on the length of the period might be different.

5.6 Areas for Further Research

A further study needs be carried out to find out how performance of the East Africa Securities Exchanges relate to each other, this will benefit investors when making investment decision on which markets they need to diversify their investment so that they may be able to reduce risk.

A research need also to be carried out to find out why only a few of the many companies listed at the EASE markets have cross-listed their shares whereas majority of them have not, this will help policy makers to address their concerns when formulating policies.

There exists rivalry among firms in any industry and therefore it would be very interesting to study how securities of rival firms react to the announcement of their intention to cross-list by rivals, this would help the management of a company when formulating their strategic plan.

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APPENDICES

Appendix 1: Budget Estimates of the Research Project

Activity	Cost (Kshs)
Research proposal Typing	**5,000**
Research proposal printing and binding	**3,000**
Data collection/Purchase from NSE	**10,000**
Final research project report typing	**5,000**
Final research project report printing and Binding	**5,000**
Miscellaneous	**3,000**
Total	**31,000**

Appendix 2: List of All Listed Companies at NSE.

	Listed Companies
	Agricultural
1	Eaagads Ltd
2	Kapchorwa Tea Company Ltd
3	Kakuzi
4	Limuru Tea Company Ltd
5	Rea Vipingo Plantation Ltd
6	Sasini Ltd
7	Williamson Tea Kenya Ltd
	Commercial And Services
8	Express Ltd
9	Kenya Airways Ltd
10	Nation Media Group
11	Standard Group Ltd
12	TPS Eastern Africa (Serena) Ltd
13	Scangroup Ltd
14	Uchumi Supermarket Ltd
15	Hutching Biemer Ltd
16	Longhorn Kenya Ltd
	Telecommunication and Technology
17	Access Kenya Group Ltd
18	Safaricom Ltd
	Automobiles and Accessories
19	Car And General (K) Ltd
20	Cmc Holding Ltd
21	Sameer Africa Ltd
22	Marshals (E.A) Ltd
	Banking
23	Barclays Bank Ltd

24	CFC Stanbic Holdings Ltd
25	I & M Holdings Ltd
26	Diamond Trust Bank Kenya Ltd
27	Housing Finance Co. Ltd
28	Kenya Commercial Bank Ltd
29	National Bank Of Kenya Ltd
30	Nic Bank Ltd
31	Standard Chartered Bank Ltd
32	Equity Bank
33	The Co-Operative Bank Of Kenya Ltd
	Insurance
34	Jubilee Holdings Ltd
35	Pan African Insurance Holdings Ltd
36	Kenya Re-Insurance Corporation Ltd
37	Liberty Kenya Holding Ltd
38	British American Investments Company(K) Ltd
39	Cic Insurance Group Ltd
	Investments
40	Olympia Capital Holding Ltd
41	Centum Investment Company Ltd
42	Trans-Century Ltd
	Manufacturing and Allied
43	Boc Kenya Ltd
44	British American Tobacco Ltd
45	Carbacid Investment Ltd
46	East African Breweries Ltd
47	Mumias Sugar Company Ltd
48	Unga Group Ltd
49	Eveready East Africa Ltd
50	Kenya Orchards Ltd

51	A.Baumann Co. Ltd
	Construction and Allied
52	Athi River Mining
53	Bamburi Cement Ltd
54	Crown Berger Ltd
55	East Africa Cables Ltd
56	East Africa Portland Cement Ltd
	Energy and Petroleum
57	Kenol Kobil
58	Total Kenya Ltd
59	Kegen Ltd
60	Kenya Power And Lighting Company Ltd
61	Umeme Ltd

Appendix 3: Cross-Listed Companies

Company	Announcement Date	Cross-Listing Date	Exchange Market
CENTUM	13th August 2010	11th February 2011	USE
EABL	12th March 2001	27th March 2001	USE
	14th June 2005	29th June 2005	DSE
EQUITY BANK	2nd April 2009	18th June 2009	USE
JUBILEE	1st January 2006	14th February 2006	USE
		27th June 2006	DSE
KCB	28th October 2008	29th November 2008	USE
KQ	20th December 2001	28th March 2002	USE
	21st September 2004	1st October 2004	DSE
NMG	7th October 2010	19th October 2010	USE
		2nd November 2010	RSE
		21st February 2011	DSE

Appendix 4: Average and Cumulative Abnormal Returns

						Std. Dev. Of AAR	0.03288		
	Centum	EABL	Equity	Jubilee	KCB	KQ	NMG	AAR	CAAR	t-test
	AR	AR	AR	AR	AR	AR	AR			
NO#										
-20	-0.02635	0.01283	-0.01392	0.17638	0.05372	0.00544	0.00918	0.03104	0.03104	0.94416
-19	0.00968	0.00898	-0.00600	0.07603	0.05356	0.00135	0.00553	0.02130	0.05234	0.64800
-18	0.01026	0.01137	-0.00972	0.04540	0.06395	0.00944	-0.00610	0.01780	0.07014	0.54141
-17	0.01116	0.00588	-0.00584	0.02617	0.05341	-0.01255	0.00441	0.01180	0.08195	0.35903
-16	0.03974	-0.00315	0.01711	0.04759	0.04436	0.00578	-0.00205	0.02134	0.10329	0.64909
-15	-0.03924	-0.01284	0.02772	0.02462	-0.04685	0.01414	0.00268	-0.00425	0.09903	-0.12938
-14	-0.02291	0.00021	0.01624	0.05666	0.02490	0.01301	-0.00043	0.01253	0.11156	0.38099
-13	-0.00475	0.00834	-0.00010	0.00109	0.00015	-0.02663	0.00683	-0.00215	0.10941	-0.06545
-12	0.00596	-0.01886	-0.00138	0.04209	-0.01678	0.00211	-0.01584	-0.00039	0.10902	-0.01172
-11	0.00658	0.02701	-0.02864	0.02785	-0.01618	-0.00400	-0.00051	0.00173	0.11075	0.05260
-10	0.01271	0.01150	-0.03200	-0.18371	0.03086	0.00373	0.00486	-0.02172	0.08903	-0.66069
-9	-0.00147	-0.01111	0.01618	0.30546	0.03697	0.01741	-0.00802	0.05077	0.13980	1.54439
-8	-0.00933	-0.01720	-0.01254	0.03741	-0.00771	0.00740	0.00549	0.00050	0.14031	0.01529
-7	-0.00053	0.01062	-0.01516	0.01866	-0.00011	0.02219	0.01111	0.00668	0.14699	0.20326
-6	-0.08067	0.00383	-0.00470	0.04062	0.00034	0.00858	-0.03621	-0.00974	0.13724	-0.29641
-5	0.07957	-0.03263	0.00037	0.01064	-0.01186	-0.00677	0.00322	0.00608	0.14332	0.18482
-4	0.01663	0.00028	-0.03793	0.02840	-0.01347	0.01700	-0.01785	-0.00099	0.14233	-0.03018
-3	-0.01400	0.02846	-0.01395	0.01277	0.02125	-0.00601	-0.00096	0.00394	0.14626	0.11973
-2	0.00033	0.01875	-0.03934	0.04670	-0.01528	0.02794	0.02267	0.00882	0.15509	0.26839
-1	0.00219	-0.03682	-0.02374	0.01118	-0.02550	0.01354	-0.01350	-0.01038	0.14471	-0.31575
0	**-0.00182**	**0.03743**	**0.03206**	**0.04179**	**-0.00964**	**-0.01325**	**-0.00838**	**0.01117**	**0.15588**	**0.33975**
1	-0.02159	0.00133	0.08844	0.03984	0.00850	-0.01969	0.00410	0.01442	0.17030	0.43863
2	-0.01794	0.00092	0.02501	0.02369	0.01537	0.00047	0.00416	0.00738	0.17768	0.22457
3	0.01017	0.01420	-0.01007	0.02368	0.00702	-0.00241	0.01165	0.00775	0.18543	0.23571
4	0.04142	-0.02997	-0.12792	0.04897	0.02698	-0.01218	-0.00312	-0.00797	0.17746	-0.24247
5	-0.01460	-0.01009	0.00004	0.01566	0.01389	0.00553	0.00764	0.00258	0.18004	0.07853
6	-0.00348	0.04017	0.00036	0.03022	-0.00593	0.01004	-0.02465	0.00668	0.18672	0.20310
7	-0.01449	-0.01667	-0.00738	0.03136	0.01245	-0.01534	0.00388	-0.00089	0.18583	-0.02695
8	-0.00840	-0.00005	-0.01500	0.02525	0.01097	0.01130	-0.00815	0.00227	0.18811	0.06917
9	-0.01851	-0.01855	0.02941	0.01048	0.00280	-0.00373	-0.00184	0.00001	0.18811	0.00020
10	0.00175	-0.01070	-0.03145	0.04102	0.01507	0.00982	0.01325	0.00554	0.19365	0.16841
11	0.00094	0.03882	0.00868	0.02624	0.02873	0.00293	0.00587	0.01603	0.20968	0.48754
12	-0.00142	0.00039	0.00703	0.02465	0.00455	0.00208	-0.00247	0.00497	0.21465	0.15124
13	-0.01761	-0.01736	-0.01066	0.04541	-0.02237	0.01306	0.00395	-0.00080	0.21385	-0.02425
14	0.00936	-0.01990	0.01161	0.00406	0.00513	0.00677	0.00707	0.00344	0.21729	0.10472
15	0.00524	0.02145	0.01343	0.00290	-0.00198	0.00556	-0.00097	0.00652	0.22381	0.19825
16	-0.01850	-0.01188	0.02708	-0.03034	-0.00150	0.00177	0.00074	-0.00466	0.21915	-0.14171
17	-0.01309	0.01532	-0.00294	-0.01132	-0.00366	0.00347	-0.00163	-0.00198	0.21717	-0.06021
18	-0.03322	0.01227	0.01459	0.02493	0.01347	-0.00864	-0.00598	0.00249	0.21966	0.07570
19	-0.01608	0.00638	0.03699	0.02842	-0.01091	0.01119	0.00037	0.00805	0.22771	0.24489
20	0.00042	-0.04705	-0.01779	0.05116	-0.01118	-0.01336	-0.00091	-0.00553	0.22218	-0.16819