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DETERMINANTS OF STOCK MARKET GROWTH AT THE NAIROBI STOCK EXCHANGE (NSE)

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ABSTRACT
Despite rapid Growth in establishment of stock markets in Africa, with the exception of South Africa, stock markets in Africa not only remain comparatively different from their developed counterparts in terms of growth.. Therefore there was need to investigate determinants of stock market Growth in Kenya. Four variables namely; corporate governance, regulatory framework, technology and capital inflows formed the backbone of this study. This study applied causal research design which enabled the study to test how independent variables influence stock market growth. The target population was capital market players comprising the NSE member firms, CMA and listed firms. The study used both primary and secondary data sources in gathering data for analysis. Descriptive statistical tools including SPSS and MS Excel were applied to analyze data. The study found that regulatory framework, technology, corporate governance and capital flows are key determinants of stock market growth. The study recommends that proper regulatory framework should be instituted in order to steer stock market growth at the Nairobi Stock Exchange.

Key Words: Corporate Governance, Regulatory Framework, Technology and Capital Inflows

INTRODUCTION
Stock market growth is a multi-faceted concept and a number of factors exist that influence stock market growth, identification of effective indices that influence stock market growth is important. Dailami&Atkin, (2009) tried to divulge key factors that can be substantial in developing economies. In investigation of effective agents on stock market, there are two criterion groups: macroeconomic criteria and institutional criteria. In macroeconomic approach, some criteria such as income growth, saving and investment, financial growth and inflation are considered. Additionally institutional approach, property laws, clearance and settlement issues, transparency and the inside information problems, taxation issues and accounting standards are evaluated. According to the World Bank (2010) and International Monetary Fund (2010), the Brazilian stock market rose by 40% to stand at 67% of total GDP by 2006. Despite this growth, the Brazilian market remains proportionately small as compared to other countries such as Chile (120%), Australia (140%), U.S.A (148%) or Hong Kong (904%). Additionally the Brazilian stock market saw a significant increase in the number of investors willing to transfer part of their savings from fixed income to stocks and mutual funds. According to Info Money (2010), the number of individual investors in the Brazilian stock market increased seven fold to 558,853 by 2010, representing a 555% growth over the last decade.

Statement of the Problem

Over the last decade there has been a significant growth in the number and size of stock markets in Africa. For example, the number of active African stock markets increased from 5% in 1960 to 18% by the end of 2006 (Ntim, Opong, Danbolt&Dewotor, 2011). Currently, there are 29 formal stock markets in Africa, and with further proposals to open new ones in a number of African countries (Moin, 2007; Databank Group, 2008; ASEA, 2012). The apparent substantial increase in stock markets in Africa can be attributed to the extensive financial sector reforms undertaken by a number of African countries (Rambaccussing, 2010).

However, despite the rapid growth in the establishment of stock markets in Africa, with the exception of South Africa, stock markets in Africa not only remain comparatively different from their developed counterparts, but also, pale into insignificance in comparison to other emerging markets (Alagidede, 2009; 2010; Ntim*et al*, 2011). First, they are small in size (Ntim*et al*, 2011). The total value of African stocks outside of South Africa was only 0.94% of world stock market capitalization, and 2.14% of all emerging markets stocks at the end of 2011 (World Federation of Exchanges (WFEs, 2012). Law and Habibullah, (2009) did a study to examine the determinants of financial development, using data from 27 economies during 2007-2010. They found that institutional quality is a statistically significant determinant of banking sector growth and capital market growth. More recently Josiah, Jacinta and Erick, (2012) conducted a study to investigate the determinants of stock market growth with emphasis on banking sector development, per capita income, stock market liquidity, macroeconomic stability, foreign direct investment and domestic savings as their dependent variables. Their study found that stock market liquidity, foreign direct investment and domestic savings are huge determinants of stock market growth.

According to World Bank Report (2010) the Nairobi Stock exchange is growing at an average rate of 5% per annum compared to 20% in other stock markets in developed economies in Europe. While global leading stock exchanges registered huge gains over the last decade owing to high range of products stock markets in developing countries still remain undeveloped (ASEA, 2012). In Kenya for instance Majority of past studies have looked into effects of micro-economic factors on stock market growth (Alagidede, 2010). There exists little or no literature on the determinants of stock market growth in Kenya thus this study helps bridge the knowledge gap that exists in this area of study. While stock market growth has inspired literally thousands of academic studies, only a few empirical studies of stock market growth have been carried out. Nevertheless, this study adds to the growing literature on the Kenyan stock market growth by examining the determinants of stock market growth.

Specific Objectives

i. To determine how regulatory framework influence stock market growth
ii. To find out how technology influence stock market growth
iii. To establish how corporate governance influence stock market growth
iv. To determine how capital inflows influence stock market growth

LITERATURE REVIEW

Theoretical Review

Technology Diffusion Theory

This theory was developed by (Rogers, 2003) and identified technology diffusion as a 'process in which an innovation is communicated through certain channels over time among the members of a social system'. In a study on stock market growth in sub-Saharan Africa, Yartey and Adjani, (2007) proposed that the adoption of a robust electronic trading system and a central depository system among others are key preconditions for addressing the prevalent problem of liquidity as these stock exchanges seek regional integration.

Lucas *et al* (2007) analyzed adoption of ICT in the New York Stock Exchange (NYSE) and concluded that the NYSE invested in ICT to create new resources for advantage and to enhance existing resources. According to the paper, ICT provides for efficient trade executions and adequate trading capacity, ensures a high quality securities market and reduces labour expenses and the demand for physical space. Levine (2009) proposed that stock market liquidity ability to trade shares easily which is facilitated by ICT play a key role in economic growth. Clemons and Weber (2010) examined the 1986 Big Bang reforms of the London Stock Exchange and argued that the adoption of ICT and the exchange's new screen based market were a strategic necessity.

Critical Review

Profilet, (2013) did a study to find out the determinants of share price volatility, such as what factors affect stock prices and what specific financial factors makes share prices more volatile. To answer these questions they choose data of 500 publicly traded firms from survey data base. They applied OLS regression technique to check the relationship between these variables. According to their results dividend yield has a positive strong relationship with share price volatility while on the other hand firm size has negative correlation.

Kemboi&Tarus, (2012) investigated the macroeconomic factors that cause stock market growth in Kenya for the period between 2000 and 2009, using quarterly secondary data. The error correction model was employed to estimate the association between the macroeconomic variables and stock market development. The study found that macroeconomic variables such as income level, banking sector development, and stock market liquidity are significant determinants of the growth of the Nairobi Stock market. In addition, the findings showed that macroeconomic stability is not a significant forecaster of the growth of securities market.

Conceptual Framework

Bogdan & Biklen, (2003) note that a conceptual Framework is a basic composition that consists of certain figurative blocks representing the observational, experiential and analytical aspects of a process or system being conceived. The interconnection of these blocks completes the framework for certain expected outcomes. In the following figure Regulatory framework, Technology, Corporate Governance and capital flows represent the independent variables while stock market growth is the dependent variable.

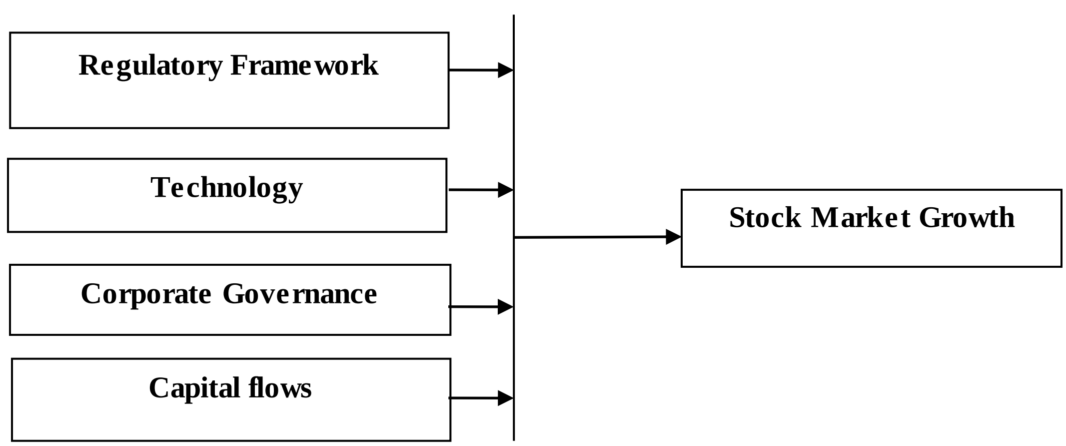

Figure 1. Conceptual Framework

Independent Variables **Dependent Variable**

RESEARCH METHODOLOGY

This study used a causal research design. Ader, Mellenbergh and Hand, (2008), notes that a causal design investigates the cause and effect relationship between two or more variables; it also measures the extent of relationship between the variables and specifies the nature of functional relationship between two or more variables. The study targeted companies listed at the NSE with 58 listed firms in Kenya as at 31st December 2013, (NSE, 2013). The target population of the study comprised the Capital market players i.e. the NSE member firms, Capital Markets Authority (CMA) and the listed firms. Random sampling

technique was applied to select the sample population. The choice of CMA and stock brokerage firms as the target population is justified by the rich information they have based on availability, accessibility, and reliability of the data. The study applied both primary and secondary data sources in gathering data for analysis.
The primary data source comprised of semi-structured questionnaires which were self administered. Secondary data was used to augment the data collected from the questionnaires given that the respondents might not have been precise or left out questions they considered discretionary. Secondary data was collected from journals and report (financial and non-financial) from both the CMA and the NSE. Before processing the responses, the completed questionnaires were edited for completeness and consistency data was then coded to enhance grouping of the responses. Data collected was both qualitative and quantitative and was analyzed through descriptive analysis including the mean, standard deviation, frequencies and percentages. Descriptive statistical tools such as SPSS and MS Excel were applied to help the researcher describe the data and determine the extent that it was used. The study used inferential statistics such as regression analysis and correlation coefficients to test this relationship.

RESEARCH FINDINGS

Regulatory Framework

This study found that Regulatory Framework plays a significant role in stock market growth with the results revealing that majority of respondents agreed to a great extent on the influence of Regulatory Framework on stock market growth with an average mean score of 1.7.

Table 1. Influemce of regulatory framework on stock market growth

Statement	Mean
The requirement that a firm should have involved in substantial same business and made profit for 3 years hinder listing of infant firms.	1.789
To what extent do capital requirements hinder firms from listing in the stock exchange	1.891
Regulatory framework increases customer's confidence in the companies	1.632
Average Mean	**1.771**

Technology

On whether technology influences stock market growth the study found that majority of respondents were of the opinion that technology influences stock market growth tm a great extent with a mean score of 1.5. (Table 2).

Table 2. Influeunce of technology on stock market growth

Statement	Mean
Electronic trading has impacted positively on stock market Growth in Kenya	1.531
The No. of securities traded have increased at the Nairobi Securities exchange after automation	1.612
Average Mean	**1.572**

Corporate governance

The study sought to determine how corporate governance influences stock market growth this variable was regressed against the dependent variable stock market growth with the output revealing that a unit change in Corporate Governance will lead to a 0.724 change in Stock Market growth illustrated in Table 5. This indicates that the independent variable is a strong predictor of the dependent variable.

Capital inflows

On whether Capital inflow affects stock market growth the study revealed that a unit change in the independent variable (Capital inflow) results to a 0.468 unit change in the dependent variable Stock Market growth as indicated in Table 5. In this case capital flows implies a moderate change in the dependent variable for any unit change in the independent variable .

Regression Analysis

Regression analysis were undertaken in order to investigate the determinants of stock market growth at the Nairobi Securities Exchange and to ascertain the associations and effects of regulatory framework, Technology, Corporate governance and Capital flows on stock market growth.

Table 3 Model Summary

Model	R	R-Square	Std. Error
1	.892[a]	0.796	0.494

a. Predictors: (Constant), Regulatory Framework, Technology, Corporate Governance, Capital Inflows

b. Dependent Variable: Stock Market Growth

Table 3 above illustrates the model summary results. It's evident that the four independent variables can predict 89.2% of the variations in the dependent variable (stock market growth). Likewise the coefficient of determination denoted (R^2) explains the extent of variation in the dependent variable (Stock Market growth) as explained by the four independent variables (Regulatory Framework, Technology, Corporate Governance, Capital flows). Table 1 above illustrates the results of the four independent variables that were studied. The four variables explain 79.6% of variance in Stock Market growth as represented by the R^2 this indicates good fit of the regression equation. It also implies that other factors not studied in this research contribute 20.4% of variance in the dependent variable.

Table 4 ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	4.294	4	1.246	9	0.001
Residual	1.493	8	0.486		
Total	**5.787**	**12**			

a. Predictors: (Constant), Regulatory Framework, Technology, Corporate Governance, Capital flows

b. Dependent Variable: Stock Market Growth

Table 4 above illustrates the ANOVA results regressing the independent variables against the dependent variable (stock market growth) gives a significant model in prediction given an F-significance value of 0.001. The F critical at 5% significance level was 3.54. Since F calculated is greater than the F-critical (value=9.0), this shows that the overall model was significant. The significance was less than 5%, demonstrating that the predictor variables, (Regulatory Framework, Technology, Corporate Governance and Capital flows) are significant.

Table 5. Regression Analysis

	Unstandardized Coefficients		Sig.
Predictor-Independent Variable	**Coefficients**	**Std. Error**	
(Constant)	3.564	0.521	0.000
Regulatory Framework	0.865	0.687	0.001
Corporate Governance	0.724	0.586	0.002
Capital flows	0.468	0.502	0.005
Technology	0.698	0.544	0.003

a. Predictors: (Constant), Regulatory Framework, Technology, Corporate Governance, Capital flows

b. Dependent Variable: Stock Market Growth Significance at 5%

The study applied regression analysis to determine the correlation between the independent variables and the dependent variable. Earlier studies by Yartey (2008) and Lazaridis and Trofornidis (2006) applied regression analysis while researching on relationship among variables. From Table 3 above the variables are statistically significant implying that the independent variables have an impact on stock market growth. From the regression results, the equation is presented as follows;

Y= 3.564+ 0.865 X1+ 0.724X2+ 0.468X3+0.698X4.

Table 5 above represents the regression model. Taking all factors constant (Stock Market growth, Regulatory Framework, Corporate Governance, capital inflows and technology) at zero, Stock Market growth will be 3.564. The results also show that Regulatory Framework was significant at p=0.01 with a unit increase in the dependent variable resulting to a 0.865 increase in Stock Market growth; a unit increase in Corporate Governance will lead to a 0.724 increase in Stock Market growth; a unit increase in Capital flows will lead to a 0.468 increase in Stock Market growth and a unit increase in Technology will lead to a 0.698 in Stock Market growth.

DISCUSSIONS

From this study it emerges that Regulatory Frameworkplays a significant role in shaping the performance of the stock market owing to the impact of the independent variable. According to Ngugi, (2003b) regulation of stock market players through a regulatory authority such as the capital markets authority to regulate the functioning of the stock market facilitates the smooth running of the market which contributes to better performance. For instance the Capital Markets Authority (CMA) formed 1990 through the Capital Markets Authority Act (Cap 485A) is mandated to develop the capital market by way of creating incentives for long term investment as well as protect investor interest by operating a fund to cushion investors from loss occasion by failure of a broker or a dealer in meeting their part of contractual obligation.

The introduction of new technology such as the central depository system (CDS) has enhanced trading of securities at the NSE. The CDS system has made it possible for investors to trade with stocks from the comfort of their homes and or offices leading to increased market activity. From this study it’s evident that technology influences stock market growth owing to the positive change in the dependent variable for a unit change in the independent variable. Ngugi, (2010) found that the capital market is still underdeveloped owing to limited listings, relatively low liquidity and still faces significant structural and regulatory weaknesses.

Corporate governance was found to influence stock market growth to a great extent with a unit change in the independent variable resulting to a 0.724 change in Stock Market growth. Therefore corporate governance should be observed both in the capital markets authority as well as by listed firms. Good corporate governance is fundamental for listed firms as it creates a positive perception of the firm to investors and this translates to better performance.

This study found that capital flows influences stock market growth to a moderate extent with a unit change in the independent variable resulting to a 0.468 change in the dependent variable. Whereas the change in the dependent variable was not significant past studies have revealed that participation of local investors is necessary to drive liquidity as it has a positive impact on returns. It also reflects confidence in the market in situations where information asymmetry exists between local and foreign investors.

RECOMMENDATIONS

The study recommends that proper regulatory framework should be instituted in order to steer stock market growth at the NSE. Proper regulation will ensure that all market players adhere to a set rules and procedures and any disputes are addressed within the laid down procedures.

On technology the study recommends that adoption of information and communication technology (ICT) in the operations of the security market is significant in sphere heading the NSE into growth to match other stock markets in developed economies. This will go a long way in attracting more investors as well as introduction of new products and services.

In addition, good corporate governance should be practiced both within the NSE and its affiliates as well as companies listed and would be listed at the NSE. The NSE should also ensure that companies prospecting to list in the stock exchange have board of directors with moral probity as this ensures that companies are run prudently and that board room wrangles are minimized among listed firms.
Finally the study recommends that the stock market players in collaboration with the government should stimulate growth at the NSE through incentives such as tax holidays, development of new products among other sustainable measures.

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