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The Impact of the Regional Cross-Listing of Stocks on Firm Value in Sub-Saharan Africa

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The Impact of the Regional Cross-Listing of Stocks on Firm Value in Sub-Saharan Africa

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Abstract

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This paper examines the impact of regional cross-listing on stock prices. The sample consists of sub-Saharan African firms that have cross-listed during the period 1992–2008. Using event study methodology, the study finds positive abnormal returns around the date of the regional cross-listing of stocks. The positive announcement period effect, together with the normal post cross-listing performance, shows that regional cross-listing increases firm value. Overall, this provides evidence that firms benefit from listing outside their home market and need to be taken into consideration by SSA country authorities as they seek a regional approach to stock market development. Thus, policy makers of both the countries of primary listing (home country) and secondary listing (host country) need the right policy handles to conceptualize, facilitate and steer regional cross-listing efforts by firms. Through complementary policy-based efforts, policy makers can set the stage for regional cross-listings and harness the numerous related benefits.

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Contents **Page**

I. Introduction 3

II. Regional Cross-Listing in Sub-Saharan Africa 5

III. Literature Review.....10

IV. Methodology and Data 11
A. Methodology 11
B. Data 13

V. Stock Price Response to Regional Cross-Listing of Stocks.....14

VI. Conclusion, Recommendations, and Policy Implications 18

References.....24

Tables
1. Regional Cross-Listings of Stocks.....4
2. Sub-Saharan Africa: Details of the Regional Cross-listings of Stocks, 1992–2009.....6
3 Average and Cumulative Abnormal Returns around Regional Cross-listing of Stocks.....9
4 Average and Cumulative Abnormal Returns around Regional Cross-listing of Stocks.....15
5. Market Reaction to Regional Cross-Listing of Stocks 17

Figure
1. Cumulative Abnormal Returns Five Months Around the Date of Regional Cross-Listing.20

Appendix
I. Model Specifications 21

Appendix Tables
6. Market Reaction to Regional Cross-Listing of Stocks 17
7. Average and Cumulative Abnormal Returns around Regional Cross-Listing of Stocks (excluding Ecobank) 23
8. Sub-Saharan Africa: Securities Markets' Basic Legal and Regulatory Framework.....23

I. INTRODUCTION

This paper examines the impact of the regional cross-listing of stocks on firm value[2] in sub-Saharan African (SSA) stock markets. It analyzes market reaction around the date of the announcement and of the actual regional cross-listing of stocks. It also discusses policy options for promoting a regional approach to stock market development in SSA.

Regional integration has been proposed in the literature as a solution to stock market development in smaller emerging countries (Demirguic-Kunt and others, 2008, Tahari, 2007, Shah, and others, 2008). Proponents of this approach have argued that regional integration can bring greater efficiency, synergies, and economies of scale; attract the foreign flow of funds; foster risk sharing and portfolio diversification; act as an impetus to financial sector reforms, thereby broadening the competitiveness of regional financial systems and minimizing the risks of financial instability; facilitate capital market development; and lead to economic growth (Faruqee, 2007;[3] Demirguic-Kunt and others, 2008, Adelegan, 2008b).

Regional integration has been undertaken by SSA capital markets with attendant financial flows in various forms including that of cross-border listing of stocks (Table 1). Theoretical asset pricing models have predicted an increase in stock prices upon cross-listing. Decisions on regional cross-listing are taken by firms, while policy makers and the stock exchanges facilitate the regional approach to cross-listing by signing memoranda of understanding (MoUs) and putting in place the necessary conditions to harness the benefits of regional cross-listing and develop their capital markets. These conditions include sound legal and regulatory frameworks, macroeconomic and political stability, harmonization of listing rules, accounting laws and disclosure requirements across the region, strong money markets, and incentives for listed firms and other market participants.

Although regional cross-listing can promote stock market development, the decision to cross-list is taken by the firm. Thus, it is desirable to examine the impact of such a decision on firm value. Firms generally are profit maximizers, and so decisions taken by firms are geared towards maximizing the value of the firm and shareholders' wealth. The performance of a firm's share around the time of cross-listing could be used as a measure of the information contained in both the announcement and the actual cross-listing. The stock market considers cross-listing information to be good or bad depending on whether it will or will not lead to an Improvement in the firm's efficiency in both the home and host country. If the information is considered good, it will have a positive impact on the firm's value and shareholders' wealth, and vice versa. The reactions of the share price to cross-listing will indicate whether the market considers such a change significant or not. The behavior of the abnormal security

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[2] Firm value is the net present value of the income stream plus the value of the nonoperating assets of the firm.

[3] Europe has experienced many approaches to integration, including interoperability, alliances, mergers, joint ventures, horizontal and vertical approaches. A certain level of success has been recorded, although the multiplicity of the European system has continuously created barriers to efficient cross-border trading, clearing and settlement.

Table 1. Sub-Saharan Africa: Stock Exchanges with Regional Cross-Listed Stocks

Stock Exchanges with Primary Listings	Stock Exchanges with Secondary Regional Cross-Listings	Year of First Cross-Listing	Cross-listed	No. of stocks	Total
WAEMU	Nigeria and Ghana	2006	YES	1	1
Kenya	Tanzania and Uganda	2001	YES	3	3
Namibia	South Africa	2009	YES	1	1
Nigeria1/	South Africa	2006	YES	1	1
South Africa 2/	Namibia	1992	YES	28	28
	Botswana 3/	1997	YES	2	
	Malawi 4/	1999	YES	1	
	Zambia 5/	2003	YES	1	
	Ghana 6/	2004	YES	1	
	Zimbabwe		YES	3	31
Zimbabwe	South Africa		YES	2	

Source: Websites of various Stock Exchanges

1// MNET/Super Sport, a JSE primary listed company was cross-listed on the Nigerian Stock Exchange in 2001and delisted in 2003.
2/ 31 firms with primary listings on the JSE are cross-listed on other stock exchanges in the SSA region, of which five are cross-listed on more than one exchange.
3/ The JSE companies cross-listed on the Botswana Stock Exchange are also cross-listed on the Namibia Stock Exchange.
4/The JSE company cross-listed on the Malawi Stock Exchange (MSX) (Old Mutual) is also cross-listed on the NSX.
5/ The JSE company cross-listed on the LUSE (Shoprite) is also cross-listed on the NSX.
6/ AngloGold Ashanti was formed on April 26, 2004 following the merger of AngloGold of South Africa and Ashanti Gold Fields of Ghana that were previously independently listed on the JSE and the GSE respectively.

returns around cross-listings when examined will show the impact of the announcements of cross-listings. If cross-listing has no impact on prices, the average effect should be zero. However, the abnormal returns around the announcement of cross-listing is the sum of an information effect and a real effect.

The information effect is positive if the change suggests that the firm's performance will be positive, while the real effect is positive if the change is in the shareholders' interest. The combination of real and information effects could bring about a wide range of results depending on the magnitude of the individual effects. However, the average effects of cross-listing ought to be positive.

This study considers the following questions: Does the market react to the regional cross-listing of stocks? What is the impact of regional cross-listing on firm value?
To answer these questions, this study examines the impact of regional dual listing on firm value, concentrating on the announcement date and the actual date of the regional cross-listing of stocks. The study finds positive abnormal returns around the announcement date, providing evidence that firms benefit from the regional cross-listing of stocks outside their home country.

The rest of the paper is structured as follows. Section II presents the structure of regional cross-listings in SSA and describes the benefits of cross-listing for both home and host

countries. Section III reviews selected literature, while Section IV introduces the event study methodology. The penultimate section presents the empirical analysis of stock price response to regional cross-listing. This is followed in Section VI by a discussion of policy recommendations and conclusions.

II. Regional Cross-Listing in sub-Saharan Africa: Benefits to Home and Host Countries

Table 1 summarizes information on the regional cross-listings in the various SSA stock markets. The trail was blazed by the JSE Securities Exchange of South Africa when it cross-listed on the Namibia Stock Exchange (NSX) on the first day of trading of the NSX in October 1992.

Subsequently, South Africa has cross-listed 28 firms on the NSX (See Table 2). There has also been regional cross-listing between stock markets in (i) Botswana and South Africa since 1997; (ii) Malawi and South Africa in 1999; (iii) Nigeria and South Africa first in 2001[4] and later in 2006; (iv) Zambia and South Africa in 2003; and (v) Ghana and South Africa in 2004. Triple listing of stocks has also commenced, with (i) the three East African Exchanges of Kenya, Uganda and Tanzania in 2004; and (ii) Ghana, Nigeria, and WAEMU (Bourse Régionale des Valeurs Mobilières) exchanges in 2006.

There have been further agreements to cross-list among stock markets in the SSA region. South Africa has signed a MoU with Botswana, Egypt, Ghana, Kenya, Namibia, Nigeria, and Uganda. Nigeria has signed a MoU with Ghana and WAEMU, while the Nairobi Stock Exchange of Kenya has signed MoUs with Ghana, Nigeria, Tanzania, Uganda, and WAEMU.

In SSA countries, regional cross-listing is beneficial to the firms and to the countries of both primary listing (home country) and secondary listing (host country). Policy makers of the countries of primary and secondary listings need the right policy handles to encourage facilitate and steer regional cross-listing efforts by firms. Through complementary policy based efforts, policy makers can set the stage for the regional cross listing of stocks and harness the numerous benefits that are associated with it.

[4] MNET/Super Sport, a JSE primary listed company was cross-listed on the Nigerian Stock Exchange in 2001 and delisted in 2003.

Table 2. Sub-Saharan Africa: Details of the Regional Cross-listings of Stocks, 1992–2009

Country Country of Primary listing	Countries cross-listed Country of secondary listing	Company	Month	1992	1993	1995	1997	1998	1999	2001	2003	2004	2005	2006	2007	2008	2009
WAEMU/Cote D'Ivoire	8 WAEMU countries 1/	All	Sept.					*									
	Nigeria and Ghana	Ecobank transnational	June & Sept.											*			
Kenya	Uganda	East African Breweries	Mar.							*							
		Kenya Airways	Mar.								*						
		Jubilee Insurance	Feb.											*			
	Tanzania	Kenya Airways	Oct.									*					
		East African Breweries	Jun.										*				
		Jubilee Insurance	Dec.											*			
Namibia	South Africa	Trustco 2/	Feb.														*
Nigeria	South Africa	Oando Plc	Nov.											*			
South Africa 2/	Botswana	Investec	Oct.				*										
	Botswana	Ellerine	Mar.					*									
	Ghana	AngloGold Ashanti	April									*					
	Malawi	Old Mutual	July						*								
	Namibia	Afrox	Feb.			*											
		Anglo-American	Jun.							*							
		Alexander Forbes															
		Bannerman Resources Ltd	Apr.													*	
		Barloworld	Sept.				*										
		Deep Yellow Ltd	Jan													*	
		Edgars Cons					*										
		Firstrand	Jan.					*									
		Investec	Oct.				*										
		JD Group															
		Mutual and Federal Insurance	Nov.		*												
		Metropolitan Holding	Sept.							*							
		Nictus	Oct.	*													
		Nedbank Group	Feb.												*		
		Oceana Group	Sept.					*									
		Old Mutual	July						*								
		Paladin Energy Ltd	Feb													*	
		Sanlam Ltd	Nov.					*									
		Santam Ltd	Dec					*									
		Shoprite Holdings									*						
		Standard Bank Group	Dec.	*													
		Trans Hex	July						*								
		Wooltru															
		Wooltru N															
		Truworths	Oct.					*									
		Vukile	Jun.												*		
		Trans Hex															
		Xemplar Energy Corp. NM															
	Zambia	Shoprite Holdings									*						
	Zimbabwe	Halogen Holdings Societe An.															
		Old Mutual															
		Pretoria PortlandCement															

Zimbabwe	South Africa	BICC Cafca Ltd 2/ Hwange Colliery 2/

Source: Web sites of various stock exchanges.

1/ They are Benin, Burkina Faso, Cote D'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. 2/ The JSE South Africa launched its new African board of the JSE South Africa on February 19, 2009. Trustco of NSX Namibia listed on the new African board of the JSE South Africa on February 19, 2009. and later in the year, the JSEhopes to list Oando PLC, Hwange Colliery Co., Teal Exploration & Mining, Tawana Resources, BICC Cafca Ltd.
Note: * and ** represent cross-listing associated with setting up of subsidiary firm in host country and cross-listing without subsidiary operations in host country respectively.

Apart from providing the avenue for cross-border trading in stocks, the home firm and country of primary listing enjoy a number of benefits, including (i) greater access to lower cost equity finance from a wider investor base;[5] (ii) enhanced business reputations through openness and more stringent financial disclosure; (iii) a reduction in transaction costs for investors through gains in market liquidity as a result of cross-listings; (iv) mitigation of market segmentation through a reduction in barriers to foreign investors that arise from regulation and lack of information; and (v) addressing of information asymmetries and enhanced corporate governance (Claessens and others, 2002; Faruquee, 2007).

Cross-listing is also beneficial for the firm and country of secondary listing. In addition to increasing stock market liquidity, cross-listing also: (i) provides an avenue for portfolio diversification for a wider investor base; (ii) improves the employment level through gains from the expansion of operations in the country of secondary listing; (iii) enhances both the business reputation of the cross-listed firm and other national listed firms; (iv) reduces spreads on interest rates and debt securities by increasing the number of investors in the stock market, thereby reducing the concentration of investors in the money market; (v) increases the availability and accuracy of public information and lowers information asymmetries; and (vi) enhances corporate governance, and market transparency and quality.

Regional cross-listings in sub-Saharan Africa have been associated with expansion and the setting-up of operations in the host countries. In almost all cases, firms are large with a strong base in their home countries, and they first established operations in their host countries before deciding to cross-list (see Table 3).[6] Many cross-listings are undertaken to expand operations in the host countries. Almost all the firms that are cross-listed (about 98 percent or 42 out of 43) have set up operations in the host countries.[7] For example, East African Breweries, with Kenya as the home country, has a subsidiary Uganda Breweries Ltd in Uganda, its host country of cross-listing. Jubilee Insurance of Kenya has subsidiaries in Uganda and Tanzania; Kenya Airways owns 49 percent of Precision Air of Tanzania; Ecobank Transnational has operations in the Cote D'Ivoire (WAEMU) the home country and in Ghana and Nigeria, the host countries; Investec and Ellerine have operations in South Africa and Botswana; and the 28 firms that are cross-listed in South Africa and Namibia have an operational base in both countries. Cross-listing in SSA has been generally accompanied by an initial public offering and/or secondary market listing.

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[5] If cross-listing is accompanied by an initial public offering, the financing of the firm is increased and its cost of capital is reduced as equity increases. An optimal gearing level of equity and debt will result in the lowest weighted average cost of capital.

[6] In almost all the cases, the listing requirements include a condition that a firm must have established an operational base for about three years before it can be listed or cross-listed on the stock exchange of the host country.

[7] The only exception is Oando PLC that was incorporated and listed in Nigeria, the home country, but registered as an external firm and listed on the JSE, South Africa.

Table 3. Sub-Saharan Africa: Firms' Establishment of Operations and Cross-listing

Country/ Stock Market	Country/ Stock Market	Company	Year of Operations	Year of Listing	IPO	Secondary Trading/ Listings
Primary Listing	Secondary Listings					
WAEMU/Côte d'Ivoire	Nigeria	Ecobank bank:	1989	2006	*	
	Ghana		1990	2007	*	
Kenya	Uganda	East African Breweries 1/	1959	2001	*	
		Kenya Airways		2004	*	
		Jubilee Insurance	1992	2006	*	
	Tanzania	Kenya Airways	2003	2004	*	
		East African Breweries	1964	2005	*	
		Jubilee Insurance	1998	2006	*	
Namibia	South Africa	Trustco	2007	2009	*	*
Nigeria	South Africa	Oando Plc	2005	2005	*	*
South Africa	Botswana	Investec	1995	1997	*	*
	Botswana	Ellerine	1998	1998	*	*
	Ghana	AngloGold Ashanti	2004	2004	*	
	Malawi	Old Mutual	1930	1999	*	
	Namibia	Afrox	1988	1995	*	
		Anglo-American	2001	2001	*	*
		Alexander Forbes	2004			*
		Barloworld	1960	1996		
		Edgars Cons	1946			*
		FirstRand		1998		
		Investec	1996	1997		*
		JD Group	2001	2001		*
		Mutual and Federal Insurance		1993		*
		Metropolitan Holding	1996	2001		
		Nictus		1992		*
		Nedbank Group	1955/1973	2007		
		Oceana Group		1998		*
		Old Mutual		1999		
		Sanlam Ltd	1998	1998		*
		Santam Ltd	1998	1998		*
		Shoprite Holdings				*
		Standard Bank Group		1992		
		Trans Hex		1999		*
		Wooltru			*	
	Zambia	Shoprite Holdings	1995	2003	*	
Zimbabwe	South Africa	BICC Cafca Ltd	1945	1946	*	*

Source: websites of various stock exchanges
1/East African Breweries limited (EABL) acquires financial stake in Uganda Breweries in 1959, company's activities nationalized in 1972. EABL cross-listed on USE in 2001, and purchased the entire issued ordinary share capital of International Distillers Uganda Limited from Selviac Nederland B.V. at a cost of 300 million payable in cash in 2002.

Regional cross-listings in SSA have either been policy driven or market driven.

- Examples of **government policy induced regional cross-listings** are the cross-listings between (i) the JSE, South Africa and NSX, Namibia; and (ii) the East African Stock Exchanges (NSE and USE and TSE). Cross-listing of many South African companies listed on the Namibia Stock Exchange has been motivated by the imposition of capital controls on portfolio flows and by the domestic investment requirements set by the Namibian authorities in an attempt to keep the large surpluses of the country's pension and insurance funds invested in Namibia. By cross-listing, South African firms were able to qualify as Namibian investments. Similarly, the cross-listing of East African Breweries on the Ugandan and Tanzanian exchanges was linked to ensuring market access for beer trade throughout the EAC.

- Examples of **market driven cross-listings** are: (i) the West African triple cross-listing of Ecobank on the BRVM, the Nigerian Stock Exchange, and the Ghana Stock Exchange; (ii) the cross-listing of Oando on the Nigerian Stock Exchange and the JSE; and (iii) the cross-listing of Shoprite on the JSE and LUSE, Zambia. Irrespective of the reason for the regional cross-listing, it is beneficial to both the host and home countries.

III. LITERATURE REVIEW

A body of literature has studied the impact of the international cross-listing of stocks by firms from emerging economies on the local capital market (Domowitz et al. 1998; Hargis and Ramanlal, 1998; Miller, 1999; Hargis, 2000; Claessens and others, 2002; Jayakumar, 2002; and Levine and Schmukler, 2003).[8] Domowitz et al. (1998) examine the impact of international cross-listing where investors acquire costly information and highlight the importance of intermarket information linkages using data from the Mexican stock market. Findings from the home countries show that (i) the impact of cross-listing reflects the costs of order flow fragmentation and the benefits of increased competition; and (ii) cross-listing is associated with positive excess returns that accrue largely to stocks open to foreign investors prior to cross-listing. Miller (1999) notes abnormal returns around the announcement date of American Depository Receipts (ADR) and also finds that market reaction is related to choice of exchange, geographical location and avenue for raising equity capital. Previous studies have concentrated on stock price reactions to first international cross-listing, especially ADR, and have been silent on the impact of regional cross-listing on firm value.

Unlike the developed market, studies on stock price reactions to events in SSA are scanty but diverse. This includes price reactions to earnings announcements, dividend announcements, stock splits, board changes, political succession, and connections (Gandhi, and others, 1980, Cooper, 1982, Parkinson, 1987, Ayadi, 1984, Dickinson and Muragu, 1994, Omole, 1997, Olowe, 1998, Matome, 1998, Osei, 1998, Oludoyi, 1999, Adelegan, 2003, 2006a and b,

[8] See Karolyi, 1996 for a survey of international cross-listing.

2007a and b and 2008a and b). Most results find that statistically significant abnormal returns are earned on the market around the events studied.

However, there is no study of market reactions to regional cross-listing of stocks on SSA stock markets. This study, which tries to fill the gap, focuses on analyzing the stock price reactions to the regional cross-listing of stocks on nine SSA stock markets cutting across 16 SSA countries.[9]

IV. METHODOLOGY AND DATA

A. Methodology

The study adopts an event study methodology to analyze market reactions to the regional cross-listing of stocks, which is the impact of regional cross-listing on firm value around the event period. Since cross-listing is a decision made at the firm level, the impact on firm value will influence the firm's decision to cross-list or not. Event study methodology has been used extensively in finance, economics and political economy literatures to empirically estimate market reactions to specific events by studying the reactions of relevant variables around the event window. The methodology has been applied to a variety of firm specific and economy-wide events (see Beaver, 1968, May 1971, Patell, 1976, Bonnier and Bruner, 1989, Fox and Opong, 1996, Fama, 1991, MacKinlay, 1997, Adelegan, 2003, 2006a and b, 2007a and b, and 2008a).[10]

The methodology is based on the assumption that capital markets are efficient and the effects of an event will be reflected immediately in the stock price. The main thrust of the methodology is that if an event contains information that alters expectations concerning future cash flows, the release of such information will cause a change in investors' estimates of the probability distribution of the firms' future share price and this may result in a change in the current price. The event study methodology is used to gauge the effects at the individual stock level rather than the market level. This is because findings at the market level are likely to be distorted by other changes taking place contemporaneously. In its application of event study methodology, this study follows the approach outlined in MacKinlay (1997), which consists of the following steps: (i) define the event and identify the event window; (ii) select the sample of countries, stock markets, and firms to be included; (iii) select the nonevent window to measure the normal return; (iv) estimate the abnormal return; and (v) test whether the abnormal return is statistically significant.[11]

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[9] The nine stock markets cover 16 countries. The Bourse Régionale des Valeurs Mobilières (BRVM) is the regional stock market for the eight WAEMU (French Speaking) countries comprising Benin, Burkina Faso, Cote D'Ivoire, Guinea-Bissau, Mali, Niger, Senegal, and Togo. The other eight stock markets covered are in Botswana, Ghana, Kenya, Namibia, Nigeria, South Africa, Tanzania, and Uganda.

[10] Several models have been used in the microeconomic and finance literature to empirically estimate stock returns around specific events. These include the constant mean return model, the market model, the capital asset pricing model (CAPM), and the arbitrage pricing theory.

[11] An event window is the period surrounding the event and it includes at least the day or month of announcement of the event (day/month 0), the day or the month before (day/month –1) and the day or the month

(continued…)

This study adopts the market model, which provides a linear specification of the return of the given stock to the return of the market portfolio. This model is adopted because it reduces the variance of abnormal returns by removing the portion of the stock return that is related to variation in the market return.[12] The market model is specified as:

$$R_{it} = a_i + b_i R_{mt} + \varepsilon_{it} \tag{1}$$

Where: R_{it} and R_{mt} are the returns on stock i and the market respectively at time period t. ε_{it} is the error term.

Equation (1) is estimated over a period of eighteen months before the event to four months before the event to estimate the normal returns.

The abnormal return is obtained as:

$$AR_{it} = R_{it} - \left(\hat{a}_i + \hat{b}_i R_{mt}\right) \tag{2}$$

The abnormal return is the error term of the market model calculated on an out-of-sample basis.

Abnormal returns are averaged across the observations for period t for all events N using:

$$\overline{AR}_t = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \tag{3}$$

These average monthly returns are tested for significance according to:

$$t\overline{AR} = \overline{AR}_t \Big/ S_{e_{it}} \tag{4}$$

Where: Seit = [var(AR_t)] with var estimated over the eighteen months before the event to four months before.

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after the event (day/month +1). The normal return is the expected return without the occurrence of the event, usually estimated over a period of about 120 days (or 4 months) before the event to prevent the event from influencing the estimates. The abnormal return is the difference between the actual ex post return of the stock over the event window and the normal return of the firm over the event window.

[12] See Appendix 1 for the detail model specifications.

In addition, cumulative average abnormal returns (CAR) were calculated for the five-month event window from month -2 to month +2.

$$CAR(T_1, T_2) = \sum_{t=T_1}^{T_2} \overline{AR}_t \qquad (5)$$

$CAR_i(T_1, T_2)$ is the sum of the average abnormal returns from time T_1 to T_2 where $T_a < T_1 \leq T_2 \leq T_b$. T_a is the upper limit and T_b is the lower limit of the event window.

These CARs were tested for statistical significance using:

$$tCAR(T_1, T_2) = CAR(T_1, T_2) \Big/ \left[\mathrm{var}(CAR(T_1, T_2))\right]^{1/2} \qquad (6)$$

with variance estimated over the eighteen months before the event to four months before the event.

This study also performs a nonparametric sign test of the abnormal returns. The sign test is based on the sign of the abnormal returns, and it requires that the abnormal returns (or cumulative abnormal returns) are independent across securities and that the expected proportion of positive abnormal returns under the null hypothesis is 0.5. The null hypothesis is H_0:p ≤ 0.5 and the alternative is H_A:p > 0.5 where p = pr[$AR_i \geq 0.0$].

The test statistics are:

$$\theta_2 = \left[\frac{N^+}{N} - 0.5\right]\frac{\sqrt{N}}{0.5} \sim N(0,1) \qquad (7)$$

N^+ is the number of cases for which the abnormal return is positive and N is the total number of cases. For a test of size (1-α), H0 is rejected if $\theta^2 > \Phi^{-1}(\alpha)$.

B. Data

The nine stock markets of sixteen SSA countries with regional cross-listings, namely Botswana, Cote D'Ivoire/WAEMU, Ghana, Kenya, Namibia, Nigeria, South Africa, Tanzania, and Uganda, were selected (see Table 1 and Appendix Table 6). In all there are 48 regionally cross-listed companies in SSA. 31 companies have primary listing on the JSE South Africa; three on the Nairobi Stock Exchange, Kenya, one on the WAEMU Bourse Régionale des Valeurs Mobilières (BRVM), and one on the Nigerian Stock Exchange (see Table 2).

The sample size comprises seven stocks according to data availability for all the relevant variables (see Table 2 and Appendix Table 6). This consists of: (i) two out of the three cross-listed stocks with primary listing on the stock market of Kenya and secondary listing in

Uganda and Tanzania; (ii) one regionally cross-listed stock with primary listing on the WAEMU BRVM stock market and secondary listing in Nigeria and Ghana; (iii) one regionally cross-listed stock with primary listing on the Nigerian stock market and secondary listing in South Africa; and (iv) three regionally cross-listed stocks with primary listing on the JSE South Africa and secondary listing in Namibia and Botswana. The stocks are spread across the nine stock markets between 1995 and 2006. Other cross-listed stocks were dropped or replaced because of the lack of adequate pre-event data for the nonevent and the event window.[13]

V. Stock Price Response to Regional Cross-Listing of Stocks

Using the event study methodology, the study examines the impact of regional cross-listing on firm value, concentrating on the effect around the date of announcement or actual cross-listing of stocks.

The event study methodology in equations 1 to 6 is applied to the stock market data of cross-listed firms. The sample is constructed from data compiled from the Emerging Market Data Base and various SSA stock exchanges. A firm must have an identifiable announcement or listing date to be included in the sample. In addition, stock market data are required starting from 18 months before the announcement or cross-listing date and ending 12 months after the listing date.

Data on the monthly closing price and dividend are used to compute monthly total returns for each underlying stock, and price indices are used to compute the market returns. Data on closing prices, dividends and local indices were obtained from the Emerging Market Data Base. Announcement dates were not available for most of the stocks, and therefore the study used the date of listing which was obtained from the stock exchange directly or their official websites. The date of cross-listing is defined as the first date of activity on the stock in the country of secondary listing. To obtain abnormal returns, the study estimates a market model for each firm using monthly returns and a market capitalization weighted index for the stock market of each country. Market model parameter estimates are first estimated for the nonevent period (from month –18 to month –4) using ordinary least squares (OLS) regression. Abnormal returns are determined by the prediction errors from the OLS market model (equation 2). Parameter estimates from the nonevent window model are used to calculate abnormal returns from month –2 to month +2.

Table 4 presents the results of the event study of the market reaction to the regional cross-listing of stocks. Abnormal returns around the date of regional cross-listings are positive and statistically significant. This shows that cross-listing increases firm value. The returns at the event itself are significantly positive. For month –1 the average abnormal return is 21 percent

[13] For example, Ecobank gave birth to Ecobank Transnational Corporation and got it listed the same day on the three West African Stock Exchanges. Therefore, there was no pre-event stock market data for Ecobank Transnational. As a result of this, stock market data for Ecobank was used. Similarly, Nictus was cross-listed on the Namibia Stock Exchange at the opening of the exchange for trading without any pre-event stock data and so was dropped.

(median = 5.22 percent) with a t-statistic of 22.36. The average abnormal return for month 0 is 10.6 percent (median = 7.33 percent) with a t-statistic of 11.60. For month +1 the average abnormal return is 4.13 percent (median = 1.86 percent) with a t-statistic of 4.50.[14]

Between month –2 and +2, a firm cross-listing on a regional exchange experiences a positive cumulative average abnormal return of 42.3 percent. The cumulative abnormal return is positive and statistically significant for month –2 to month +2 after the event (t=3.97). The result is consistent with the findings in Jayaraman et al. (1993), Domowitz et al. (1998) and Miller (1999) which indicate that firms earn normal returns following listing.[15]

Table 4. Average and Cumulative Abnormal Returns around Regional Cross-listing of Stocks

Relative Event Month	Average Abnormal Return	T-Statistics	Percent Positive	Median Abnormal Return	Minimum Abnormal Return	Maximum Abnormal Return	Cumulative Abnormal Return
–2	0.0279**	3.04	0.71	0.0162	-0.01418	0.0954	0.0279
–1	0.2051*	22.36	100ĩ	0.0522	0.00723	1.1753	0.2330
0	0.1064*	11.60	100ĩ	0.0733	0.00486	0.4452	0.3394
1	0.0413*	4.50	100ĩ	0.0186	0.00779	0.1126	0.3807
2	0.0427***	4.65	0.86	0.0116	-0.00204	0.1386	0.4234
Average price rise:							
Month –1 to 0	5.04%						
Month 0 to + 1	3.89%						
Month –1 to + 1	9.13%						

Note: *,**, and *** represent significance at 1%, 5% and 10% levels respectively.
ĩ ĩ ,ĩ represent significance of the signed rank test at 1% and 5% levels respectively.

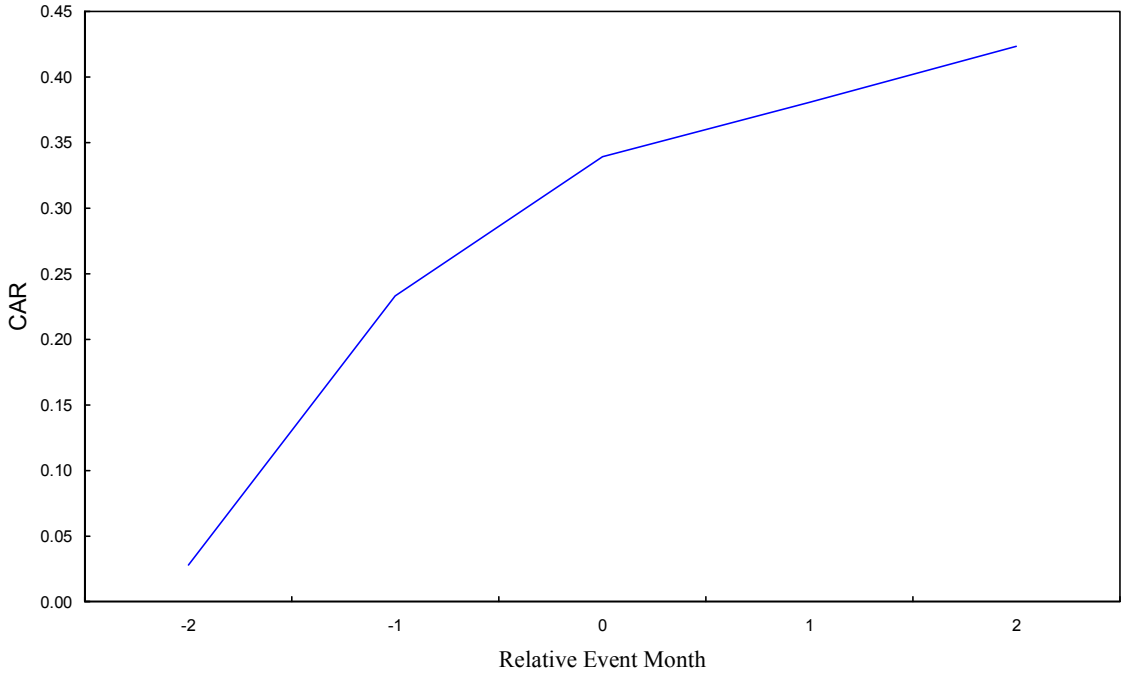
The abnormal returns around the three-month event window (–1 to +1) are 100 percent positive. For the five-month event window, the positive abnormal returns are more than the 0.5 (50 percent) benchmark. The results of the sign-ranked z statistics for months –1 to +1 is 2.64.
In addition, share value increased by 5.04 percent between month –1 and 0 and by 3.89 percent between the month 0 and +1. Share value increased by about 9.13 percent over the 3-month event window (between month –1 and +1).

[14] The study also computes the average abnormal returns after excluding Ecobank from the sample and the results are presented in Appendix Table 7. The average abnormal returns and the signs are similar to those reported in Table 4 above and for brevity are not discussed.

[15] This is also consistent with the findings in Olowe, 1998, Oludoyi, 1999, Adelegan, 2003, 2006 and 2007 indicating positive abnormal returns around announcements of stock split, earnings, dividend, political succession and board changes.

Overall, the study finds positive abnormal returns around the date of the regional cross-listing of stocks. This provides evidence that firms benefit from listing outside their home market (Figure 1).

Figure 1. Cumulative Abnormal Returns Five Months Around the Date of Regional Cross-Listings



To test for the robustness of the results, Table 5 presents the results of the event study of the market reaction to the cross-listing of stocks by firm and country. Abnormal returns for three months around the date of regional cross-listings are positive and statistically significant for all the stocks analyzed. This underscores the fact that cross-listing increases firm value.

However, abnormal returns varied among firms and among the stock markets of the countries in the sample. The highest abnormal returns are obtained from the cross-listing of Ecobank on the three West African Stock Exchanges. Returns at the event itself are significantly positive. For month –1 the abnormal return is 117 percent, for month 0, the abnormal return is 44.5 percent, and for month +1 the abnormal return is 13.9 percent. All are statistically significant at the one percent level of significance. This suggests that abnormal returns are higher around cross-listings in the stock market of countries where cross-listings are market driven than where cross-listings are government policy induced.

For Oando Oil, cross-listed on the Nigerian Stock Exchange and the JSE, the abnormal returns for the three months around the date of the cross-listing are positive and statistically significant. For month –1 the abnormal return is 5.2 percent, for month 0, the abnormal return is 10.4 percent, and for month +1 the abnormal return is 2 percent. For the events of

the regional cross-listing of East African Breweries and Kenya Airways on the Stock Exchanges of Kenya and Uganda, abnormal returns are positive and statistically significant around the event window. For the regional cross-listing of East African Breweries, for month –1 the abnormal return is 8.1 percent, for month 0, the abnormal return is 7.3 percent, and for month +1 the abnormal return is 3.6 percent, and all are positive and statistically significant.

Table 5. Market Reaction to Regional Cross-Listing of Stocks

		Month/AR					
Country/Firm	Event Date	–2	–1	0	1	2	CAR
Kenya							
E. African Breweries	Mar. 2001	0.07859*	0.08077*	0.07328*	0.03634*	0.04650*	0.3155*
Kenya Airways	Mar. 2002	0.09544	0.08180*	0.09086*	0.09170*	0.09390*	0.4537*
WAEMU							
Ecobank	Jun. 2006	–0.0142	1.17530*	0.44520*	0.11260*	0.13862*	1.8576*
Nigeria							
Oando	Nov. 2006	–0.0083	0.05216*	0.10350*	0.01850**	0.00479	0.1708*
South Africa							
Afrox	Feb. 1995	0.0162*	0.01625*	0.01202*	0.00880**	0.01164**	0.0650*
Barloworld Ltd.	Sep. 1996	0.006896**	0.00723*	0.00486**	0.00779*	0.00571**	0.0325*
Ellerine	Mar. 1998	0.02064*	0.02230*	0.01474*	0.01321*	-0.00204	0.0688**

Note:*,**, and *** represent significance at 1%, 5%, and 10% levels.

For the cross-listing of Kenya Airways, for month –1 the abnormal return is 8.2 percent, for month 0, the abnormal return is 9.1 percent, and for month +1 the abnormal return is 9.2 percent, and all are positive and statistically significant.

The cross-listings of South African firms with primary listing on the JSE and a secondary listing on the NSX also yielded abnormal returns that are positive and statistically significant around the event of the cross-listing. For example, for the cross-listing of Afrox, for month –1 the abnormal return is 1.6 percent, for month 0, the abnormal return is 1.2 percent, and for month +1 the abnormal return is 0.9 percent. As earlier discussed, South African firms listed on the Namibia Stock Exchange have been motivated by the imposition of capital controls on portfolio flows and by domestic investment requirements set by the Namibian authorities in an attempt to keep the large surpluses of the country's pension and insurance funds invested in Namibia. By cross-listing, South African firms were able to qualify as Namibian investments. The abnormal returns associated with these listings are smaller than the abnormal returns associated with other cross-listings among other stock markets within the SSA region. The abnormal returns are therefore not "rent"[16] linked to being able to circumvent capital controls on portfolio flows.

[16] the payment received for a factor of production such as labor or machinery in excess of the amount needed to produce a good.

The study also analyzed the legal and regulatory frameworks of the stock markets in the countries of both primary and secondary cross-listings to see if differences in regulations affect the magnitude and signs of the abnormal returns. Appendix Table 8 presents the legal and regulatory framework for securities markets in SSA. All the countries have a basic legal and regulatory framework for their stock market, as well as a basic legal framework and code of corporate governance. The legal and regulatory frameworks for host and home countries are similar for many of the countries, e.g., Kenya, Uganda and Tanzania; and South Africa and Namibia. However, all abnormal returns for three months around the event windows are positive and significant irrespective of the legal and regulatory framework of the stock markets of the countries.

VI. Conclusion, Recommendations, and Policy Implications

The study presents evidence on the stock price impact of regional cross-listing. The returns for the entire sample are interesting because of their large size. Although returns varied among firms and stock markets of the countries in the sample, they are higher around cross-listings in the stock market of countries where cross-listings are market driven than where cross-listings are government policy induced. The positive announcement period effect, together with the normal post cross-listing performance, shows that regional cross-listing increases firm value. To foster an increase in regional cross-listings, appropriate and complementary action is required by both firms and policy makers. For firms to pursue regional cross-listings that are market driven, they need to improve on corporate governance, minimize information asymmetry, increase their net worth and harmonize their accounting and reporting format with international guidelines.

Given the importance of stock market development for economic growth, policy makers need to give due consideration to taking the necessary steps to further integrate SSA stock markets. Policy makers of both the countries of primary and secondary listings need the right policy handles to conceptualize, facilitate and steer regional cross-listing efforts by firms. Through complementary policy based efforts, policy makers can set the stage for regional cross listings and harness the numerous related benefits. These steps include the following:

- **Provide incentives to encourage corporate firms to consider the possibility of regional cross-listing.** These incentives should include reductions in the transaction and approval costs of regional cross-listing and relaxation of stringent cross-listing requirements.

- **Introduce policy measures that focus on shareholder protection and information, and the proper code and regulation of corporate governance.** Strong investor protection and transparency are prerequisites for capital inflows. Therefore, such measures are important if the stock markets are to make external capital available to firms with growth prospects and lower the cost of capital (Demirguc-Kunt et al. (2008).

- **Harmonize legal and regulatory mechanisms, such as bankruptcy courts and laws**. This is necessary to enforce contracts and ensure minority rights protection by SSA capital markets.
- **Harmonize listing rules, accounting laws and disclosure requirements across the region**. Common listing requirements and rules will facilitate cross-border listings. Transparency and accountability could be improved through moving to a common financial reporting system and accounting framework. A common accounting framework can lower the cost of maintaining multiple accounting frameworks for firms listed in, or obtaining financing from, different countries within the SSA region. For example, Botswana requires companies that have primary cross-listings in other exchanges and secondary listings on the BSE to comply with some aspects of their listing requirements.

- **Improve the regional flow of information and coordination and communication infrastructure to facilitate cross-listings.** The exchange of information between stock exchanges should be facilitated as regional cross-listing deepens. Efforts should be made towards improvement of communication infrastructure in SSA. Information about the stock market should be disseminated on a daily basis as is done by the developed markets.

- **Introduce regional integration policies that are aimed at removing artificial or policy induced barriers, particularly those that are legal, regulatory and institutional in nature.** Barriers[17] to entry can compartmentalize markets and hamper market liquidity and efficiency.

[17] Barriers between countries can range from structural factors (linguistic and cultural differences), economic factors (high fixed cost and network externalities) and policy induced factors (legal, regulatory, and institutional barriers).

This study has found that firms benefit from the regional cross-listing of shares outside their home market. Given the importance of stock market deepening in relation to economic growth, **the policy makers and stock market authorities of the countries of SSA should provide incentives to encourage corporate firms to make regional cross-listing an important objective.**

While the findings of our study remain valid, it has to be recognized that the current financial crisis is having a negative impact on stock market behavior through a stifling of investment, capital outflows and a shift of portfolio funds away from SSA.[18] In the face of this crisis, international and local investors are adopting a more cautious investment and risk management strategy. Risk was previously managed on historical data, but investors are now moving to a mark-to-market risk assessment/management approach, which is forward looking. Risk aversion and changes in risk assessment approaches will significantly slow down the speed of the market's response to cross-listing as a result of weakened international and local investor confidence in the stock markets.

To minimize the impact of investors' increased risk aversion and of the slow market response to cross-listing, policy makers should focus their efforts on:

- improving corporate governance laws and practices,
- minimizing information asymmetry, and
- harmonizing legal and regulatory mechanisms to ensure contract enforcement and minority rights protection by SSA capital markets.

[18] All the stock markets in SSA experienced a drop in their share value between September 12, 2008 and February 11, 2009 ranging from 7.1 percent for the Ghana Stock Exchange and 51.1 percent for the Nigerian Stock Exchange (Bloomberg).

APPENDIX I. MODEL SPECIFICATIONS

The market model is specified as:

$$\begin{aligned} & R_{it} = a_i + b_i R_{mt} + \varepsilon_{it} \\ \text{with} \quad & E(\varepsilon_{it} = 0) \\ & \text{var}(\varepsilon_{it}) = \sigma_{e_i}^2 \end{aligned} \tag{8}$$

where: R_{it} and R_{mt} are the returns on stock i and the market respectively at time period t. ε_{it} is the error term, a_i, b_i, and σ_{ei}^2 are the market model parameters.

Equation (8) is estimated over a period of eighteen months before the event to four months before the event to estimate the normal returns.

The abnormal return is obtained as:

$$AR_{it} = R_{it} - \left(\hat{a}_i + \hat{b}_i R_{mt}\right) \tag{9}$$

The abnormal return is the error term of the market model calculated on an out-of-sample basis. Under the null hypothesis, the abnormal return will normally be jointly distributed with a zero conditional mean and conditional variance $\sigma^2(AR_{it})$.

$$\sigma^2\left(AR_{it}\right) = \sigma_{e_i}^2 + \frac{1}{L_1}\left[1 + \frac{\left(R_{mt} - \overline{R_m}\right)^2}{\sigma_m^2}\right] \tag{10}$$

Where: L_1 is the estimation window which is the number of days or months used for the estimation and $\overline{R}_m$ is the mean of the market returns. If the estimation window is large, it can be assumed that the second component to the variance of the abnormal return is zero.

Abnormal returns are aggregated and averaged for period t for all events N using:

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{it} \tag{11}$$

For large estimation window, the variance of the abnormal returns is:

$$\text{var}\left(\overline{AR_t}\right) = \frac{1}{N^2}\sum_{i=1}^{N} \sigma_{e_i}^2 \tag{12}$$

To draw overall inferences for the event, average abnormal returns can be aggregated through time and across stocks to obtain cumulative abnormal returns (CAR). CAR is defined as:

$$CAR_i(T_{1,}T_2) = \sum_{t=T_1}^{T_2} \overline{AR}_t \qquad (13)$$

$CAR_i(T_{1,}T_2)$ is the sum of the average abnormal returns from time T_1 to T_2 where $T_a < T_1 \le T_2 \le T_b$. T_a is the upper limit and T_b is the lower limit of the event window.

For large estimation window, the distribution of CAR under null hypothesis is:

$$CAR_i(T_{1,}T_2) = N(T_2 - T_1 + 1)\sigma_{e_i}^2 \qquad (14)$$

The variance of CAR is:

$$\text{var}(CAR(T_1, T_2)) = \sum_{t=T_1}^{T_2} \text{var}(\overline{AR_t}) \qquad (15)$$

The null hypothesis that the abnormal returns are zero can be tested using:

$$\theta_1 = \frac{CAR(T_{1,}T_2)}{\text{var}(CAR(T_{1,}T_2))^{1/2}} \sim N(0,1) \qquad (16)$$

The distributional results is asymptotic with respect to the number of stock N and the estimation window $L_{1.}$

Table 6. Data Description for Event Study

		Firm	Total	Stock Included	Percent
Kenya	1	East African Breweries			
	2	Kenya Airways			
			3	2	67
WAEMU	3	Ecobank/Eco Transnational/1	1	1	100
Nigeria	4	Oando Plc	1	1	100
South Africa	5	Ellerine			
	6	Afrox			
	7	Barloworld	31	3	10

Ecobank is the Nigerian subsidiary of Eco Transnational.

Source: Compiled by Author

Table 7. Average and Cumulative Abnormal Returns around Regional Cross-listing of Stocks (excluding Ecobank)

Relative Event Month	Average Abnormal Return	T-Statistics	Percent Positive	Median Abnormal Return	Minimum Abnormal Return	Maximum Abnormal Return	Cumulative Abnormal Return
–2	0.0349*	3.81	0.83	0.0184	0.00690	0.0954	0.0349
–1	0.0434*	4.73	100	0.0372	0.00723	0.0818	0.0783
0	0.0499*	5.43	100	0.0440	0.00486	0.0909	0.1282
1	0.0294**	3.21	100	0.0159	0.00779	0.0917	0.1576
2	0.0268**	2.92	0.83	0.0087	-0.00204	0.0939	0.1844

Note: *,**, and *** represent significance at 1%, 5% and 10% levels.

Table 8. Sub-Saharan Africa: Securities Markets' Basic Legal and Regulatory Framework

Country	Botswana	WAEMU/ Côte d'Ivoire	Ghana	Kenya	Namibia	Nigeria	South Africa	Tanzania	Uganda	Zambia
Regulator										
Legal Framework	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Corporate Governance										
Legal Framework	Very basic	Very basic		Very basic		Very basic	Very basic	Very basic	Very basic	Very basic
Private Pension Funds										
Legal Framework		No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Source: IFC, Web sites of various stock exchanges.

REFERENCES

Adelegan, O.J, 2008a: The Impact of Changes in Board Composition on Shareholders Wealth: Evidence from Nigeria, African Journal of Economic Policy. Vol. 15 (1), June.

Adelegan, O.J, 2008b: Can a Regional Approach Accelerate Stock Market Development? Empirical Evidence from Sub-Saharan Africa, IMF Working Paper 08/281 (Washington: International Monetary Fund).

Adelegan, O.J, 2007a: Political Succession, Capital Market Performance and Firm Valuations in Nigeria, Ibadan Journal of the Social Sciences, Vol. 5(1), March, pp 17–27.

Adelegan, O.J, 2007b: Capital Market Efficiency and The Impact of Board Changes on Shareholders Wealth in Nigeria", Corporate Board, Roles, Duties and Compositions, Vol. 3, issue 2, pp 7–23.

Adelegan, O.J, 2006a: Market Reactions to Initiations and Omissions of Dividend on the Nigerian Stock Market, Ibadan Journal of the Social Sciences, vol. 4, No. 1, March, pp 47–59.

Adelegan, O.J, 2006b: Price Reactions to Dividend Policy Changes on the Nigerian Stock Market, African Journal of Economic Policy, Vol. 13, no. 2, Dec., pp 59–79.

Adelegan, O.J, 2003: Capital Market Efficiency and The Effects of Dividend Announcement on Share Prices in Nigeria', African Development Review, Vol. 15(2&3), Dec., pp. 218–236.

Ayadi, F.O, 1984: The Random Walk Hypothesis and The Behavior of Share Prices in Nigeria, Nigerian Journal of Economic and Social Studies, vol. 26, No. 1, (March), pp. 57–71.

Beaver, W., 1968: 'Information Content of Annual Earnings Announcements', Empirical Research in Accounting: Selected Studies, 1968, Supplement to Vol. 6 of Journal of Accounting Research, 67–92.

Bonnier, K and Bruner, R.F., 1989: "An Analysis of Stock Price Reactions to Management Change in Distressed Firms," Journal of Accounting and Economics, 11, 95–106.

Claessens, S., D. Klingebiel, and S. Schmukler, 2002: Explaining the Migration of Stocks from Exchanges in Emerging Economies to International Centers," Center for Economic Policy Research Working Paper No. 3301.

Cooper, J, 1982: World Stock Markets: Some Random walk Tests, Applied Economics, Vol. 14, pp.515–31

Demirguc-Kunt, A., T. Beck, and P. Honohan, 2008, "Finance for All? Policies and Pitfalls in Expanding Access," A World Bank Policy Research Report, (Washington: The World Bank).

Dickinson, J.P and K Muragu,1994: Market Efficiency in Developing Countries: a Case Study of The Nairobi Stock Exchange, Journal of Business Finance and Accounting, vol. 21(1), pp. 133–50.

Domowitz, I., J.Glen, A. Madhavan,1998: "International Cross-Listing and Order Flow Migration: Evidence from an Emerging Market", The Journal of Finance, Vol. 53, No. 6, (Dec.). pp. 2001–2027.

Fama, F.F., 1991: Efficient capital market II, The Journal of Finance, Vol. 46, no. 5, Dec., 1991, pp. 1575–1617.

Faruqee, H., 2007, "Equity Market Integration," in Decressin J.H. Faruqee and W. Fonteyne eds., Integrated Europe's Financial market, (Washington: International Monetary Fund).

Fox, A.F and Opong, K.K 1999: "The Impact of Board Changes on Shareholders Wealth: Some UK Evidence" Corporate Governance An International Review, Papers, Vol. 7, Number 4, Blackwell Publishers, United Kingdom.

Gandhi, D.K, A Saunders and R.S Woodward, 1980: Thin Capital Market: A Case study of The Kuwait Stock Market, Applied Economics, vol. 12, pp. 129–49.

Hargis, K., 2000: "International Cross-Listing and Stock Market Development in Emerging Economies," International Review of Economics and Finance, 9, pp. 101–122.

Hargis, K, P. Ramanlal, 1998: When Does Internationalization Enhance the Development of Domestic Stock Markets? Journal of Financial intermediation, vol.7(3), pp. 263–292.

Jayakumar, V, 2002: "Impact of International Cross-listing on Local Exchanges: Evidence from Chile", International Review of Finance, 3:3/4, pp. 189-211.

Jayaraman, N, Shastri, K, Tandon, K, 1993: The Impact of International Cross Listings on Risk and Return: The Evidence from American Depositary Receipts, Journal of Banking and Finance, vol. 17, pp. 91–103.

Levine, R and S. Schmukler, 2003: Migration, Spillover and Trade Diversion: The Impact of Internationalization on Stock Market Liquidity," University of Minnesota working paper.

MacKinlay, A.C., 1997: "Event studies in Economics and Finance," Journal of Economic Literature, vol. XXXV (March), pp. 13–39.

Matome, T.K (1998): The Price Discovery Process of the Namibian Stock Exchange and The Informational Content of the share Index, Savings and Development, No. 3, vol. XXII, pp. 283-301.

May, R., 1971: "The Influence of Quarterly Earnings Announcements on Investors Decisions as Reflected in Common Stock Price Changes, Empirical Research on Accounting: Selected Studies, 1971, Supplement to Vol.9 of the Journal of Accounting Research, 119–163.

Miller, D., 1999: "The Market Reaction to International Cross-Listings: Evidence from Depository Receipts", Journal of Financial economics, 51, pp. 103–123.

Olowe, R.A (1998): "Stock Splits and The Efficiency of the Nigerian Stock Market", African Review of Money, Finance and Banking, 1-2, pp. 97-125.

Oludoyi, S B (1999): Capital Market Efficiency and the Effects of Earnings Announcements on Share Prices in Nigeria, Unpublished Ph.D. Thesis, University of Ibadan, Nigeria.

Omole, D.O (1997): Efficient Market Hypothesis and the Nigerian Capital Market under Financial Liberalization: An Empirical Analysis, Unpublished Ph.D. Thesis, University of Ibadan, Ibadan, Nigeria.

Osei, K.A (1998): Analysis of factors affecting the Development of an Emerging Market: The Case of Ghana Stock Market, African Economic Research Consortium Research paper 76.

Patell, M.P., 1976: "Corporate Forecast of Earnings Per Share and Stock Price Behavior: Some Empirical Evidence", Journal of Accounting (Autumn), 246–276.

Parkinson, J.M (1987): The EMH and the CAPM on the Nairobi Stock Exchange, East African Economic Review, vol. 2(2), pp105-10.

Shah, H., A. Carvajal, G. Bannister, J. Chan-Lau, and I. Guerra, 2007, "Equity and Private Debt Markets in Central America, Panama, and the Dominican Republic," IMF Working Paper 07/288 (Washington: International Monetary Fund).

Tahari, A., P. Brenner, E.D Vrijer, M. Moretti, A.S. Senhadji, G. Sensenbrenner, and J. Sole, 2007, "Financial Sector Reforms, Prospects for Financial Integration in Maghreb Countries," IMF Working Paper 07/125 (Washington: International Monetary Fund).