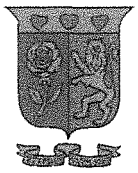

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Impact of mergers and acquisitions in the Financial Sector of the Nairobi Securities Exchange: An Event Study approach.

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Submitted in partial fulfillment of the requirements for the Degree of Bachelor of Business Science in Financial Economics at Strathmore University

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Nairobi,Kenya

[November 30, 2015]

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7/12/15

Contents

Abstract

This paper examines the impact of mergers and acquisitions in the financial services firms listed on the NSE on shareholder wealth in Kenya during the period 2000-20015. With the use of event study methodology, we reject the "semi-strong form" of Efficient Market Hypothesis (EMH) of the Nairobi Securities Exchange. We find that thirty days and ten days prior to the announcement of a merger and acquisition, shareholders receive considerable and significant positive cumulative average abnormal returns (CAARs). Also the results show that significant negative CAARs after the announcement of the deals.. The overall results indicate that bank mergers and acquisitions have an effect on the shareholder wealth as the y significantly affect the share prices of the acquiring firm.

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the Research Project contains no material previously published or written by another person except where due reference is made in the Research Project itself.

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7th Dec 2015 ..... [*Date*]

This Research Project has been submitted for examination with my approval as the Supervisor.

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1. Introduction

1.1 Background Information

In today's globalized economy mergers and acquisitions are being increasingly used for improving competitiveness of companies through gaining greater market share, broadening the portfolio to reduce business risk, for entering new markets and geographies and capitalizing on economies of scale among other things. Mergers and acquisitions have acquired increased societal importance in recent years owing to the presence of well-developed financial markets. Mergers and acquisitions are a common occurrence in developed economies, with a particularly high level of activity in the United States.

(Beena, 2004), has categorized the theories for the motives behind mergers and acquisitions into four categories, namely, 1) as efficiency enhancing measures, 2) as concentration and monopoly-enhancing, 3) driven by macro-economic changes and 4) driven by financial motives.

As efficiency enhancing measures, mergers and acquisitions are meant to have cost reducing effects, possibly through larger economies of scale, greater control over key inputs, combined marketing and/or product rationalization. As concentration and monopoly enhancing mergers and acquisitions have the immediate effect of increasing the degree of concentration as it reduces the number of firms or generating barriers of entry. Mergers and acquisitions are driven by macroeconomic changes when they are undertaken to compensate for wide fluctuations in demand and product mix, excess capacities related to slow sales growth and declining profit margins and technological shocks (Fred, 1996). Additionally firm can adopt Mergers and acquisitions as a route to growth when alternative investment opportunities for financing expansion are unattractive or unavailable.

Kenya has been one of the regional leaders in the mergers and acquisitions drive. The reasons for such increased interest in mergers and acquisitions have been different among the component industries in the financial services sector. In the insurance industry mergers and acquisitions have been driven by changes in regulatory environment as the minimum capital requirements have been increased severally among other factors such as cross boarder expansion, increasing market

share and diversification of risk. According to (www.centralbank.go.ke), owing to changes in the operating environment, several licensed institutions, mainly commercial banks, have had to merge (combine their operations in mutually agreed terms) or one institution takes over another's operations (acquisitions).

1.2Problem Statement

In research literature attention has been paid to M&A transactions and several studies have been conducted in order to understand and determine the trends and the characteristics in this field. The overall motive for the acquirer is value creation and in the light of increasing M&A activity it is relevant to examine whether or not value is created (eriksen & moller, 2008). There is no overall agreement on whether or not mergers and acquisitions create value for either the acquiring or target firm.

Investor and shareholders alike are keen to find out the value created by mergers and acquisitions in Kenya especially due to the current merger wave being experienced in Kenya. This paper attempts to analyze the pre and post effects of mergers and acquisitions on stock prices in the financial sector of the Nairobi Securities Exchange. The study further attempt to determine which industry in the financial sector (insurance, banking and investments) is most affected by mergers and acquisition in terms of shareholder value.

1.3 Research Question (Objectives)

The research attempts to answer the following questions.

- Do Mergers and Acquisitions affect the shareholder value as measured using stock prices?
- To what extent do Mergers and Acquisitions affect shareholder value as measured by Cumulative Average Abnormal Stock Returns?

1.4 Significance of the research

Studies in this area in Kenya are in their nascent stages and their findings are inconclusive. Most of the empirical work done (Muasya, 2011;Kithitu, Cheluget, Keraro, & Mokamba, 2012) has focused on efficiency by analyzing the accounting ratios before and after the merger or acquisition. Following the recent increase in merger and acquisition activity in the country this study would be of interest to scholars, shareholders and investors and the regulators

To the scholar this paper would be a source of empirical reference and literature review. It will also provide a ground for further research to the scholar. To the shareholders this study will help widen their knowledge when faced with decisions on mergers and acquisitions and how mergers and acquisitions will affect their overall wealth. This study will also help regulators understand better the effects of mergers and acquisitions and also understand how to better mitigate the risks facing the industries in the financial sector of Kenya.

2. Literature Review

Kovacich,(2005) define a merger as a combination of forces by two or more firms in order to operate as one. In business economics it is a combination of two or more firms into one larger firm. Acquisitions also known as takeovers refer to a buyout or a purchase business combination where one company known as a predator takes over another company known as atarget firm (Kovacich, 2005)

Numerous research analysing the effect of Meger and Acquisiton transactions have been carried out. Moeller et al (2005) concluded that value is actually destroyed when engaging in acquisitions.. Liargovas (2010), found that ten days prior to the announcement of a Merger and Acquisition share holders receive significant positive cumulative average abnormal returns but this does not persist after the merger.

Scholars have used different methods to measure the success of mergers and acquisitions. The thre most prominent methods in empirical research are 1) event studies 2)efficiency studies and 3) performance studies (Beitel, Schiereck, & Wahrenburg, 2004).Event studies directly measure the impact a merger or acquisition has on shareholder wealth,efficiency studies judge the success of a merger or acquisition based on the post-merger efficiency and whether the firm moves closer to the efficient frontier. Performance studies consider improved accounting ratios as a sign of a successful Merger or acquisition transaction.

Schiereck & Kolaric(2014) explain that efficiency studies employ an econometrical technique known as frontier methodology.The most common approach is to approximate either a cost or profit function of the most efficient company and to consequently treat this function as the efficient frontier to which all other companies in the sample are compared. The further away a company is from the efficient frontier,the higher the potential of efficiency improvements. Beitel (2002) argues that this is the most complex methodology since it needs a multitude of accounting varibles and approximations hence it is error prone. Schiereck & Kolaric (2014) concur by adding that dynamic efficiency studies do not consider the market performance since all estimates are based on accounting data. However, Berger, Densetz, & Strahan (1999) posited that one of the main advantage of efficeincy studies is their ability to investigate the origin of efficiency changes and allow for the simulation of potential mergers, that will lead firms towards the efficient frontier.

Performance studies use accounting ratios to measure whether there is a significant change in the performance of the merging institutions after a merger or acquisition transaction.A transaction is considered successfull if the the post-merger ratios significantly improve and if this improvement can be attributed to the transaction itself (Schiereck & Kolaric, 2014). Accounting studies typically compare results for the sample firms with control firms to discount any industry wide phenomenon. (Krishnakumar & Sethi, 2012). Some studies (Healy, Palepu, & Ruback, 1992) assert that performance studies are better than capital market studies since equity gains in capital markets could be due to capital market inefficiencies and market mispricing. They use an operating cash flow measure of operating performance which has been adjusted against industry benchmark returns to evaluate performance for a period of 5 years post acquisition.

The third type of method is event studies.The event study methodology is based on Efficient Market Hypothesis (EMH) developed by Fama et al. (1969) and Fama (1970). According to this, a market is efficient if "prices fully reflect all available information". One important assumption is that capital markets are sufficiently efficient to react on events (new information) regarding expected future profits of affected corporations. (Liargovas, 2010). Schiereck & Kolaric (2014) explain that an acquisition is classified to be successful if it results in a positive change in shareholder value as depicted by an increase in stock prices or an abnormal return (a stock return in excess of the expected one). Essentially this abnormal return is measured by finding the difference between the actual return and the expected return.

Schiereck & Kolaric (2014) give the three basic models used to calculate the expected return 1) the market and risk adjusted return model, or short market model, 2)the mean adjusted return model, 3) the market adjusted return model. The market model was first used by Dodd & Warner (1983) when studying the effects of proxy contests on shareholder wealth. The expected return $\hat{R}_{jt}$ is calculated as:

$$\widehat{R_{Jt}} = \widehat{\alpha_J} + \widehat{\beta_J} R_{Mt}$$

Where $\widehat{\alpha_J}$ and $\widehat{\beta_J}$ are the estimated model parameters and R_{Mt} is the rate of return of an industry or country index as a market proxy. The abnormal return is then calculated from this expected

return. The market model is the most frequently used in empirical studies. The mean and market adjusted return model is used in only a few studies (Schiereck & Kolaric, 2014).

Cable & Holland (1999) compare the three models using a pilot study of the daily share price of thirty UK firms and concluded that the market model proved valid in all twenty-one remaining cases, with the market adjusted model (IM) a legitimate approximation in nine cases, while the mean adjusted model was rejected in every case. From this study it is clear that, just as Rao & Sreejith (2014) concluded, the market model is the best model.

All these methods of evaluating the impact of mergers and acquisitions have advantages and disadvantages. One of the most obvious differences between the methods is their definition of success, it is not clear whether increased efficiency, better accounting ratios or increase in shareholder wealth as measured by stock prices is the best judge of the success of a merger or acquisition.

Performance studies just like efficiency studies primarily use accounting data. Harrison et al (1991) justified the use of accounting returns as it is not subject to market inefficiency or perception of the market but measures the actual outcome of an acquisition. However it is diffficult to compare accounting returns for companies from different geographical regions across the globe due to differences in regulation and accounting practices. Accounting data does not also take into account the market value of the firm and is open to maninpulation by managers. (Krishnakumar & Sethi, 2012). Further accounting data offers some options on how to treat costs associated with a merger or acquisition transaction and therfore leaves manager leeway to influence them. The usage of accounting data when evaluating mergers and acquisitions should therefore be done with great care (Schiereck & Kolaric, 2014)

Event study methodology is by far the most applied method. Krishnakumar & Sethi (2012) argue that the primary justification of the event studies is that it give a direct measure of shareholder value and is not prone to manipulation. It is easy to measure for listed firms and shows the impact not only of the firm action but also of rivals in the market. However the use of event study assumes capital market efficiency which may not be the case in all markets.

Taking the different advantages and drawbacks into account, all three approaches have their distinctive merits and it will depend on the ultimate goal of the research study as to which one of them should be employed. Schiereck & Kolaric (2014) explain that event studies are the best for

assessing shareholder value creation or destruction.Efficiency studies are appropriate when pre and post-merger efficiency gains are of importance, whilst performance studies can be used to assess the success of a transaction in the long run and to show whether market reactions were justified.

3. Methodology

3.1Research Design

In this study we use Event Study methodology. The basis of event study is to examine the returns derived from stock prices of the relevant firms both before and after the announcement of a merger and acquisition.

3.2 Population of the study

The population of this study comprised of companies listed in the 1) banking 2) insurance and 3) investments Segments of the Nairobi Securities Exchange (see appendix I). All these companies made merger and acquisition announcements in the period 1st January 2001 to 31st December 2015. These companies have been continuously listed and actively trading on the NSE in the period of study. The period of 15 years were considered since it incorporates the changes such as computerization of the NSE processes and new developments in communication technology.

3.3 Data Collection

The research was based on secondary data which was obtained from the Nairobi Securities Exchange and the Capital Markets Authority. The data included name of company, announcement date and share prices (See Appendix I).

3.4 Data Analysis

An abnormal return (residual) is defined as the actual return (determined using arithmetic percentages) less the return predicted by the firm's beta, given the market return. The residual or abnormal return represents the part of the return that is not predicted and is, therefore, an estimate of the change in firm value on a day, which is caused by the event (merger/acquisition announcement). The predicted return represents the return that would be expected if no event took place.

The firm's beta is measured over an estimation period of 120 days prior to the event window and the actual return is measured over a period of 30 days before and after the announcement date (event window of 61 days and announcement date is designated as day 0 in event window) following (Brown & Warner, 1985).

Event window represents possible leakages of information before merger is announced and possible stock price reactions after merger is announced and it finally captures all the effects on stock prices of the event (Liargovas, 2010).

To calculate predicted return, the Market Model Method is used. It is the most widely used method in event study literature because the Market Model takes explicit account of the risk associated with the market and mean returns.

It is estimated by running the following regression:

$$R_{it} = \alpha_i + b_i R_{mt} + e_{it}$$

Where:

R_{mt} is the return on a market index, such as the NSE 20 share index for day t,

α_i Measures the mean return over the period not explained by the market,

b_i Is the beta coefficient which measures the sensitivity of firm i to the market and it is a measure of risk,

e_{it} is a statistical error term, $\sum e_{it} = 0$.

The predicted return for each firm's stock for a day in the event period is the return given by the market model on that day using regression analysis (Ordinary Least Squares), that is:

$$\widehat{R_{it}} = \widehat{\alpha_{it}} + b_i \widehat{R_{mt}} + e_{it}$$

where now $\widehat{R_{mt}}$ is the return on the market index for the actual day in the event period.

We also perform parametric tests as proposed by (Brown & Warner, 1985)for Average Abnormal Returns (AARs) and Cumulative Average Abnormal Returns (CAARs). CAARs represent the average total effect of the event across all firms over a specified time interval.

We examine seven cases of mergers and acquisitions that were completed during 2000-2015 and use t-test and hypotheses:

H_1: AAR $\neq 0$ **H_0 : AAR = 0**

H_1 : CAAR $\neq 0$ **H_0 : CAAR = 0**

The H_0 hypothesis tests if stocks that are affected by the event act will not experience Average Abnormal Returns or Cumulative Average Abnormal Returns and H_1 hypothesis tests if stocks that are affected by the event act will experience negative or positive Average Abnormal Returns or Cumulative Average Abnormal Returns, where each abnormal security return is normalized by its estimation period standard deviation i.e.

$$t_{AAR} = \frac{AAR_t}{S(AAR_t)}$$

The standard deviation is estimated as

$$S(AAR)_s = \sqrt{\sum_{t=1}^{T_0} \frac{\sum AAR_t^2}{T_0 - 1}}$$

where T_0 is the number of days in the estimation period.

The t-test assumes that the individual abnormal returns are cross-sectionally independent and identically distributed. Also we estimate, t-statistic for $CAAR_s$ by dividing $CAAR_s$ with standard deviation:

$$t_{CAAR} = \frac{CAAR_t}{\sqrt{T * S(AAR_t)}}$$

If statistic tests show that t-statistic is higher or equal to a crucial price, then hypothesis H_0 will be rejected which means that AARs or CAARs will be statistically significant.

4: Analysis Results and Discussions

4.0 Introduction

This chapter discusses the analysis of the data used for this study. The analysis and interpretation is based on abnormal returns calculated during the event window. The event window is the period 30 days before and after a merger or acquisition is announced or when it is actually carried out. The dates of the announcement and the actual merger or acquisition transaction are used interchangeably on the basis of data availability Figure 4 shows the list of Mergers and Acquisitions used in the analysis and the respective dates.

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4.1 Event Study Methodology

4.1.1Normalisation of the data

The study uses a period of 120 days before the event window to normalize the data and estimate the betas of each of the companies in the analysis. A period of 120 days before the event window is assumed to be a "normal period that is not affected by information leakages on the merger or acquisition transaction. The table below gives the market model equation for each of the 7 companies and their accompanying betas.

Firm	Market model Equation
centum	$R\_(it\ ) = 0.000388 + 0.7827R\_(mt\ )$
Equity bank	$R\_(it\ ) = 0.595222 + 1.362436R\_(mt\ )$
KCB	$R\_(it\ ) = -0.05689 - 0.08725R\_(mt\ )$
CFC bank	$R\_(it) = -0.07074 + 1.138547R\_mt$
Britam	$R\_(it) = 0.194428 + 0.842726R\_(mt)$
Pan African Insurance	$R\_(it) = 1.274873 - 0.42335R\_(mt)$
Pan African Insurance(1)	$R\_(it\ ) = 0.0783 - 0.02102R\_(mt\ )$

Figure 1

The above equations were used to calculate the expected returns of each of the firms in the event window of 30 days before and after the merger and acquisition announcements.

These expected returns are then compared with the actual return realized by investors during the window period so that we can obtain the abnormal returns. The study calculates the average of

the expected returns for each day in the event window across all firms and also the average abnormal returns (AAR) across all events for each day in the event window.

This is shown by the graph plot below;

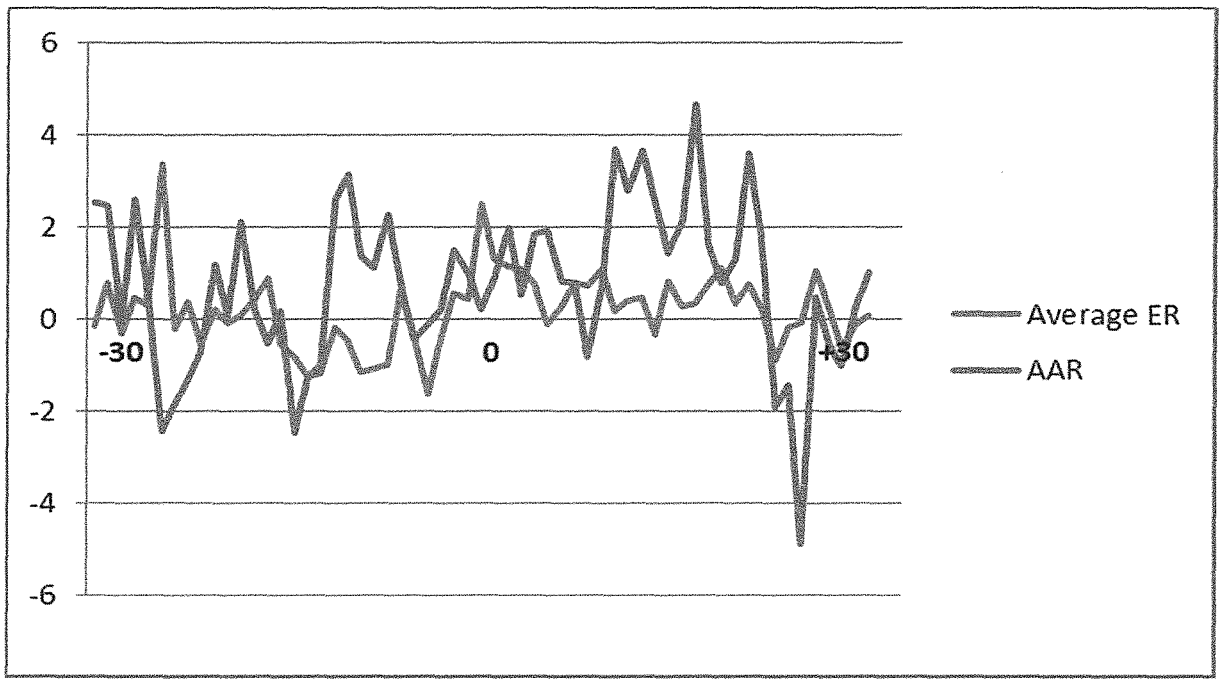

Figure 2

From the above analysis it is clear that significant AARs are realized during the days around the event window. The AARS are negative later in the event window. This is when the market is returning to normality.

The study then analyses the cumulative average abnormal returns of all the events to determine whether the merger and acquisition announcement creates wealth for the investor. We break down the cumulative average abnormal returns into various time periods to determine when most value is created in the event window. The figure 3 below reports Cumulative Average Abnormal Returns (CAARs) for seven merger deals

Figure 3

	CAAR	stdev(CAAR)	t-statistic
[-30,30]	0.3144**	2.5694179	0.1224
[0;+30]	-7.0566	5.6698240	-1.2446
[0;+10]	-9.8025	3.8955240	-2.5163
[0;+1]	5.2574	0.4536748	11.5885
[-10;0]	15.6488	4.4981296	3.4790
[-30;0]	21.1344	5.4078303	3.9081
[-10;+10]	5.8463**	5.2969959	1.1037

**** Insignificant at 95% confidence 1**

We observe that prior to merger and acquisition announcement thirty and ten days before, represented by [-30;0] and [-10;0], the shareholders receive considerable and significant positive cumulative average abnormal returns (CAARs), statistically significant at 95% confidence level. The shareholders realize capital gain of around 21% thirty day before and 15% ten days before hence questioning the "semi-strong form" Efficient Market Hypothesis (EMH) of the Nairobi Stock Exchange. This could also mean that information about the merger and acquisition transaction leaked thus prompting investors to act according to that information way before the announcement date.

Our results are consistent with Liargovas (2010), who found that found that ten days prior to the announcement of a Merger and Acquisition shareholders receive significant positive cumulative average abnormal returns but this does not persist after the merger.

There were significant and negative cumulative average abnormal returns after the announcement date; -9% after 10days and -7% after 30days. The market was adjusting after the increase in prices after the announcement.

5: Conclusions and recommendations

5.1 Conclusion

The purpose of this paper was to examine the impact of mergers and acquisitions on the performance of the Kenyan financial sector over the period 2000-2015, by using the event study methodology. The results from event study methodology, using a 30-day event window indicated that stock prices show significant positive cumulative average abnormal returns (CAARs) before the announcement for a period of ten days and also for a period of 30days. .

5.2 Recommendations

Overall, our results suggest the need to create an institutional mechanism to reduce possible leakages of information before a merger or an acquisition takes place. A possible solution might be the imposition of a lump-sum tax on mergers and acquisitions around the announcement date. The revenue from this tax could be used by the Capital Markets to safeguard the stability of the Financial Sector of the Nairobi Securities Exchange.

5.3 Areas for further Study

This study recommends that further studies to be done on the impact on stock return of the companies listed at the NSE; could include right issue, bonus issues, IPOs, elections, post-election violence, and global economic crisis. This is because this study focused on the impact of merger and acquisition on share return thus, a yearly overview could be an interesting study to identify the effects on company's financial and share performance. Also, other studies on other merger and acquisition on stock return should be done to show clearly the effect of events announcement on merger and acquisition

The study recommends that NSE to establish and enhance policies for investing so as to attract and encourage large institutional and foreign investors to participate at the NSE. The study also recommends that policy makers and regulators at the NSE should encourage more research on the NSE form of efficiency; this will provide a forum for investors to get the information on the form of efficiency of the market and boost their confidence in the operations of NSE.

5.4 Limitations

This study was limited by missing data before 2000 hence we could not capture mergers and acquisition before that occurred before that period. Additionally, the mergers and acquisitions in the NSE do not capture the general effect of mergers and acquisition in the general economy as only 7 transactions took place in the NSE while more transactions took place in the non-listed firms in the financial services industry. This is a research gap for further study.

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Appendice

Figure 4

Mergers or Acquisitions				
No.	Institution	Merged with/Acquired	Current Name	date announced
1	Kenya Commercial Bank	Kenya Commercial Finance Co.	Kenya Commercial Bank Ltd.	21.03.2001
2	Equity Bank limited	Uganda Microfinance Ltd	Equity Bank Ltd	18.04.2008
3	CFC Bank Ltd.	Stanbic Bank Ltd.	CFC Stanbic Bank Ltd.	25.01.2007
4	Britam	real insurance	Britam Insurance	24.11.2013
5	Pan african insurance	Apollo insurance	Pan African Insurance	31.03.2003
6	Pan-africa insurance	Gateway insurance	Pan africa insurance	04.11.2014
7	Centum investments	K-rep bank	Centum Investments	31.07.2014