

**SHORT AND LONG TERM EFFECTS OF CROSS-BORDER-
LISTING ANNOUNCEMENTS ON COMPANIES LISTED AT
THE NSE AND THEIR POST-LISTING PERFORMANCE.**

BY:

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Declaration

This project is my original work and has never been presented for a degree in any other university.

Signed Kuria Harry Mwangi Date Nov. 8, 2007

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

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Dedication

I dedicate this project to my loving family for their continued support and encouragement throughout this program.

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ABSTRACT

This paper investigated the Kenyan stock market response to listing abroad. Using a traditional event study methodology of returns, the paper tested two hypotheses, first, the cross listing announcement effect and second, the post-listing performance of cross-listed firms vis-à-vis control non-cross-listed firms.

To determine the reaction to cross-border-listing announcement, the author examined the average abnormal returns surrounding the announcements of the five cross listings achieved, to determine whether they were statistically different from zero using the t-test statistic.

To examine the post-listing performance of the cross-listed firms vis-à-vis the control firms, selected on the basis of market/price-to-book values, both sets of firms' post-listing average abnormal returns were obtained and tested for significance using the t-test. Also, their post-listing liquidity was examined using the turnover ratio.

In the short-term (7-day) event window, the results indicate that cross-listing announcements have no impact on stock returns, however, in the long-term (61-day) event window, there is reasonable evidence to indicate that cross-listing announcements have a statistically significant negative effect on stock returns.

The results also indicate that cross-listed firms returns outperform those of the non-cross-listed firms with the same market/price-to-book values in both the post-listing short-term (7-day) and long-term (61-day) periods, but the control firms have a higher turnover ratio over the same period.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The major economic phenomenon of the last half of the twentieth century has been the unprecedented wave of direct foreign investment and the growth of multinational business enterprises, which have led to the movement of capital across national borders. Further, the globalization of financial markets has resulted in an increasing number of firms listing their equities not only on their domestic exchange but also on foreign stock exchanges. The East African region has been no exception to this phenomenon, and by October 2006, the region had achieved five cross listings in the three East African bourses by three Kenyan parented firms - East African Breweries Limited, Kenya Airways Limited and Jubilee Holdings Limited.

Although there are costs associated with listing overseas, such as reporting and registration costs, globalization of financial markets is expected to benefit both the cross listing firms and the investors. The cross listing firm can access more sources and most likely cheaper funds, which in turn may reduce its cost of capital with the ultimate effect of increasing its market value, and hence provide increased returns to investors. Further, foreign listing increases the demand for the company's securities by having access to a wider international market. Other things constant, the increased demand should result in increased stock returns.

While it has long seemed logical that a security's liquidity should impact its market valuation, this theoretical and empirical link was not made concretely until

1986, when Amihud and Mendelson documented that infrequently traded (illiquid) stocks have higher risk-adjusted returns than do more frequently traded (liquid) shares. Foreign listing is of interest to the portfolio investor as this may enhance the portfolio return and reduce the risk associated with a portfolio consisting of a cross-listed firm's security. Other than the financial benefits and costs, listing overseas also provides such firms with strategic, political, marketing, and operational benefits.

The number of companies listed in multiple stock exchanges continues to increase at a drastic rate as global equity markets become both more integrated and more competitive. There is growing interest in the trading behavior of the 2300 stocks cross-listed worldwide. For example, the cross-listed stocks of 460 companies accounted for 10.5% of New York Stock Exchange (NYSE) trading volume in 2004 (Karolyi, 2004).

Over the course of the last decade a number of studies have sought to answer whether cross listing is value enhancing. These studies have used one of two general framework; either announcement returns (Switzer, 1997; Miller, 1999; Mittoo, 2003;) or post-listing valuation metrics (Karolyi, 1998; Doidge et al. 2004;). While these studies have shown that the benefits to cross listing differ cross sectionally across different countries and over time, no study has been done to follow through the effect on returns caused by the cross listing announcement and the subsequent post listing performance of cross listed firms as compared to non-cross listed ones of the same size at the Nairobi Stock Exchange (NSE).

Subsequently, since the numbers of cross listing events under consideration are few, the goal of this paper will be two fold. Using a population of cross listed firms and a sample of control non-cross listed firms at the NSE, the research draws on previous empirical studies that document that cross border equity listing announcements have implications for the listing firm, and on studies based on

the post-listing performance of cross listed firms in comparison to non-cross listed firms of the same size.

By combining the two sets of studies, the paper seeks to determine the information effect of the cross border-listing announcement and the subsequent post-listing performance of cross listed firms vis-à-vis non-cross listed firms.

Traditionally, these studies employ event-study methodology in which a benchmark model of return is used to generate abnormal returns for each stock. Most research in this area concerns the market behavior around cross-border-listings and managers who are concerned with the effects of their decisions to obtain foreign listings on shareholders wealth use the share price effect as the primary gauge. For this to hold, the market in which the study is undertaken is assumed to be informationally efficient. A number of researchers have suggested that information flow plays an important role in a listing decision. They suggest that valuation changes around cross listings for firms and valuation differences between firms that choose to list in overseas markets and those that do not has less to do with barriers to investment and more to do with changes or differences in information flows.

Event studies, introduced by Fama et al. (1969) produce useful evidence on how stock prices respond to information. Many studies focus on returns in a short window (a few days) around a clearly dated event. An advantage of this approach is that because daily expected returns are close to zero, the model for expected returns does not have a big effect on inferences about abnormal returns. The assumption in studies that focus on short return windows is that any lag in the response of prices to an event is short-lived. However, there is a developing literature that challenges this assumption, arguing instead that stock prices adjust slowly to information, so one must examine returns over a longer horizon to get a full view of market efficiency Fama (1997). Therefore, in the context of this paper, both the studies on announcement returns and post-listing

performance will each have a sixty-one (61) day event window allowing the study to capture the stock price reaction a few days after the event (short run) and in the weeks/ month following the event (long run) before other confounding influences arise that may affect the stock price.

An informationally efficient market is one in which information is rapidly disseminated and reflected in prices. When the market is efficient, resource allocation will be efficient, because capital is channeled into the best uses, and securities prices can serve as a guide for the evaluation of corporate policies and decisions. Fama presents three degrees of information processing efficiency based on how much of the available public and private information market prices are expected to reflect. The three forms are: Weak Form Efficient Market Hypothesis, Semi Strong Form Efficient Market Hypothesis and Strong Form Efficient Market Hypothesis.

The greatest amount of research in finance has been devoted to testing the semi strong form of efficiency; others have tested share price sensitivity to other events. Examples of these studies include stock split studies, initial public offering, exchange listing, announcement of accounting changes, dividend announcements, world events and myriad other internal and external financial events.

1.2 Cross-Border-Listing in Kenya

In March 1997, a Memorandum of Understanding was signed between the capital markets regulatory authorities of Kenya, Uganda and Tanzania under the auspices of the Secretariat of the Commission for East African Co-operation that led to the creation of the East African Securities Regulatory Authorities (EASRA) (Rutega 1999). The main objective of EASRA is to formulate a framework for technical co-operation and mutual assistance in the development of capital

markets in East Africa. The ultimate objective of the East African Co-operation initiative is the establishment of a single market and investment community. Article 80 of the East African Treaty signed in November 1999 provides for among other things, the harmonization of capital markets policies. With the positive progress under EASRA and the individual Stock Exchanges initiative, there are five cross listings in the region by three Kenyan based companies at the moment – East African Breweries Limited, Kenya Airways Limited and Jubilee Holdings Limited.

The first cross border listing in the East African markets occurred with the cross-listing of East African Breweries Limited (EABL) on the Uganda Securities Exchange (USE) on 27th March 2001. While listing at the USE, EABL hinted at chances of cross-listing on the Dar es Salaam Stock Exchange (DSE) as soon as was possible. However, this was hindered by the stringent capital transfer restrictions in Tanzania. The listing of EABL at the DSE came to pass on 29th June 2005 making it the second Kenyan-based company at the DSE after Kenya Airways (The Daily Nation 28th June 2005). Founded in 1922, EABL is presently a public limited liability company incorporated under the laws of the Republic of Kenya with 150 million authorized ordinary shares of KShs.10, and was first quoted on the NSE in 1972.

Kenya Airways was the second Kenyan-based company to be cross-listed on the USE on 28th March 2002. Kenya Airways continued in its pursuit of cross-listing and was able to overcome the restrictions on foreign exchange transfers in Tanzania and managed to list its shares on the DSE on 1st October 2004 (The Daily Nation 28th June 2005), becoming the first company to have its shares traded in all the three East African markets. The decision to cross list Kenya Airways shares was made as part of the company's pursuit of its strategy to be a major player in the African region. This move enhanced the company's profile both regionally and internationally. Incorporated in 1977 as a company wholly owned by the Government of Kenya, Kenya Airways is presently a public limited

liability company with 1 billion authorized ordinary share of KShs 5, and was first listed at the NSE in 1996 in the biggest share offering in Kenya's history at the time, which was oversubscribed by 82%.

Jubilee Holdings shares were cross-listed at the USE on 14th February 2006 making it the third Kenyan parented firm on the Ugandan Bourse. Jubilee Holdings however was the first company to cross-list at the reduced charge of \$5000 approved by the Capital Markets Authority to encourage more companies to do so (The East African 20th February 2006). Jubilee Holdings is currently a public liability company that was listed on the NSE in 1984 with 36 million authorized ordinary shares with a par value of Kshs. 5. With the positive progress under the EASRA initiative, more companies are expected to cross list in the near future.

1.3 Statement of the Problem

In 1997, the East African Governments through the market regulatory authorities embarked on making cross border listing of firms within the region more attainable by creating EASRA. Managers concerned with the effects of their cross-border-listing decisions on shareholders wealth use the share price effect as the primary gauge. Studies in this area are concerned with the market behavior around listing announcement and post listing performance and traditionally employ event – study methodology.

Studies on market reactions to cross-border-listing announcements on share prices have been done by Switzer (1997) for Canadian listings on the U.S markets, Miller (1996) for a sample of smaller non-U.S. firms on the U.S. markets and by Lau et al (1994) for U.S firms listing in other stock exchanges. Studies concerned with the post-listing performance of firms have been done in numerous countries by Switzer (1986) for Canadian listings on the U.S markets,

Alexander et al (1988), Foerster and Karolyi (1993, 1996), Miller (1996), Jayaraman et al (1993), Viswanathan (1996) for non – U.S listings on the U.S markets, Ko et al (1997) for Japanese listings on the US markets, Howe and Kelm (1987) for NYSE listings on London and Toronto Stock Exchanges, Varela and Lee (1993a) for U.S listings on the London Stock Exchange, Varela and Lee (1993b) for U.S listings on the London and Tokyo Stock Exchanges, Torabzadeh et al (1992), Damodaran et al (1993), and Rothman (1995) for U.S listings in other stock exchanges.

Overall, the studies done on market price reactions to cross listing announcement and those studies on post-listing performance both agree that share prices react favorably to the corporate decision to list abroad hence supporting the semi strong form of market hypothesis. Evidence indicates that there are abnormal returns around the announcement dates and the companies experience an increase in market value in the month around the listing. One strand of the literature attempts to explain price behavior around cross-border-listing decisions in terms of changes in the underlying risk exposures of the company's, which in turn, results in changes in required returns. The second and newer strand of literature attempts to explain price effects in terms of liquidity changes that accompany a cross border listing. In this context, liquidity may be taken to denote how much investor interest and attention a specific stock has. Most evidence suggests that cross listing enhances the liquidity of trading in the stocks in the home market.

The post-listing price performance, however, varies widely across companies and for many stocks the initial increase in price dissipates over the next year (Karolyi 1996). The most pronounced result obtained for non- U.S companies listing in the US is an annualized 12% return in the first week on average. By contrast, price effects of US companies listing in Toronto, Tokyo or European exchanges appear to be negligible (Karolyi 1996). The significant post-listing returns decline of the cross-border listed stocks remains unexplained. Most

studies attribute this effect to managerial timing or the fact that listing companies tend to be larger, and more mature companies.

These studies were conducted in developed nations whose environment differs from that of developing nations. Developing nations tend to have less organized and structured capital market activity and are characterized by lower levels of savings and investments and under-developed financial systems unlike the developed ones which have a higher level of informational efficiency.

Evidence regarding the direction and magnitude of the post-listing price effect of cross-border listings is mixed and studies covering the U.S and non- U.S listings have come up with inconclusive results. The disparity on the post-listing price performance for different markets makes further research potentially useful to establish the case for Kenya.

This study therefore examines whether stock prices of companies listed at the NSE react to cross listing announcements, and if they do the direction of the reaction, and what their post-listing performance is vis-à-vis non-cross listed control firms and any liquidity changes such firms' experience.

1.4 Objectives of the Study

- [i] To determine whether stock prices adjust to cross border-listing announcement and the direction of the stock price adjustment.
- [ii] To examine the short and long run post-listing performance of cross-listed firms vis-à-vis non-cross listed firms.
- [iii] To examine the post-listing liquidity in the domestic market trading of the cross-listed firms.

1.5 Hypotheses

Null hypothesis one stated that the average abnormal returns surrounding cross border listing announcements had no impact on stock returns while the second null hypothesis stated that the post-listing performance of cross-listed firms did not exceed that of non- cross-listed firms.

1.6 Justification of the Study

More companies these days are choosing to raise equity capital globally and those in the East African region are no exception. To facilitate this process, these companies are listing their shares in foreign bourses. The finance, accounting and international business literature on cross-border listings of stocks is as recent as the phenomenon and is growing just as quickly.

In Kenya, the first cross border listing was in March of 2001 despite the fact that the NSE was established in 1954. Unfortunately, no studies have been done on cross border listing in Kenya to guide other locally listed companies on the possible effects of cross-border listing on share holders wealth as it evolves in the country and the East Africa region under the EASRA initiative. Previous studies have been conducted in developed nations whose environment differs from that of developing nations. Developing nations tend to have less organized and structured capital market activity and are characterized by lower levels of savings and investments and under-developed financial systems unlike the developed ones which have a higher level of informational efficiency which makes further research potentially useful to establish the case for Kenya.

Further, evidence regarding the direction and magnitude of the post-listing price effect of cross-border listings is mixed and studies covering the U.S and non- U.S listings have come up with inconclusive results. The research could also form a

useful foundation for further research in this area when Kenyan firms have a greater presence in foreign bourses.

1.7 Importance of the study

This study takes our local environment as the testing ground. Kenya has got an expanding corporate sector with listed firms and a growing need for more firms to have their shares traded in foreign bourses. This study is important to various interested parties:

[i] Management of Companies

Management of a firm with cross-border-listing uniquely differs from a uninationa firm in that the fund flows occur in a variety of currencies, and in a variety of countries having distinct legal, political, social and cultural characteristics. These currency and country differences, in turn, create risks unique to firms with cross-border-listings hence eventually affecting share prices in the domestic capital market. There is need for management to be aware of these differences and how their cross listing decisions affect the shareholders wealth. Managers of companies considering cross listing may use the study to gain an insight into the direction and magnitude of movement of the share prices of same size portfolio companies which are already cross-listed.

[ii] Investors

The study will give investors useful information concerning the likely price performance of a common stock before, during and following a cross-border-listing announcement and the performance of the stocks after the actual cross

listing. This may assist them to decide on whether to hold, sell or buy the company's stock.

[iii] Stock Market Regulators

The study could also provide useful information to the East Africa markets' stock regulators that could enable them formulate policies that could lead to greater capital market integration within the region. Well-formulated policies could effectively create a more conducive investment atmosphere for both investors and listed firms in the region.

[iv] Academicians

The study may serve as a secondary data source as further research needs to be done on cross-border-listings when a greater presence of Kenyan firms exists in other foreign bourses.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Market Efficiency

Market efficiency is a dominant micro-economic goal, because an efficient market provides the correct resource allocation decisions and economists are concerned with how correctly and timely new information is captured and transmitted into the resource allocation mechanism. A market in which prices always "fully reflect" available information is called "efficient" (Fama 1970).

Fama defines market efficiency in terms of the speed and completeness with which capital markets incorporate relevant information into security prices. In an informationally efficient market, security prices incorporate all publicly – available information about a company's products, profits, management quality and prospects, and if important new information about the company is publicly announced, prices will instantaneously change to fully reflect the impact of this new data.

Fama presents three degrees of information processing efficiency, based on how much of the available public and private information market prices are expected to reflect. The three forms are: Weak Form Efficient Market Hypothesis, Semi Strong Form Efficient Market Hypothesis and Strong Form Efficient Market Hypothesis.

(i) Weak Form Efficient Market Hypothesis

In a weak form efficient market, security prices incorporate all relevant historical information and there is nothing to be gained by studying past trends in security prices because there is no prediction that can be drawn from them about the future course of price changes. Since prices are “memoryless”, they are unforecastable and will only change in response to the arrival of new information (Samuelson 1965).

Weak Form Hypothesis Tests

Since most of these studies examine whether asset price changes can be predicted using historical information, Fama refers to these as tests for return predictability and classifies these tests into three:

First, as tests of simple trading rules based on very recent stock returns, the day of the week, or the month of the year, Secondly, as tests for short-horizon (weekly or monthly) return predictability based on the observed positive correlation in short-term returns and thirdly as tests for long-horizon return predictability based on the negative correlation observed over longer (2-3 year) return horizons.

Simple Trading Rule Tests

(Kendall, 1953; Roberts, 1959 ;) all document that subsequent stock price changes are essentially uncorrelated with each other. This lack of persistence in price trends means that a strategy of buying recent winners and shorting recent losers would not be profitable.

Fama and Blume (1966) test a number of more sophisticated filter rules – such as, “buy a stock after it has increased by x percent, and don’t sell it until it has

decreased by y percent" - and report that none of these strategies yields significant profits, particularly after trading costs are accounted for. Numerous asset pricing "anomalies" have been identified in stock return data and these include the day-of-the-week (Monday) effect identified by Gibbons and Hess (1981), the small-firm effect identified by Banz (1981), and the January effect identified by Keim (1983). In all the three cases, expected returns are reported to vary in a systematic way that seems ideally suited to exploitation by a trading strategy. However, the consensus within the profession is that such trading strategies do not yield excess profits for such reasons as transaction costs and use of an incorrect pricing model.

Tests for Short-Horizon Return Predictability

Most of the published research on short-horizon predictable returns tends to fall into one of two categories. First, several studies have tested whether stock prices follow a random walk, and then examine the underlying causes of the deviations documented. A second group of studies called tests of mean reversion, test the ability of investors to profit from the perceived tendency of stock prices to "overreact" to news or events, and then to revert back to equilibrium price levels over several months' time.

Lo and MacKinlay (1988) develop a unique and innovative method of testing for serial correlation in stock returns and report that weekly stock returns are positively correlated, and thus reject the random walk hypothesis. Lo and MacKinlay (1990 b) also report that less than 50% of the profit from a buy recent losers and short recent winners investment strategy is due to overreaction.

Conrad et. al. (1991) examine the positive autocorrelation patterns in weekly and monthly stock returns. They document that up to 24% of the variation in weekly security returns can be explained by positively autocorrelated expected returns, a negatively autocorrelated component induced by bid-ask spread errors, and a random variation component.

DeBondt and Thaler (1985) have carried out a test of market overreaction and indicate that portfolios of prior extreme "losers" dramatically outperform prior extreme "winners", even though the latter are more risky. They report that the effect cumulates to the point that, 36 months after portfolio formation, the prior period losing stocks have earned 25% more than the winners. However, Roll (1994) a multi-billion-dollar mutual fund manager has shown that real trading strategies based on the above anomalies, do not yield excess returns and hence their negative impact on the Efficient Markets Hypothesis is not likely to be great or lasting.

Long-Horizon Return Predictability

Numerous studies document two features about long-horizon returns. First, there is a significant negative autocorrelation in return intervals of between two and five years. Second, the predictable component in the total variation of returns increases with the return interval. These patterns are documented by (DeBondt and Thaler, 1985; Poterba and Summers, 1988; Fama and French, 1988a ;) while Reichenstein and Rich (1994) discuss how investors can attempt to exploit this predictability in their own investment portfolios.

Fama and French (1988a) document negative autocorrelation in returns beginning at about a two-year lag, with the minimum co-efficient values being reached for 3-5 year horizons, before moving back towards zero for longer horizons. The size of these negative coefficients suggests substantial predictability in returns – estimated to be about 40% of total return variance for small firms for the 3-5 year horizon and about 25% for larger firms.

On the other hand, Ball and Kothari (1989) cast doubt on the anomalous nature of negative serial correlation in long-horizon returns. They find this negative autocorrelation is due almost entirely to variation in relative risks, and thus expected returns, through time. Their results support market efficiency, in that

the expected returns on riskier stocks should increase after firms have experienced negative stock returns and decrease after firms have enjoyed positive returns. This pattern of falling stock prices (negative returns) followed by very high (required) realized return would manifest itself as "predictable" negative correlation in long-horizon returns, even though it actually resulted from rational pricing behavior by investors in an informationally – efficient capital market.

(ii) Semi-Strong Form Efficient Market Hypothesis

In a semi-strong-form efficient market, security prices reflect all relevant, publicly available information. This is stronger than weak form efficiency, in that it predicts that security prices will always reflect relevant historical information, and will react fully and instantaneously whenever new information is revealed in a public medium. This hypothesis implies that investors who base their decision on important new information after it is public should not derive above average profit from their transactions because the security price reflects all such new public information.

Semi-Strong Form Hypothesis Tests

Fama (1991) suggests that tests of the semi-strong form of the EMH be categorized as tests of the rapid adjustment of prices to new information. Tests of the semi-strong form of the EMH are grouped into two main categories: - Event studies and tests of rational information processing.

Event Studies

Event studies examine whether stock prices instantaneously and fully incorporate new information into asset prices. They have emerged as the single most important tool of empirical finance research due to their ease of use, clarity of purpose, flexibility, and absence of confounding influences (Megginson 1997).

Event studies have several strengths. First, by averaging out random noise over many different observations, a researcher is able to gain an unbiased assessment of how stock prices react to a given event. Additionally, by determining the number of positive and negative abnormal returns that went into the overall average, the researcher is able to determine if the average values are being driven by a small number of large abnormal returns or if most stocks are reacting in the same way. Second is that the joint hypothesis problem is effectively finessed by the event study methodology, since the method for computing expected returns typically has very little impact on the actual abnormal return computed. Third, event studies provide a direct test of semi-strong-form market efficiency, since they allow one to determine if information is incorporated fully and instantaneously into stock prices.

The very first event study by Fama in 1969 examined the stock market response to stock splits. Mbugua (2004) examines the information content of stock dividend announcements, Njoroge (2003) examines stock market response to six rights issues at the NSE and Njogu (2003) examines the price impact of commercial paper issue announcement at the NSE and concludes that the NSE is in the semi-strong form of efficiency. Other event studies have been done to advance understanding of how stockholders view initial public offering, exchange listing, announcement of accounting changes, takeover bids, world events and myriad other internal and external financial events. Dozens of studies confirm that share prices react rapidly to announcements, and in expected ways where the direction of the price change and the likely impact are clear. Consequently, many researchers accept that information is rapidly incorporated in share price, and use event studies to determine what information is reflected in prices, and if its impact is unclear, to determine whether the announcement is good or bad news.

Test of Rational Information Processing

In addition to event studies, numerous researchers have examined whether financial markets process current information in a rational and rapid manner. Taken together, these studies provide indirect evidence largely supportive of semi-strong-form market efficiency.

French and Roll (1986) examine how markets process information during trading versus non-trading periods. They report that the per-hour variance of stock returns during a normal trading day is 72 times that of a normal weekend. They also report that only 4 to 12 percent of the daily return variance is due to mispricing and that little of the difference in variance is the result of the arrival of more public information during business hours than over week-ends. French and Roll instead determine that the higher variance during periods when the exchange is open is caused by private information being revealed in stock prices through the trades of informed investors.

Brown et. al. (1988) test an uncertain information hypothesis to determine whether stock prices respond efficiently to the arrival of unanticipated information. They report that following news of dramatic financial event, both the risk and expected return of the affected company's stock will increase systematically, and that prices will react more strongly to bad than to good news and they conclude that this is how rational, risk-averse investors should act. Their empirical results support the uncertain information hypothesis and also semi-strong-form market efficiency.

Pound and Zeckhauser (1990) examine whether stock market participants rationally respond to rumors about potentially important events. They study the response to takeover rumors published in the 'Heard on the Street' column of the Wall Street Journal, and find that the market responds efficiently - a simple trading rule based on buying rumored takeover targets yields no excess returns.

Dhillon and Johnson (1991) examine whether positive stock price response for a company when it is chosen for inclusion in the Standard and Poor (S&P 500) list is compatible with market efficiency. As had earlier researchers, they report a positive stock price effect upon inclusion announcement and support the notion that inclusion of a firm by S&P in its premier index reveals positive new information about a company to market participants.

The evidence from tests of rational information processing coupled with the earlier event study results, suggests that financial markets that respond very rapidly and completely to new information exhibit semi-strong form informational efficiency.

(iii) Strong – Form Efficient Market Hypothesis

In a strong-form efficient market, security prices reflect all information from public and private sources. The strong form EMH encompasses both the weak form and semi-strong form EMH. In strong-form efficient markets, most insider trading would be unprofitable, and there would be no benefit whatsoever to ferreting out information on publicly – traded companies, since any data morsel so obtained would already be reflected in stock and bond prices.

Research indicates that strong form efficiency does not hold in real world financial markets. The clearest evidence of this is the finding that corporate insiders (officers and directors) can and sometimes do earn excess profits from trading on information about unexpected changes in corporate earnings, dividends and investment policies before these are publicly announced. Outside investors who try to mimic insider traders after these are publicly announced earn only normal returns (Seyhun 1986).

2.2 Market Price Reactions

2.2.1 Market Price Reactions Around Foreign Listings in the US.

The growth in the demand for equity financing has spurred increased cross-border listings as individuals and institutions invest their funds in foreign equities to diversify their portfolios and to earn higher risk adjusted yields. Cochrane et al. (1996) reports that at the end of 1995, non – U.S. stocks in US pension and endowment funds comprised 12% of all equity holdings totaling about US \$325 billion, a fourfold increase from 1990. In Britain and Japan, these figures have reached 19.5% and 13% respectively (The Economist 7th Oct. 1995).

The largest contingent of cross-border-listings exists on the London Stock Exchange. The 531 listings of 2,500 total traded issues comprise 54% of London's annual turnover of US \$ 4.5 billion. US markets attract the next largest contingent of overseas stocks with 362 issues on NASDAQ and 247 listing on the NYSE. Though trading in these issues as a fraction of total turnover is, by comparison modest at 3.4% and 8.5%, respectively, the dollar volume that this represents is comparable at US \$1.36 billion (Financial Times 10th Nov. 1994).

It is not surprising that the first study by Switzer in 1986 focused on 25 Canadian listings on the NYSE between 1962 and 1983. He reports that prices rise following listing with a statistically significant 11% abnormal return in the first 60 days. In 1997, Switzer updated his earlier study of Canadian cross-listings in the US for 79 companies listing between 1985 to 1996. He now focused on the market reactions around announcement dates instead of listing dates. Delays between application, acceptance and listing may be significant and may compromise the tests with conflicting announcements effects. The listing application may be important if the market interprets this announcement as a signal about management's confidence about the prospects for the company's global operations. Alternatively, the exchange regulators' acceptance of the

application may convey a positive signal in terms of certification of the company's financial credentials for listing. Switzer reports that there are large pre-listing abnormal returns partly because they included significant market price increases due to the announcements, which could occur as much as 90 days earlier. He also identifies a significant relationship between the market reaction around listing announcement dates and the proportion of total trading volume captured by U.S. exchanges after listing.

Alexander et. al. (1988) analyze 34 non-US listings in the US employing Switzer's sample as a benchmark and report only a negligible reaction during the listing month and a surprising post-listing decline of up to 26% over the next three years. More surprising still is the contrast between Canadian (4% decline) and non-Canadian (13% decline) listings. The researcher associates the market reaction to the extent to which different capital markets are segmented or integrated with the US.

Foester and Karolyi (1993) examine the Canadian sample of stocks for listings through 1992 and demonstrate that Canadian stocks experience similar declines to the non-Canadian stocks (about 11%) over the year following listing. Furthermore, they find that the post-listing decline is unrelated to liquidity effects because the results are robust across the three U.S. exchanges considered.

Jayaraman et. al. (1993) examine 95 non-US first time US listings between 1983 and 1988 and report an economically insignificant 0.33% increase during the listing month. Viswanathan (1996) evaluates the returns performance of a more recent sample of 20 Canadian, Australian and Japanese listings in the US and reports a surprising negative pre-listing period return of -3.85% , a negative listing return of -0.79% and a further negative post-listing decline of -2.44% .

Ko et. al. (1997) study a small sample of Japanese listings on US markets and demonstrate the robustness of earlier findings of positive abnormal returns

around listing to observed shifts in the conditional volatility of the returns around the listing.

Miller (1996) examines a sample of smaller firms traded over the counter (OTC) between 1985 and 1995. He reports that the abnormal returns around the announcement dates were significantly positive at 1.21% while no market reaction around the listing date was found. The difference between announcement and listing date abnormal returns were much smaller economically than the difference observed by Switzer in 1997 for the Canadian listings.

2.2.2 Market Price Reactions Around US Stocks Listing Overseas

A number of studies have analyzed the price effect for US companies' announcements to list abroad and several others on their performance after successfully cross listing. The trading volume in these issues, however, is typically very small relative to US trading.

Howe and Kelm (1987) examine 165 NYSE stocks listing in Canada and European exchanges between 1969 and 1982. They report a statistically weak but surprisingly negative 12.5% annualized return during the first 40 days following listing.

(Lee, 1991; Torabzadeh et. al., 1992; Damodaran et. al., 1993; Varela and Lee, 1993a; 1993b; Lau et. al. 1994; Rothman, 1995 ;) have carried out studies of U.S listings overseas and all report either slightly positive or neutral reactions in the listing month.

Lau et. al. (1994) examine the different stock market reactions to the listing, application announcement and acceptance events for U.S companies listings on

overseas markets, similar to the event studies of Switzer in 1997 and Miller in 1996 for foreign companies listing in the U.S. Lau et. al. report that the most dramatic market reactions occur on the first trading day and not on the announcement of application or acceptance dates. He further reports that the information value of an application announcement by U.S firms listing abroad or the certification value of an application acceptance by the local securities regulator are considerably smaller than for non- US companies announcing listings in the US.

Finally, Rothman (1995) concludes that the abnormal returns of over 265 US listings abroad are small, but quite robust to different risk – adjustments, thus offering reassuring evidence of the integrity of earlier findings.

2.3 Explanations of the Price Behavior Around Listings

Earlier studies (Ule, 1937; Ying, 1977; Sanger and McConnell, 1986;) of pure domestic listings from NASDAQ and AMEX to the NYSE uncovered a post-listing decline in returns similar to that identified for cross-border listings. These studies evaluated several hypotheses for this phenomenon, including; outlier observations and biases in initial listing prices, loss of market maker support for newly-listed stock, price pressure due to new issuance of stock following listing, selection biases in management timing their listing to follow good performance, “insiders” of newly – listed issues dumping stock; and life-cycle biases in which large, mature, non-growth-oriented companies are the only companies that can qualify for listing. Sanger and McConnell (1986) and more recently Dharan and Ikenberry (1995) argue most aggressively in favor of the management timing idea, which appears now to be the consensus of the literature (McConnell et al 1995).

Dharan and Ikenberry (1995) show that the post-listing drift is not observed for large firms at all, but rather for smaller, less established firms, for which listing requirements are more likely to be binding. This is consistent with the findings of Nash et. al. (1997) for the large share issue privatizations.

For cross-border listings, only a few empirical studies have offered explanations for the price behavior. Alexander et. al. (1988) proposes that the price decline for non-US companies listing in the US is associated with the elimination of the investment barriers, since the price declines are more dramatic for companies from markets that are more likely to be segmented from the US. Foerster and Karolyi (1996) offer some evidence that post-listing price declines are related not to country of origin but to the same factors that affect the positive pre-listing and listing week price increases. They specifically report on how the share price reactions are related to increases in the shareholder base, industry group membership and affiliations. They report that the post-listing price declines appear to be related to company specific factors and this may imply that the declines may not be caused by the listing decision itself, and in fact, may have been exaggerated had the listing not taken place.

2.4 Managerial Implications

Share prices have been reported to react favorably to the corporate decision to list abroad. However, the most pronounced results obtained for non-US companies' listing in the US is an annualized 12% return in the first week on average. By contrast, price effects of US companies listing in Toronto, Tokyo or European exchanges appear to be negligible (Foerster and Karolyi 1996). The significant post-listing returns decline of the cross-border listed stocks remains unexplained. Most studies attribute this effect to managerial timing or to the fact that listing companies tend to be larger and more mature companies.

The event of listing or announcement of the intent, in and of itself does not necessarily propagate the decline. Other implications of the cross-border listing decision that have been identified and are worth managements attention are: -

Cross Border Listings and a Stock's Risk and Cost of Capital

A cross-border listing of stock may change its risk characteristics. If the change occurs in its systematic, non-diversifiable component, it may change a company's cost of equity capital. For cross-border listings, the systematic risk may comprise the firms' exposure to stock market risk not only in its home market, but also in the overseas market in which it lists. Moreover, the company's value may also incur greater systematic exposure to fluctuations in foreign exchange rates or other factors. These extra-market factors may yield important differences in required returns among stocks. Most studies measure risk changes relative to a stock's market beta in its home country and relative to its total variance of returns around the listing. Assessments of the cost of capital are typically done in the context of asset pricing models.

Researchers are interested in the cross-border listing of stocks because it circumvents many of the regulatory restrictions, costs and information problems that represent barriers to cross-border equity investing. To the extent that these barriers influence how securities are priced in their respective markets, researchers can evaluate the degree to which international capital markets are segmented or integrated. Stapleton and Subrahmanyam (1977) and Alexander et. al. (1987) in particular, report on how the cross-listing of shares across two segmented markets would lead to a higher equilibrium market price and a lower required return. If markets are segmented, the compensation for market risk will be different across those markets and, in turn, for individual stocks in those markets. For companies in markets with prohibitively high investment barriers, the higher price for market risk will necessarily translate into a higher cost of capital. The managers of these companies then have every incentive to adopt

policies to mitigate the negative effects of international diversification by dually listing shares on overseas exchanges.

Cross Border Listing and the Signaling Model

Cantale (1996) has developed a signaling model where firms, trying to communicate their private information regarding their quality to outside investors, choose a particular market where to list their shares. Markets are assumed to differ in terms of the level of information disclosure, which Cantale interprets as a measure of quality and quantity of information requested by each stock market to qualify for listing. Since higher levels and quantities of disclosure increase outside investors' abilities to monitor managerial actions, the markets will value such firms higher but at the expense of management's private benefit of control. The key difference in Cantales' model to that of Alexander et al. (1987) is that changes in expected returns around the listing decision are less to do with market segmentation and more to do with changes in information flows.

Cross Border Listing and Liquidity

Market surveys (Mittoo, 1992b;) indicate that managers of overseas companies indeed cite increased trading liquidity (28% of respondents) as a primary factor in their decision to list in the U.S. Typically, stocks experience an increase in total trading volume and a decrease in home market spreads, due in large part to the competition from the new market. The extent of liquidity enhancement, however, depends on the proportion of the total trading volume the new market captures and the trading restrictions imposed on foreigners in those stocks prior to listing. Liquidity of an individual stock may be considered as how much investor interest and attention a particular stock gets. Liquidity effects are measured in terms of a reduction in the bid ask spread, an increase in trading volume, shifts in the shareholders base, and an expansion of trading hours within the twenty four hour period.

Foester and Karolyi (1996) studied patterns in post-listing volume of 52 Canadian Stocks listing in the US. They reported that sample trading volume (in US and Toronto Stock Exchange) increased by an average of 29% of these stocks. Moreover, the trading volume on the Toronto Exchange itself increased by 5 %.

By extending the earlier work of Foester and Karolyi, Hargis (1996), finds that the impact of listing by Latin American Stocks in the US is favorable for the domestic exchange. He reports domestic ratios of the market value of trading volume range average 1.71. Korn (1996) examines 26 Mexican issues and finds a weak but negative impact on domestic volume upon listing with the NYSE retaining 50 to 60% of order flow within three months.

Cross Border Listing and Disclosure Requirements

Given the advantages of overseas listings, one may naturally ask what inhibits more companies from listing abroad. Much of the evidence on disclosure requirements is drawn from surveys of Chief Finance Officers and Corporate Treasurers on case-oriented studies. The overriding conclusion from the surveys is that though the direct legal and accounting costs can be substantial and the listing requirements for overseas companies stringent, managers universally cite the additional disclosure requirements as the greatest challenge.

Biddle and Saudagaran (1994; 1995) specifically study the role of disclosure on management's decision to list abroad. They constructed a scale that related the level of required disclosure, based on the findings of earlier surveys of comparisons of international accounting and disclosure requirements. They report this scale variable to be a statistically significant determinant of whether a company lists in a particular country. They conclude that it is stringent disclosure requirements that inhibit cross-border listings.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

Most research in this area concerns the market behavior around listing announcement and post-listing performance. Traditionally, these studies employ event–study methodology.

3.1 Methodology of Event Studies

The methodology of event studies is fairly standard and proceeds as follows (Elton and Gruber 1995);

(i) Collect a sample of firms that had a surprise announcement (the event).

The population of this study consisted of firms that are parented in Kenya, are listed at the NSE and have initiated and succeeded in listing in another foreign bourse for the period between 2001 and March 2006. The study considered the five cross-border- listings that have been achieved so far at the USE and DSE - three at the USE and two at the DSE as the events under consideration.

(ii) Determine the precise day of the event and designate this day as zero.

(a) Announcement period returns

The date the company announced to the public its intention to be cross listed through a public medium such as the media, government documents or launch ceremony (not when its shares were actually being traded in the foreign bourse), along with other relevant information such as whether it would be a primary or

secondary issue and managements reasons for taking the decision, was taken as the announcement date and designated as event day zero ($t = 0$).

(b) Post-listing period performance

The date the company's shares were actually offered for trading at the foreign bourse was the date designated for comparison of the post-listing performance. In determining the control firm to be used in comparing post-listing performance, the market/price-to-book ratio was used (Appendix 3). Firms that eventually succeed in cross listing tend to be distributed in the higher size and market-to-book ratio quintiles and are the first target for new services. The market/price-to-book value ratio was used because it is a relative measure of how the growth option of a company is being valued vis-à-vis its physical assets. The greater the expected growth and value placed on such, the higher this ratio.

$$\text{Market/Price-to-Book Ratio} = \frac{\text{Share price}}{\text{Book Value per Share}}$$

(iii) Define the time interval to be studied.

(a) Announcement period returns

The time intervals relative to the announcement event were thirty days before the event, the event day and thirty days after the event leading to a sixty-one (61) day event period. This is because it was assumed that before the announcement date, there might be some information leakage by those with access to it, and after the announcement, there might be some delayed reaction.

(b) Post-listing period performance

The time interval for examining the post-listing performance was sixty-one (61) days/ (2 months); event day and sixty days after the event. This was because, previous studies provide evidence that cross border listings result in positive and significant returns and increased liquidity for the cross listing firm during the first few months (Karolyi 1998). Event studies can be performed using either daily or

monthly stock returns, however the precision of daily event studies is far greater and therefore this study was conducted using daily stock returns data.

(iv) For each of the firms in the sample, compute the actual return on each of the days during the event period.

Return was considered as the total gain or loss experienced on a security over the given event period. Return was measured as the change in the securities' market price plus any cash distributions received during the event period expressed as a percentage of the beginning of period securities' price (Megginson 1997).

Raw data collected for announcement returns analysis comprised of daily closing share prices, any dividends paid during the period and the daily market return of the specified days, day zero being the announcement date and were summarised as shown in table 3.1 below.

Table 3.1, Raw Data Analysis for Announcement Returns.

ANNOUNCEMENT RETURNS.							
Name of Company and Market of Listing:at.....							
Date of Announcement:				Actual Return $R_j = \frac{P_t - P_0 + C_t}{P_0}$	Market Return r_m	Expected Return $R_i = \alpha + \beta R_m$	Abnormal Return AR-ER
Days Relative to Cross-Listing Announcement	Date	Closing Price	Dividend (if any)				
-30							
-29							
:							
0							
:							
+29							
+30							

Raw data collected for post-listing returns analysis comprised of daily closing share prices, any dividends paid during the period and the daily market return of the entire 61-day post-listing period for both the cross-listed and control companies, day zero being the date that actual foreign market trading commenced and were summarised as shown in table 3.2 below.

Table 3.2, Raw Data Analysis for Post-Listing Returns.

POST-LISTING RETURNS.							
Name of Company:							
Date Foreign Market Trading Commenced.....				Actual Return $R_j = \frac{P_1 - P_0 + C_t}{P_0}$	Market Return r_m	Expected Return $R_i = \alpha + \beta R_m$	Abnormal Return AR-ER
Days After Actual Cross-Listing	Date	Closing Price	Dividend (if any)				
0							
1							
:							
:							
59							
60							

The expression for computing the return was:

$$R_j = \frac{P_1 - P_0 + C_t}{P_0}$$

Where

- Rj = Return of security j
- P1 = Price at the end of the event period
- P0 = Price at the beginning of the event period
- Ct = Any income received during the event period.

(v) Compute the 'abnormal return' for each of the days being studied for each firm in the sample.

Abnormal return (AR) is the difference between the actual return and the expected return. The researcher collected the share prices and stock market returns for the period of one month before the specified event windows, and the market model was used to derive the expected returns as shown in table 3.3 below. The market model argues that returns on security j , are linearly related to returns on a market portfolio (Copeland and Weston 1992).

Table 3.3, Estimation of Expected Returns.

Estimation of Expected Returns. Model: 30 days before event window.									
Days before event window	Date	Closing Price	Dividend (if any)	Actual Return r_j	Deviation $[r_j - E(r_j)]$	Actual Return of market r_m	Deviation $[r_m - E(r_m)]$	Deviation of the market squared	Product of Deviations
30									
29									
:									
1									
0									
				=Expected r_j		=Expected r_m			=Summation
							$=\sigma^2(r_m)$		Cov (rm, rj)

The model starts with the simple linear relationship of returns and the market (Elton and Gruber 1995).

$$R_i = \alpha_i + \beta_i (R_m + e_i).$$

The above equation is referred to as the characteristic line, and is used as a proxy for the expected relationship between the two sets of excess returns.

$R_i \approx$ is the expected return of the security in question given the rate of return on the market index.

$\alpha_i \approx$ is known as the alpha and is the intercept of the characteristic line on the vertical axis.

β_i is the beta and is the slope of the characteristic line. It depicts the sensitivity of the security's excess returns to that of the market portfolio. The beta represents the systematic/unavoidable risk of a stock due to underlying movements in security prices.

e_i is the unsystematic/avoidable risk of a security that is unique to a particular company.

Efficient diversification reduces the total risk of a portfolio (unsystematic and systematic) to the point where only systematic risk remains and hence investors are only compensated for the systematic risk only. Hence reducing the above equation to:

$$R_i = \alpha_i + \beta_i R_m$$

The purpose of this exercise was to generate expected returns during the event windows under consideration by determining what the return on the stock would normally be if the overall stock market increased by, say, 0.5 per cent.

To estimate the parameters α_i and β_i the researcher used simple linear regression analysis in the following mathematical equations:

$$\beta_i = \frac{\text{Cov}(r_m, r_i)}{\sigma^2(r_m)}$$

$$\alpha_i = E(r_i) - E(r_m) \times \beta_i$$

Where: $\text{Cov}(r_m, r_i)$ is the covariance of the returns of the security and that of the market.

$\sigma^2(r_m)$ is the variance of the market returns.

The proportion of total risk explained by movements of the markets is represented by the r^2 statistic for the regression of excess returns for a stock

against excess returns for the market portfolio (r^2 measures the proportion of total variance of dependent variable that is explained by the independent variable, it is simply the coefficient of correlation squared). The proportion of total risk unique to the stock is $1-r^2$.

The market model is not supported by any theory and it assumes that the slope and intercept term are constant over the time period during which the model is fit to the available data. To arrive at the model equation, the returns of the stock selected were regressed with the returns of the NSE 20-share index for the period of one month before the specified event windows.

(vi) Compute for each day in the event period the average abnormal return for all events considered in the sample.

(vii) The individual day's abnormal returns will be added together to compute the average abnormal return from the beginning of the period.

(a) Announcement returns

Since tests with single event observation are not likely to be useful, the average effect of the announcements was examined, rather than each announcements effect separately, because other events are occurring, then abnormal return observations were averaged to obtain Average Abnormal Returns (AAR's), thereby allowing a better examination of the event under study.

(b) Post-listing performance

The researcher compared cross listing firms performance relative to non-cross listing firms' performance matched on size and market/price-to-book-ratio (Appendix 3).

(viii) Examine and discuss the results

The research determined whether the resulting average abnormal return for the announcement was statistically different from zero and to test for significance, a t-test statistic was used with a significance level of 95%. If the t statistics are statistically significant, the event affects returns; the sign of the excess returns determines whether the effect is positive or negative. The post listing performance measurement examined whether the cross-listed firms outperformed the control non-cross listed ones matched on the basis of market to book ratios.

3.2 Measure of Liquidity

Chordia et. al. (2001) have studied the relationship between individual stock returns and liquidity, where they proxy liquidity using measures of volume traded and turnover. To examine the post-listing liquidity, the researcher used the turnover ratio of each individual stock. Turnover ratio of a particular stock represents the value of traded shares as a percentage of the market value of a company.

$$\text{Turnover ratio} = \frac{\text{Value of Shares Traded}}{\text{Total Market Value of the Firm.}}$$

The turnover ratio was used to generate a trend graph depicting the liquidity performance of the cross-listed companies' vis-à-vis the control non-cross listed companies to improve the presentation of the analysis of the results for ease of interpretation.

Raw data collected to examine post-listing trends of proxies of liquidity comprised of the number of shares issued, daily volumes traded and the daily closing share prices for the cross listed companies and the control non-cross listed companies as shown in table 3.4 below.

Table 3.4, Post-Listing Turnover Ratios

Company.....; Date Foreign Market Trading Commenced.....							
Day	Date	No. of shares issued	Market Capitalization	Volume traded	Closing Price	Traded Value	Turnover Ratio
0							
1							
:							
:							
59							
60							

Market capitalization was obtained by multiplying the number of shares issued by each company and the daily closing share price. The daily traded value was obtained by multiplying the daily traded volume and the closing share price. These were important in determining the turnover ratio.

3.3 Data Collection

The data collected was quantitative secondary data.

Secondary Data

The secondary data collected related to the NSE index, share prices, any cash distributions and traded volumes during event periods of announcement and post-listing event windows. The secondary data sources included; the NSE Secretariat where I got the daily share prices, stock brokerage firms specifically Reliable Securities Limited who sourced for the researcher a copy of the NSE Handbook, newspapers which provided collaborating evidence on the announcement dates given to the researcher by the firms under study and company's annual reports which provided the companies' par value share price.

CHAPTER FOUR

4.0 RESEARCH FINDINGS AND PRESENTATION

4.1 Introduction

This study had two major purposes. The first one was to determine whether stock prices adjust to cross border listing announcement and the direction and magnitude of this adjustment. To achieve this, the market model was used to derive abnormal returns whose significance was tested using the t-test statistic at the 95% confidence level. The market model comprised of the NSE 20 share index for the period of one month before the specified event windows. It is typical for the estimation and the event windows not to overlap, as this design provides the estimators for the parameters of the expected return model that are not influenced by the event related returns. The announcement dates were obtained from the cross-listed firms and corroborated using the relevant news articles used to inform investors of the intention to cross list (Appendix 1).

The second purpose was to examine the post-listing performance of cross-listed firms vis-à-vis control non-cross listed firms. These were selected on the basis of the market/price-to-book ratios (Appendix 3), of the financial year immediately preceding cross listing when the cross listed firm's performance wasn't subject to the cross listing decisions' effects. To achieve this the market model was used to derive abnormal returns for both the cross-listed and control non-cross-listed companies for the entire 61-day post-listing event period and these were tested for significance using the t-test statistic at the 95% confidence level. Using the turnover ratio, which is a proxy measure of liquidity of the equities traded relative to the size of the company, their trend performance was examined.

4.2 Market Model Results

4.2.1 Announcement Returns

The results of the simple linear regression analysis used to derive the expected returns based on the market model for each cross listing announcement event are presented in table 4.1 below.

Table 4.1, Announcement Returns, Market Model Results

Company	Foreign Market	Estimated Equation $R_i = \alpha_i + \beta_i R_m$	r^2	SEE
EABL	USE	$R_i = 0.0006679 + 0.7926817 R_m$	0.00561	0.01606
EABL	DSE	$R_i = 0.0025232 + 0.3539829 R_m$	0.14701	0.02096
Kenya Airways	USE	$R_i = 0.0017959 + 0.3941430 R_m$	0.02216	0.01775
Kenya Airways	DSE	$R_i = 0.0400419 + 0.6021908 R_m$	0.13645	0.02237
Jubilee	USE	$R_i = 0.0028316 + 0.1781131 R_m$	0.07772	0.01650

Source: Research data

$r^2 \approx$ coefficient of determination.

SEE \approx Standard error of estimate.

$R_i \approx$ is the expected return of the security in question given the rate of return of the market, R_m .

From table 4.1 the coefficient of determination r^2 , which measures that part of the total risk that is explained by the movement of the market, reveals that the systematic risk explains 0.56% to 14.70% with an average of 7.78% of the total variability of an individual stocks return, the rest being explained by the unsystematic risk which is specific to a particular company and differs from company to company.

4.2.2 Post-Listing Performance

The results of the simple linear regression analysis used to derive the expected returns based on the market model for the post-listing event period are presented in tables 4.2 and 4.3 below for the cross-listed and control non-cross-listed firms respectively.

Table 4.2, Post-Listing Returns, Market Model Results. (Cross Listed Companies).

Company	Foreign Market	Estimated Equation $R_i = \alpha + \beta_1 R_m$	r^2	SEE
EABL	USE	$R_i = 0.01056 - 0.25623 \cdot R_m$	0.02666	0.01800
EABL	DSE	$R_i = 0.00033 + 1.31318 \cdot R_m$	0.05366	0.01746
Kenya Airways	USE	$R_i = 0.00060 + 0.24038 \cdot R_m$	0.19689	0.03971
Kenya Airways	DSE	$R_i = 0.00288 + 0.41947 \cdot R_m$	0.14573	0.02471
Jubilee	USE	$R_i = 0.00520 + 0.73472 \cdot R_m$	0.05630	0.02645

Table 4.3, Post-Listing Returns, Market Model Result. (Control Companies).

Control Company	Estimated Equation $R_i = \alpha + \beta_1 R_m$	r^2	SEE
NIC Bank (Control for EABL at USE)	$R_i = 0.01648 - 5.17946 \cdot R_m$	0.02429	0.03320
East African Cables (Control for EABL at DSE)	$R_i = 0.01880 + 0.70859 \cdot R_m$	0.0000063	0.02148
KCB (Control for Kenya Airways at USE)	$R_i = 0.000011 + 0.44999 \cdot R_m$	0.16482	0.02250
KPLC (Control for Kenya Airways at DSE)	$R_i = 0.00132 + 2.40315 \cdot R_m$	0.03311	0.02329
ICDC (Control for Jubilee at USE)	$R_i = 0.00190 - 0.29547 \cdot R_m$	0.16828	0.00918

From table 4.2 and 4.3 the coefficient of determination r^2 , which measures that part of the total risk that is explained by the movement of the market, reveals that the systematic risk explains between 2.43% to 19.69% with an average of 9.66% of the total variability of an individual stocks return, the rest being explained by the unsystematic risk which is specific to a particular company and differs from company to company. However, it is worth noting that East African Cables

returns have almost no relationship with the market returns and its coefficient of determination is almost zero percent.

4.3 Hypotheses Testing

The study tested two negatively stated hypotheses to determine whether they would be accepted or rejected. The first hypothesis was that the average abnormal returns surrounding cross border listing announcements have no impact on stock returns and the second was that the post-listing performance of cross-listed firms does not exceed that of non- cross-listed firms.

4.3.1 Announcement Returns

The short run event window of the announcements abnormal returns included the date of announcement, day zero, and seven trading days after the announcement. This broadened window was in order to increase the probability that trading on announcement information at the NSE would be captured within the first week of trading. Each events average abnormal returns surrounding the announcement were tested to determine if they were statistically different from zero using a two tailed t-test with 7 degrees of freedom at the 95% confidence interval ($t_{0.05/2,7}$) as shown in table 4.4 below. The analysis for the obtained data was performed using statistical software, SPSS, which automatically provided calculated values of t, which were compared with the standardised t distribution variables. (Appendix 4).

Table 4.4, Hypothesis Testing. (Short Run Average Abnormal Returns on Cross Listing Announcement).

Company	Foreign Market	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C.I.	P(standardised variable>X)>0.025
EABL	USE	0.0294009 abnormal return	Increase	14.488	Reject	0.000
EABL	DSE	-0.0039587 abnormal return	Decrease	-1.124	Accept	0.298
Kenya Airways	USE	-0.0007115 abnormal return	No effect	-0.116	Accept	0.912
Kenya Airways	DSE	-0.0374787 abnormal return	Decrease	-16.209	Reject	0.000
Jubilee	USE	-0.0036237 abnormal return	Decrease	-.969	Accept	0.365
All Companies Averaged	All markets	-0.0032744 abnormal return	Decrease	-1.929	Accept	0.095

The average abnormal return over the short run observation periods for all the announcement events is -0.327% , with a t-value of -1.929 at the 95% confidence interval. There is reasonable evidence to accept the null hypothesis and conclude that on average, the announcements had no effect on returns in the first week of trading with information. This is also evident from graph 1, which presents the average abnormal returns and days relative to cross listing announcement. However, the individual announcements of cross-listing Kenya Airways at the DSE, and EABL at the USE rejected the null hypothesis though on average it was accepted. EABL's announcement of its intention to cross-list at the USE had positive abnormal returns of 2.940% , whereas all the other announcements had negative abnormal returns of between -3.748% and -0.071% during the first week after announcement.

In the long run event window, each events average abnormal returns surrounding the announcement were tested to determine if they were statistically different from zero using a two tailed t-test with 60 degrees of freedom at the 95% confidence interval ($t_{0.05/2,60}$) over the full 61 day observation period. Since other events were occurring around the event windows, also the average abnormal

return of all the announcement events was tested to determine whether cross listing announcement had any impact on stock returns as shown in table 4.5 below. The analysis on the obtained data was performed using statistical software, SPSS, which automatically provided calculated values of t, which were compared with the standardised t distribution variables. (Appendix 5).

The hypothesis being tested was null hypothesis one which stated that the average abnormal returns surrounding cross border listing announcements have no impact on stock returns.

Table 4.5, Hypothesis Testing. (Average Abnormal Returns on Cross Listing Announcement).

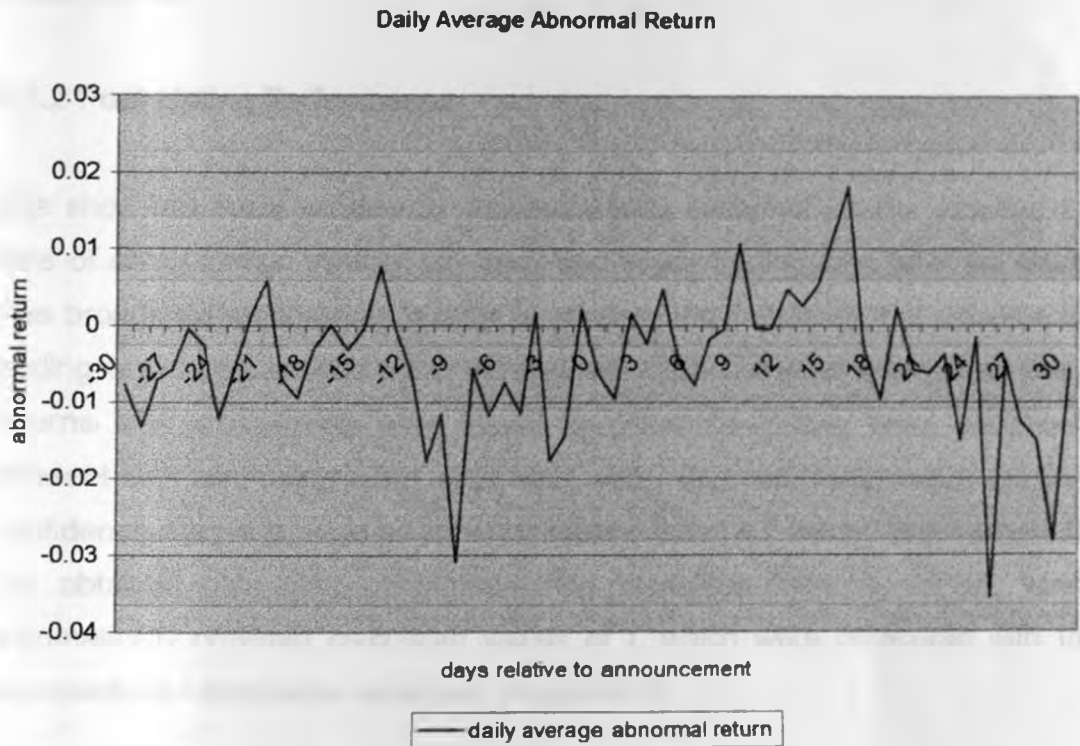
Company	Foreign Market	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C.I.	P(standardised variable>X)>0.025
EABL	USE	0.010809 abnormal return	Increase	5.089	Reject	0.000
EABL	DSE	0.000478 abnormal return	No effect	0.173	Accept	0.863
Kenya Airways	USE	-0.002055 abnormal return	Decrease	-0.912	Accept	0.366
Kenya Airways	DSE	-0.036529 abnormal return	Decrease	-12.396	Reject	0.000
Jubilee	USE	0.001580 abnormal return	Increase	0.723	Accept	0.472
All Companies Average	All markets	-0.005169 abnormal return	Decrease	-4.310	Reject	0.000

The average abnormal return over the full 61-day observation periods for all cross-listing announcements is a statistically significant -0.517% , with a t-value of -4.310 largely driven by two cross-listing announcements. There is reasonable evidence therefore to reject the null hypothesis and conclude that on average, the cross listing announcement had an effect on returns. This observation is consistent with previous studies (Lau et. al., 1994) that identified small

statistically significant abnormal returns surrounding announcement. However, the individual announcements of cross-listing EABL at the DSE, Kenya Airways and Jubilee at the USE had 0.863, 0.366 and 0.472 as their respective probabilities of accepting the null hypothesis as true though on average it was rejected. This insignificance comes as no surprise given the mixed findings in previous studies. EABL and Jubilee had positive abnormal returns of between 0.048% and 1.070%, whereas Kenya Airways experienced negative abnormal returns of -0.206% and -3.653% for both announcements of the intention to cross-list.

To assess the average abnormal returns trend relative to the announcement event, the average abnormal returns trend for all the announcements over the 61-day observation period is depicted in graph 1 below.

Graph 1, Graphical Presentation of Average Abnormal Returns for all Announcements and Days Relative to Cross Listing Announcement.



Graph 1 shows that in the short run, pre-announcement period, the abnormal returns are negative except for day -4 and -1 which have slightly positive abnormal returns of 0.167% and 0.206% respectively. In the post-announcement short run period, there are very slight variations in the abnormal returns of between a low of -0.975% on day 1 to a high of 0.468% observed on day 4. This is also evident from table 4.4, which provides reasonable evidence to conclude that on average, the announcements had minimal effect on returns in the first week of trading with the information.

In the week preceding the announcement date, i.e. from day 9 up to day 17 abnormal returns experience a positive drift reaching a high positive abnormal return of 1.814% on day 16, and since efficient market theory states that announcement effects should be fully and immediately incorporated in security prices, this interval may hence be a more reliable indicator of the announcement events influence on share prices relative to, say, the interval period day -30 through to 30.

4.3.2 Post Listing Performance.

The short run event window for the post-listing abnormal returns included the date of actual foreign trading, day zero, and seven trading days after the listing. This broadened window was in order to increase the probability that cross-border trading would be captured within the first week. Each events average abnormal returns after cross-listing were tested to determine if they were statistically different from zero using a two tailed t-test with 7 degrees of freedom at the 95% confidence interval ($t_{0.05/2,7}$) as shown in table 4.6 and 4.7 below. The analysis for the obtained data was performed using statistical software, SPSS, which automatically provided calculated values of t, which were compared with the standardised t distribution variables. (Appendix 6).

Table 4.6, Hypothesis Testing. Short Run Average Abnormal Returns on Actual Cross Listing. (Cross-Listed Companies).

Company	Foreign Market	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C.I.	P(standardised variable \geq X)>0.025
EABL	USE	0.02468 abnormal return	Increase	4.017	Reject	0.005
EABL	DSE	0.001695 abnormal return	Increase	0.208	Accept	0.841
Kenya Airways	USE	-0.00490 abnormal return	Decrease	-0.864	Accept	0.421
Kenya Airways	DSE	0.01513 abnormal return	Increase	4.684	Reject	0.002
Jubilee	USE	0.000014 abnormal return	No effect	0.004	Accept	0.997
All Companies Averaged	All markets	0.0073 abnormal return	Increase	3.299	Reject	0.013

Table 4.7, Hypothesis Testing. Short Run Average Abnormal Returns on Actual Cross Listing. (Control Companies).

Control Company	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C.I.	P(standardised variable \geq X)>0.025
NIC Bank (Control for EABL at USE)	0.03991 abnormal return	Increase	12.980	Reject	0.000
East African Cables (Control for EABL at DSE)	-0.0301 abnormal return	Decrease	-3.056	Reject	0.018
KCB (Control for Kenya Airways at USE)	0.003550 abnormal return	Increase	1.569	Accept	0.161
KPLC (Control for Kenya Airways at DSE)	-0.0117 abnormal return	Decrease	-1.183	Accept	0.276
ICDC (Control for Jubilee at USE)	-0.00134 abnormal return	Decrease	-0.688	Accept	0.575
Control Companies Average	0.00007037 abnormal return	Increase	0.32	Accept	0.976

From tables 4.6 and 4.7, it can be seen that the average abnormal return over the short run observation periods for all the post-listing events for the cross-listed companies was a statistically significant 0.723%, with a t-value of 3.299 at the 95% confidence interval. On the other hand, the control companies had an

average abnormal return of 0.00703%, which was not statistically significant over the same observation period. There is reasonable evidence to reject the second null hypothesis and conclude that on average, the short run post-listing performance of cross-listed firms exceeds that of non-cross listed firms of the same market/price-to-book values. This is also evident from graph 2, which presents both groups of companies' average abnormal returns and days after cross listing where it can be seen that the cross-listed companies average abnormal returns are perpetually above those of the control non-cross-listed firms.

In the long run event window, each events average abnormal returns after cross listing were tested to determine if they were statistically different from zero using a two tailed t-test with 60 degrees of freedom at the 95% confidence interval ($t_{0.05/2,60}$) over the full 61 day observation period. Since other events were occurring around the event windows, also the average abnormal return of all the events was tested to determine whether cross listing had any impact on stock returns and whether those of the cross-listed firms exceeded those of the control non-cross-listed ones as shown in table 4.8 and 4.9 below. The hypothesis being tested was null hypothesis two which stated that the post-listing performance of cross-listed firms does not exceed that of non-cross-listed firms.

Table 4.8, Hypothesis Testing. Average Abnormal Returns on Actual Cross Listing. (Cross-Listed Companies).

Company	Foreign Market	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C I	P(standardised variable X)>0.025
EABL	USE	-0.00584 abnormal return	Decrease	-2.488	Reject	0.016
EABL	DSE	0.006917 abnormal return	Increase	2.994	Reject	0.004
Kenya Airways	USE	0.03033 abnormal return	Increase	5.460	Reject	0.000
Kenya Airways	DSE	-0.000127 abnormal return	Decrease	-0.039	Accept	0.969
Jubilee	USE	0.00813 abnormal return	Increase	2.413	Reject	0.019
All Companies Averaged	All markets	0.007881 abnormal return	Increase	4.105	Reject	0.000

Table 4.9, Hypothesis Testing. Average Abnormal Returns on Actual Cross Listing. (Control Companies).

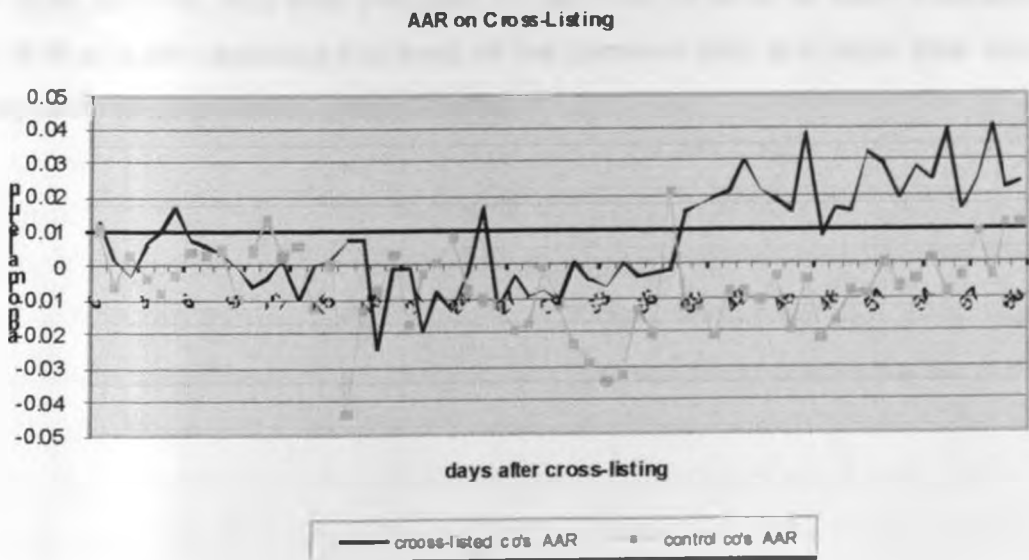
Control Company	Major Finding	Stock Reaction	t-statistic	Decision on Ho at 95% C I.	P(standardised variable X)>0.025
NIC Bank (Control for EABL at USE)	-0.0101 abnormal return	Decrease	-1.784	Accept	0.080
East African Cables (Control for EABL at DSE)	-0.0154 abnormal return	Decrease	-5.514	Reject	0.000
KCB (Control for Kenya Airways at USE)	-0.00514 abnormal return	Decrease	-1.706	Accept	0.093
KPLC (Control for Kenya Airways at DSE)	-0.00387 abnormal return	Decrease	-1.243	Accept	0.219
ICDC (Control for Jubilee at USE)	-0.000152 abnormal return	Decrease	-0.109	Accept	0.913
Control Companies Average	-0.00694 abnormal return	Decrease	-4.418	Reject	0.000

From tables 4.8 and 4.9 above, it can be seen that the average abnormal return over the full 61-day observation periods for all the cross-listed firms is a statistically significant positive 0.788% with a t value of 4.105 at the 95% confidence interval. This is consistent with previous studies (Lee, 1991; Torabzadeh et. al., 1992; Damodaran et. al., 1993; Varela and Lee, 1993a;

1993b; Lau et. al. 1994; Rothman, 1995 ;). On the other hand, the control companies had an average abnormal return of negative 0.694%, which was statistically significant over the same observation period. There is reasonable evidence to reject the second null hypothesis and conclude that on average, the post-listing performance of cross-listed firms exceeds that of non-cross listed firms of the same market/price-to-book values in the post-listing period. This is also evident from graph 2, which presents both groups of companies' average abnormal returns and days after cross listing where it can be seen that the cross-listed companies average abnormal returns are perpetually above those of the control non-cross-listed firms.

To assess the average abnormal returns trend relative to the cross listing event, the average abnormal returns trend for both groups of companies over the 61-day observation period is depicted in graph 2 below.

Graph 2, Graphical Presentation of Post Listing Average Abnormal Returns and Days After Cross Listing.



From graph 2, it can be seen that in the short run, post-listing abnormal returns of the cross-listed firms exceed those of the control firms, which are mostly negative

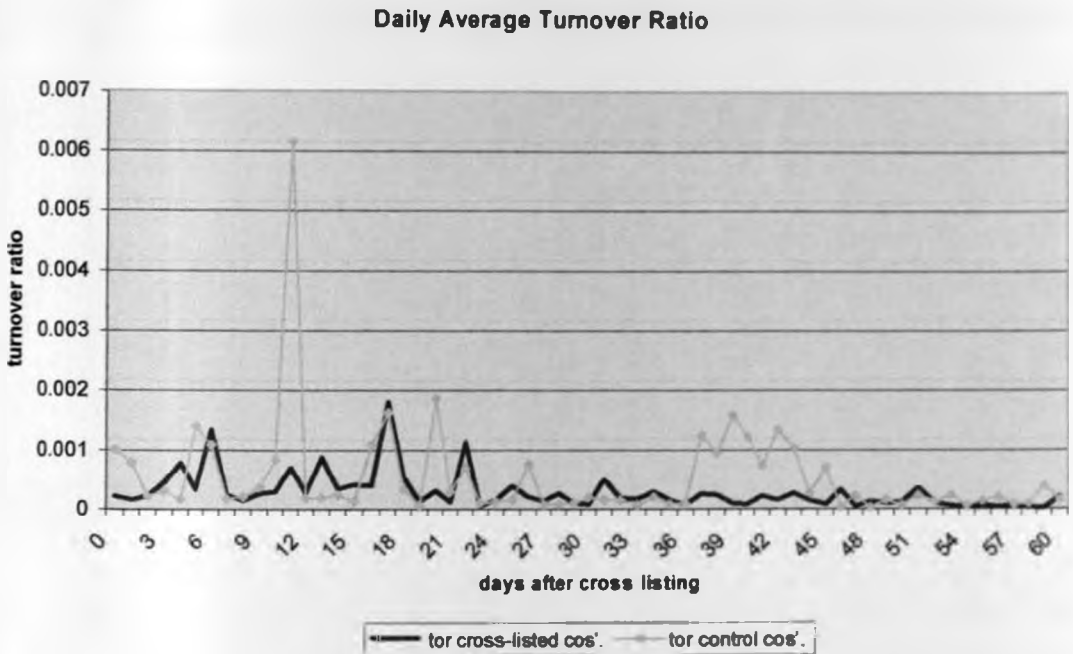
in the same period. This may be due to the fact that cross-listing firms ensure that there is a certain level of excitement generated to herald the actual trading of their shares in the foreign markets on the first few days of trading after which the excitement dies down. This can be seen from day 9 to day 38 where the average abnormal returns of the cross-listed firms do not exceed those of the control firms as both vary from having negative and positive drifts in their average abnormal returns.

In the long run, after day 39, the cross-listed firms average abnormal returns experience a positive drift whereas the control firms have negative abnormal returns over the same period. Previous studies have evaluated several hypothesis for this phenomenon including management timing the cross listing to follow good performance.

4.4 Post-Listing Liquidity

The daily turnover ratio was averaged for each set of firms for each post-listing day and a graph depicting the trend of the turnover ratio and days after cross listing derived as shown in graph 3 below.

Graph 3, Graphical Presentation of Post-Listing Daily Average Turnover Ratio (Cross-listed and Control Firms)



From graph 3 it can be seen that the turnover ratios of both sets of firms moved in the same general direction but the turnover ratio of the cross-listed firms was perpetually lower than that of the control non-cross-listed firms for the entire 61-day observation period except on days 4, 13, 22 and 31. This is an indicator that the control firms were experiencing greater liquidity at the NSE than the cross-listed firms. This may be taken to signify that the foreign investors being sought had already invested in the cross listing firms and did not have to make new purchases at the NSE for them to trade in their home markets. This was especially the case for EABL, which had many Ugandan investors who traded in its' shares at the NSE long before it had decided to cross list. Also, the low turnover ratio could have been caused by the fact that the foreign markets being sought (USE and DSE) were illiquid and inactive as compared to the NSE.

Overall the results of the post-listing performance are consistent with previous findings (Amihud and Mendelson, 1986; Chordia et. al. 2001,) who find a cross sectional relation between stock returns and the variability of liquidity.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

5.1 Introduction

This paper investigated the domestic market response to listing abroad. Using a traditional event study methodology of returns, the paper tested two hypotheses, first, the cross listing announcement effect and second, the post-listing performance of cross-listed firms vis-à-vis control non-cross-listed firms.

5.2 Conclusions

This paper sought to achieve the following objectives: firstly, to determine whether stock prices adjust to cross border-listing announcement and the direction of the stock price adjustment, secondly, to examine the short and long run post-listing performance of cross-listed firms vis-à-vis non-cross listed firms and thirdly, to examine the post-listing liquidity in the domestic market trading of the cross-listed firms.

In line with the first objective, the first null hypothesis that stated that the average abnormal returns surrounding cross border listing announcements have no impact on stock returns was accepted in the short run event window. This was because the announcements were found to have an insignificant negative abnormal return in the first week of trading with information at the 95% confidence interval. In the long run 61-day observation period however, the first null hypothesis was rejected at the 95% confidence interval arriving at the

conclusion that cross listing announcement did in fact have an impact on stock returns. The announcement was found to have a statistically significant negative abnormal return.

Related to the second objective, the second null hypothesis that stated that the post-listing performance of cross-listed firms does not exceed that of non-cross-listed firms was rejected both in the short run and in the long run event windows. In the short run, the cross-listed firms had a statistically significant positive abnormal return, which was one hundred times more the control firms' insignificant positive abnormal return at the 95% confidence interval. In the full 61-day observation period, the cross-listed firms, had a significant positive abnormal return, which is consistent with previous studies ((Lee, 1991; Torabzadeh et. al., 1992; Damodaran et. al., 1993; Varela and Lee, 1993a; 1993b; Lau et. al. 1994; Rothman, 1995 ;) who have carried out studies of U.S listings overseas and all report either slightly positive or neutral reactions. On the other hand, the control firms' had a negative average abnormal return over the same observation period at the 95% confidence interval. This led to the conclusion that the cross-listed firms' performance does indeed exceed that of non-cross-listed firms' of the same market/price-to-book values in the post-listing period.

For the third objective, the control firms' were found to have higher daily turnover ratios than the cross-listed firms. A higher turnover ratio is an indicator of increased activity hence liquidity. Overall, the results of this study do not support the increased liquidity hypothesis. This led to the conclusion that transaction costs for trading in the control firms' stocks were lower than those of the cross-listed firms' especially for foreign investors wishing to acquire the stocks at the NSE in the local currency for trading at their foreign markets. Overall the results of the post-listing performance are consistent with previous findings (Amihud and Mendelson, 1986; Chordia et. al. 2001,) who find a cross sectional relation between stock returns and the variability of liquidity.

5.3 Limitations of the Study.

This paper should be read with the following limitations in mind: first, the major limitation of all event studies is that during the specified event windows, other confounding events not related to the study are still occurring and it is impossible to separate the effects of one event from another. The question remains whether one can associate the effects observed with the corporate decision to list abroad or does the cross listing decision typically follow good operating performance? Secondly, some of the control firms selected for post-listing period comparison purposes based on the market/price-to-book values were not actively traded at the NSE during the period under consideration. This meant that other firms with a market/price-to-book value closest to that of the cross-listed firm had to be considered instead. Finally, the focus of the study was limited to the five cross listings achieved so far by three Kenyan parented companies in two foreign markets. This small sample of study may be subject to systematic bias that can distort the study.

5.4 Suggestions for Further Research

One fertile area for future research could be to determine whether the post-listing effects of cross listings stems from changes in a firm's cost of capital due to the perceived diversification of risk, or from the changes in expectations about future cash flows by the domestic investors, or from liquidity enhancement due to the new foreign market trading.

The post-listing section of this study could also be replicated using market data from the foreign markets where cross listing has been achieved and the listing performance obtained compared to this papers' findings.

Once mass cross listing is achieved in the East Africa region, under the EASRA initiative, research could be undertaken to determine the level of integration or segmentation each of the Uganda and Dar es Salaam bourses has with the NSE respectively, by separating the effects observed on cross listing in each of the markets.

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APPENDICES

APPENDIX 1

CROSS-LISTING ANNOUNCEMENT DATES.

Company	Potential Foreign Market	Announcement Date	Source	Short-Run (7- days) Finding	Long-Run(61- days) Finding
EABL	USE	12/03/2001	The East African March 12 th 2001	0.0294009 abnormal return Increase	0.010609 abnormal return Increase
EABL	DSE	14/06/2005	The Standard June 14 th 2005	-0.0036587 abnormal return Decrease	0.000478 abnormal return No effect
Kenya Airways	USE	20/12/2001	Airline Industry Information	-0.0007115 abnormal return No effect	-0.002055 abnormal return Decrease
Kenya Airways	DSE	22/09/2004	The Standard September 22 nd 2004	-0.0374787 abnormal return Decrease	-0.036529 abnormal return Decrease
Jubilee	USE	01/01/2006	Sunday Nation January 1 st 2006	-0.0036237 abnormal return Decrease	0.001500 abnormal return Increase
Average	-	-	-	-0.0032744 abnormal return Decrease	-0.005189 abnormal return Decrease

APPENDIX 2

ACTUAL FOREIGN TRADING DATES

Company	Foreign Market	Trading Start Date	Source	Post-listing Short - Run (7-days) Finding	Post-listing Long- Run (61-days) Finding
EABL	USE	27/03/2001	Daily Nation June 26 th 2005	0.02468 abnormal return Increase	-0.00584 abnormal return Decrease
EABL	DSE	29/06/2005	Daily Nation June 28 th 2005	0.001685 abnormal return Increase	0.000917 abnormal return Increase
Kenya Airways	USE	28/03/2002	Daily Nation June 26 th 2005	-0.00489 abnormal return Decrease	0.03033 abnormal return Increase
Kenya Airways	DSE	01/10/2004	Daily Nation June 28 th 2005	0.01513 abnormal return Increase	-0.000127 abnormal return Decrease
Jubilee	USE	14/02/2006	The East African February 20 th 2006	0.000014 abnormal return No effect	0.00813 abnormal return Increase
Average	-	-	-	0.0073 abnormal return Increase	0.007881 abnormal return Increase

APPENDIX 3

Market/Price-to-Book Ratios

	Financial Year					
	2005	2004	2003	2002	2001	2000
AGRICULTURAL						
Unilever Tea Kenya Ltd	1.54	1.04	0.77	0.6	0.63	0.82
Kakuzi Ltd	-	0.44	0.17	0.17	0.31	0.41
Rea Vipingo Plantations Ltd	1.99	0.73	0.47	0.23	0.28	0.37
Sasini Tea & Coffee Ltd	-	0.21	0.24	0.26	0.39	0.58
COMMERCIAL AND SERVICES						
Car & General (K) Ltd	1.07	0.78	4.01	0.65	0.65	1.02
CMC Holdings Ltd	-	0.84	0.62	0.17	0.09	0.16
Hutchings Biemer Ltd	-	1997 (0.04)	1996 (0.09)			
Kenya Airways Ltd	0.89	0.20	0.15	0.24	0.21	0.23
Marshalls (E.A.) Ltd	0.82	1.12	0.43	0.75	0.67	0.96
Nation Media Group	4.74	3.17	3.67	1.88	1.08	1.10
TPS Eastern Africa (Serena) Ltd	2.52	1.29	0.76	0.52	0.47	0.47
Uchumi Supermarket Ltd	1.71	2.00	2.71	1.07	2.91	2.73
FINANCE AND INVESTMENT						
Barclays Bank Ltd	4.06	3.27	5.18	1.87	1.16	1.35
C.F.C Bank Ltd	3.42	1.44	1.26	0.46	0.48	0.56
Diamond Trust Bank Kenya Ltd	2.43	1.94	2.06	0.63	0.58	0.88
Housing Finance Co Ltd	1.26	0.87	1.31	0.58	0.70	0.43
I.C.D.C Investments Co Ltd	0.98	1.21	1.02	0.45	0.97	0.88
Jubilee Holdings Ltd	1.14	0.89	0.32	0.13	0.15	0.17
Kenya Commercial Bank Ltd	2.26	1.49	1.44	0.48	0.30	0.36
National Bank of Kenya Ltd	1.78	1.44	1.24	0.38	0.34	0.29
NIC Bank Ltd	-	1.56	1.46	0.65	0.51	0.64
Pan Africa Insurance Holdings Ltd	2.06	1.26	1.87	0.20	0.39	0.22
Standard Chartered Bank Ltd	-	5.47	7.33	2.69	2.07	1.91
INDUSTRIAL AND ALLIED						
Athi River Mining	3.16	1.02	1.55	0.42	0.35	0.31
Bamburi Cement Ltd	4.75	2.69	3.29	1.24	0.43	1.01
B.O.C Kenya Ltd	2.28	2.23	1.73	0.50	0.57	0.82
British American Tobacco Kenya Ltd	5.24	4.58	5.74	1.14	1.05	1.24
Carbacid Investments Ltd	-	1.45	2.16	0.54	0.55	0.70
Crown Berger Ltd	1.28	1.17	0.24	0.18	0.33	0.36
E.A.Cables Ltd	4.71	3.06	1.02	0.70	0.63	0.61
E.A.Portland Cement Ltd	-	0.67	0.64	0.17	0.15	0.15
East African Breweries Ltd	-	2.90	1.78	0.73	0.74	0.61
Kenya Oil Co Ltd	-	1.38	1.04	0.33	0.35	0.61
Kenya Power & Lighting Ltd	-	0.29	0.13	0.03	0.36	0.43
Mumias Sugar Co. Ltd	2.03	0.63	0.26	0.18	0.43	
Olympia Capital Holdings Ltd	-					
Sameer Africa Ltd	-	1.64	1.64	1.13	0.89	1.49
Total Kenya Ltd	1.55	3.61	1.6	1.04	0.88	1.87
Unga Group Ltd	-	0.43	0.33	0.11	0.19	0.31

ALTERNATIVE INVESTMENT MARKET SEGMENT

	0.16	0.11	0.07	0.09	0.06	0.12
A Baumann & Co.Ltd	2005	2004	2003	2002	2001	2000
City Trust Ltd	-	0.61	0.43	0.38	0.33	0.40
Eaagads Ltd	0.93	0.73	0.88	0.79	0.85	0.87
Express Ltd	1.75	1.15	0.31	0.23	0.48	0.28
Kapchorua Tea Co. Ltd	-	0.42	0.60	1.01	0.97	1.07
Kenya Orchards Ltd	-	1.61	1.08	1.38	0.00	0.01
Limuru Tea Co. Ltd	5.66	3.80	3.91	5.93	6.50	3.18
Standard Group Ltd	10.75	6.70	8.30	0.50	1.10	1.20
Williamson Tea Kenya Ltd	0.46	0.23	0.20	0.21	0.40	0.38

Note symbol (-) suggests the information was not available at the NSE at the time the research was undertaken

Appendix 4

T-Test. Short Run Announcement Returns.

One-Sample Statistics

	N	Mean	Std Deviation	Std Error Mean
eabl at use	8	2.94E-02	5.739644E-03	2.03E-03
eabl at dse	8	-3.96E-03	9.965649E-03	3.52E-03
kenya airways at use	8	-7.11E-04	1.747985E-02	6.18E-03
kenya airways at dse	8	-3.75E-02	6.540005E-03	2.31E-03
jubilee at use	8	-3.62E-03	1.057809E-02	3.74E-03
average short run	8	-3.27E-03	4.801984E-03	1.70E-03

One-Sample Test

	Test Value = 0			
	t	df	Sig. (2-tailed)	Mean Difference
eabl at use	14.488	7	.000	2.940E-02
eabl at dse	-1.124	7	.298	-3.959E-03
kenya airways at use	-.115	7	.912	-7.115E-04
kenya airways at dse	-16.209	7	.000	-3.748E-02
jubilee at use	-.969	7	.365	-3.624E-03
average short run	-1.929	7	.095	-3.274E-03

One-Sample Test

	Test Value = 0	
	95% Confidence Interval of the Difference	
	Lower	Upper
eabl at use	2.46E-02	3.42E-02
eabl at dse	-1.23E-02	4.37E-03
kenya airways at use	-1.53E-02	1.39E-02
kenya airways at dse	-4.29E-02	-3.20E-02
jubilee at use	-1.25E-02	5.22E-03
average short run	-7.29E-03	7.40E-04

Appendix 5

T-Test. Long Run Announcement Returns

One-Sample Statistics

	N	Mean	Std Deviation	Std Error Mean
eabl at use	61	1.07E-02	1.642229E-02	2.10E-03
eabl at dse	61	4.79E-04	2.160123E-02	2.77E-03
kenya airways at use	61	-2.05E-03	1.760471E-02	2.25E-03
kenya airways at dse	61	-3.65E-02	2.301603E-02	2.95E-03
jubilee at use	61	1.56E-03	1.684878E-02	2.16E-03
average long run	61	-5.17E-03	9.366543E-03	1.20E-03

One-Sample Test

	Test Value = 0			
	t	df	Sig (2-tailed)	Mean Difference ^a
eabl at use	5.089	60	.000	1.070E-02
eabl at dse	.173	60	.863	4.788E-04
kenya airways at use	-.912	60	.366	-2.055E-03
kenya airways at dse	-12.396	60	.000	-3.653E-02
jubilee at use	.723	60	.472	1.561E-03
average long run	-4.310	60	.000	-5.169E-03

One-Sample Test

	Test Value = 0	
	95% Confidence Interval of the Difference	
	Lower	Upper
eabl at use	6.49E-03	1.49E-02
eabl at dse	-5.05E-03	6.01E-03
kenya airways at use	-6.56E-03	2.45E-03
kenya airways at dse	-4.24E-02	-3.06E-02
jubilee at use	-2.75E-03	5.88E-03
average long run	-7.57E-03	-2.77E-03

Appendix 6 T-Test. Short Run Post-listing Returns

One-Sample Statistics

	N	Mean	Std Deviation	Std Error Mean
eabl trading at use	8	2.47E-02	1.735989E-02	6.14E-03
eabl trading at dse	8	1.69E-03	2.296013E-02	8.12E-03
kq trading at use	8	-4.99E-03	1.653484E-02	5.85E-03
kq trading at dse	8	1.51E-02	9.138552E-03	3.23E-03
jubilee trading at use	8	1.39E-05	1.086655E-02	3.84E-03
average cross listed firms	8	7.30E-03	6.259080E-03	2.21E-03
nic control for eabl use	8	3.99E-02	8.696061E-03	3.07E-03
EA cables control for eabl dse	8	-3.01E-02	2.786082E-02	9.85E-03
kcb control for kq use	8	3.55E-03	6.397181E-03	2.26E-03
kplc control for kq dse	8	-1.17E-02	2.790130E-02	9.86E-03
icdc control for jubilee use	8	-1.34E-03	6.450138E-03	2.28E-03
average control firms	8	7.04E-05	6.179846E-03	2.18E-03

One-Sample Test

	Test Value = 0			
	t	df	Sig (2-tailed)	Mean Difference
eabl trading at use	4.017	7	.005	2.466E-02
eabl trading at dse	.208	7	.841	1.685E-03
kq trading at use	-.854	7	.421	-4.992E-03
kq trading at dse	4.684	7	.002	1.513E-02
jubilee trading at use	.004	7	.997	1.393E-05
average cross listed firms	3.299	7	.013	7.300E-03
nic control for eabl use	12.980	7	.000	3.991E-02
EA cables control for eabl dse	-3.056	7	.018	-3.010E-02
kcb control for kq use	1.569	7	.161	3.550E-03
kplc control for kq dse	-1.183	7	.276	-1.167E-02
icdc control for jubilee use	-.588	7	.575	-1.341E-03
average control firms	.032	7	.975	7.037E-05

	Test Value = 0	
	95% Confidence Interval of the Difference	
	Lower	Upper
eabl trading at use	1.01E-02	3.92E-02
eabl trading at dse	-1.75E-02	2.09E-02
kq trading at use	-1.88E-02	8.83E-03
kq trading at dse	7.49E-03	2.28E-02
jubilee trading at use	-9.07E-03	9.10E-03
average cross listed firms	2.07E-03	1.25E-02
nic control for eabl use	3.26E-02	4.72E-02
EA cables control for eabl dse	-5.34E-02	-6.81E-03
kcb control for kq use	-1.80E-03	8.90E-03
kplc control for kq dse	-3.50E-02	1.17E-02
icdc control for jubilee use	-6.73E-03	4.05E-03
average control firms	-5.10E-03	5.24E-03

Appendix 7

T-Test. Long Run Post-listing Returns

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
eabl trading at use	61	-5.84E-03	1.832292E-02	2.35E-03
eabl trading at dse	61	6.92E-03	1.804498E-02	2.31E-03
kq trading at use	61	3.03E-02	4.338079E-02	5.55E-03
kq trading at dse	61	-1.27E-04	2.579333E-02	3.30E-03
jubilee trading at use	61	8.13E-03	2.629844E-02	3.37E-03
average cross listed firms	61	7.88E-03	1.499279E-02	1.92E-03
nic control for eabl use	61	-1.01E-02	4.423309E-02	5.66E-03
EA cables control for eabl dse	61	-1.54E-02	2.187419E-02	2.80E-03
kcb control for kq use	61	-5.14E-03	2.354390E-02	3.01E-03
kplc control for kq dse	61	-3.87E-03	2.430408E-02	3.11E-03
icdc control for jubilee use	61	-1.52E-04	1.085268E-02	1.39E-03
average control firms	61	-6.94E-03	1.227209E-02	1.57E-03

One-Sample Test

	Test Value = 0			
	t	df	Sig. (2-tailed)	Mean Difference
eabl trading at use	-2.488	60	.016	-5.836E-03
eabl trading at dse	2.994	60	.004	6.917E-03
kq trading at use	5.460	60	.000	3.033E-02
kq trading at dse	-.039	60	.969	-1.275E-04
jubilee trading at use	2.413	60	.019	8.126E-03
average cross listed firms	4.106	60	.000	7.882E-03
nic control for eabl use	-1.784	60	.080	-1.010E-02
EA cables control for eabl dse	-5.514	60	.000	-1.544E-02
kcb control for kq use	-1.706	60	.093	-5.142E-03
kplc control for kq dse	-1.243	60	.219	-3.869E-03
icdc control for jubilee use	-.109	60	.913	-1.521E-04
average control firms	-4.418	60	.000	-6.942E-03

One-Sample Test

	Test Value = 0	
	95% Confidence Interval of the Difference	
	Lower	Upper
eabl trading at use	-1.05E-02	-1.14E-03
eabl trading at dse	2.30E-03	1.15E-02
kq trading at use	1.92E-02	4.14E-02
kq trading at dse	-6.73E-03	6.48E-03
jubilee trading at use	1.39E-03	1.49E-02
average cross listed firms	4.04E-03	1.17E-02
nic control for eabl use	-2.14E-02	1.23E-03
EA cables control for eabl dse	-2.10E-02	-9.84E-03
kcb control for kq use	-1.12E-02	8.88E-04
kplc control for kq dse	-1.01E-02	2.36E-03
icdc control for jubilee use	-2.93E-03	2.63E-03
average control firms	-1.01E-02	-3.80E-03