

**THE RELATIONSHIP BETWEEN STOCK MARKET PERFORMANCE AND  
ECONOMIC GROWTH IN THE EAST AFRICA COMMUNITY**

**BY:**

**ENOCK NYANARO NJENGA**

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## DECLARATION

This research project is my original work and has not been presented in any other university or institution of higher learning for any award.

Signature \_\_\_\_\_

Date \_\_\_\_\_.

Enock NyanaroNjenga

D63/75827/2014.

This project proposal has been submitted with my approval as the University supervisor.

Signature \_\_\_\_\_

Date \_\_\_\_\_.

Dr Duncan Elly (PhD, CIFA),

Lecturer, Department of Finance & Accounting,

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## **DEDICATION**

I dedicate this paper to the Almighty God, my parents, siblings, fiancée and friends for the love, inspiration and support that have been constant pillars in my life.

## ABSTRACT

The stock market has been connected to the economic development and growth over the obligation as the main sources of new capital. While, economic development might be the facilitator for stock market development, the stock markets are viewed as enhancing the economic growth through capital allocation and liquidity provision. The aim of the research was to assess the effect of the stock market performance on economic development in the East African community. The quantitative research methods were employed to define the nature of relationship between the variables. The populations of the study was the All-Share index in the 4 stock markets in the member countries. To fulfill the purposes under the research, the stock market performance of the EAC member countries was collected from the Capital markets, EASRA and the respective Stock Exchanges. Data for GDP growth was collected from the World Bank website. The study employed the Vector Autoregressive (VAR) model as well as the Granger test for causality to estimate as well as provide evidence regarding the nature and direction of relationship of the variables. The results indicated a significant long run association amid market capitalization and GDP growth. The relationship was negative in the short-term nonetheless constructive in the long-term. These results depict that an increase in stock market capitalization in the EAC contributes to the economic growth of the EAC in the long term. There was a long term constructive relationship between liquidity and GDP growth. Liquidity in the economy enables employment of high production techniques that are long term and enables the enjoyment of economies of scale. The VAR model on share price volatility indicated no significant linkages both in the short term and long-term to GDP growth. With the above results, it is recommended that the policy makers in East Africa Community should come up with policies and measures to ensure that more efforts are geared towards improving efficiency, lowering transaction cost and increasing liquidity in the East Africa Community securities markets with an objective to improve equity turnover. It is further recommended that policies to encourage more companies to list on the stock markets especially in Rwanda and Uganda to improve market capitalization and liquidity should be put in place to spur economic development. Whereas there was no noteworthy connection between share price volatility and growth in the economy, a stable macroeconomic environment is necessary to support the stock market action. With the establishment of the EASRA as well as the expected integration and financial deepening of the EAC economies, it is recommended that a further study on other factors influencing the economic development in the EAC be carried out to guide policy makers in developing measures to spur economic development in the region.

## **ABBREVIATIONS& ACRONYMS**

CMA Capital Markets Authority

DSE Dar es Salaam Securities Exchange

EAC East Africa Community

EASRA East African Securities Regulatory Authorities.

GDP Gross Domestic Product.

KNBS Kenya National Bureau of Statistics

NSE Nairobi Securities Exchange

USE Uganda Securities Exchange

RSE Rwanda Securities Exchange

VAR Vector Autoregressive Model.

VECM Vector Error Correction Model.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The market of stock is one of the most significant aspects of the economy as it offers long-term as well as short-term capital to companies and investment opportunities to both primary and secondary investors. Trading in the stock market is well organized and regulated by the Stock Exchange Authorities. The returns from equity investments vary to the movement of share prices which depend on various factors. The factors could be internal or firm specific such as earnings per share, dividends and book value or external factors like inflation, economic development, interest rates, foreign exchange rates as well as government regulation. An improvement in the stock market performance could indicate an improvement of the macroeconomic factors of a country while on the other hand; it could also be a consequence of economic growth (Barasa, 2014).

Economic theory proposes that there must be a stronger connection between economic action as well as prices of stock given that the price of the stock is the discounted present worth of a company's expenditure. However, this is not the case in certain instances. For example, the stock souk crash around the world in 1987 barely affected the economic growth of the USA, Spain, Hong Kong, United Kingdom and Canada as was widely predicted. The decline of 2009 nevertheless, activated a huge scale drip in stock prices that was mirrored in the Dow Jones as well as the S&P 500 (Fuentes-Nieva, & Pereira, 2010).

In EAC, the equity markets include; (NSE), (USE), (DSE) and (RSE). The EAC countries' have recorded improved economic act at an average of 3.7% during the past decade (Gigineishvili,

Mauro and Wang, (2014), Kaijage and Elly (2014) underscores that though financial integration has not deepened in EAC, there exists a strong significant relationship amongst EAC equity market returns. There is a need therefore to examine if the performance of the equity markets has played a role in the economic growth in EAC or if the act in the market stock is a consequence of the economic growth.

### **1.1.1 Stock Market Performance**

Stock markets generally refer to aggregation of buyers and sellers of stocks and securities. The transactions in a stock market are organized and regulated by stock exchange markets. Securities traded in the stock market are primarily either debt or equity. Debts traded include government and corporate bonds while equity securities include ordinary stocks (Duca, 2007).

The indicators of performance of a stock market include capitalization, liquidity and stock prices. Capitalization indicates the total market value of all shares that are registered as well as traded at the stock exchange. It is a product of the prevailing stock prices and number of shares issued by quoted companies. The capitalization therefore moves with movement in share prices. Liquidity refers to the extent to which the stock market allows trading of securities at stable prices whereas stock prices refer to the prevailing market prices for securities driven by the forces of supply and demand (Barasa, 2014).

### **1.1.2 Economic Expansion**

Economic expansion is usually described as the upsurge in the welfare of an economy as result of increased production of products as well as services over a specific time. This growth can either be measured in nominal terms or in real terms, which are inflation adjusted. There are various theories that put into light the important factors that are factored in when an economy

grows. The two common growth theories are the Sollow-Swan model (Exogenous growth model) and the Endogenous growth model. The distinct broad category for these models is the process of science and productive knowledge, growth of individual skills and incentives (Quah, 2001).

The growth in the economy is conventionally measured as the percentage increment in real gross domestic product (GDP). The GDP is the entire value of a nation's output (Quah, 2001). GDP is measured either by the expenditure approach or the income approach. The real GDP (inflation adjusted) provides a more reliable measure of economic growth as it takes into account the inflation factor which might exaggerate the extent of economic growth (Nyamakanga,2013).

### **1.1.3 Stock Market Performance and Economic Development**

The extent to which market stock performance impacts future economic expansion or vice versa is a topic of key interest and focus in economics and finance. It is generally assumed that huge decreases in market prices are a reflection of upcoming downturn whereas large increases in stock prices are possible indicators of future economic growth (Har, Ee, & Tan, 2008). For example, the world recession in 1987 was preceded by the stock market crash.

The stock souk has been linked to economic development over its part as sources of new isolated capital. While, economic development may be the reagent for stock progress (Osamwonyi &Kasimu, 2013).

Effective and developed stock souks are usually projected to theoretically increase savings by providing alternative investment vehicles to savers and investors to diversify their portfolios by managing the inherent risks and improving allocation of capital to productive sectors resulting to growth in the economy. Bencivenga&Smith (1991) argues that there is proof of more

developed equity market may offer liquidity that reduces the rate of foreign capital critical for economic growth (Kenny & Moss, 1998).

There is need to grow stock markets to provide opportunities for domestic resource mobilization which has been enhanced by the need to attract foreign direct investments. A viable and sound equity market increases the efficiency and competitiveness of the security markets. Lack of equity markets push companies to rely on internally generated funds for instance through retained earnings. While multinationals and established corporates have a wider pool of retained earnings with access to bank borrowing for investments, smaller organizations and corporates have limited access to finance (Senbet & Otchere, 2008). In certain circumstances, the retained earnings are not enough to undertake capital intensive investments. Such corporates issue commercial papers and bonds to the stock market after thorough due diligence, disclosure and scrutiny of financial statements. This helps in embedding good corporate governance practices as well as availing strategic information to the economy (Bernanke & Gertler, 1989).

#### **1.1.4 East Africa Community Stock Markets**

The Capital market was established the year 1950's with NSE in Kenya. Tanzania and Uganda recognized their own nationwide stock exchange; the (USE) and Dar es Salaam Stock Exchange (DSE) respectively in the 1990's. Rwanda later joined by the Rwanda Stock Exchange (RSE) in 2011. Plans are underway to develop a capital markets development framework that will support the establishment of a capital market in Burundi. There are four security markets in the EAC markets that trade in both fixed and equity revenue securities. Whereas the RSE and USE are still physical using the open-outcry exchange structure, the DSE and NSE are automated. Uganda has over the counter market (OTC) for management bonds unlike the other three partner

states. The performance of the stock markets in the EAC is on average 36% of the GDP (<http://www.eac.int/http://eac.int/sectors/financial/capital-markets>).

110 corporations are registered in the 4 exchanges; 62 on the NSE, 9 on the RSE, 21 on the DSE and 18 on the USE. At the end of the year 2011, the EAC stock exchange commanded a joint stock market capitalization of US\$ 22 Billion out of which, the NSE accounted for 55% of EAC stock market capitalization (<http://www.eac.int/http://eac.int/sectors/financial/capital-markets>).

According to McAuliffe, Saxena and Yabara (2012), the EAC is among the fastest growing regions in SSA in the past decade. During 2005-10, per capita growth rate averaged 3.7% in the EAC related to 3.2% for SSA as a total. The growth in Tanzania and Rwanda has been robust since the early 2000s while Kenya is slowly picking up since 2005. With the output growth, the average per capita income in the EAC reached US\$411 in 2010.

The performance of the stock marketplaces in the EAC in terms of market return and trading activity has been impressive over the recent period. Statistics indicate that the DSE, NSE and USE were the best performing stock markets in Africa in 2014 based on a yearly return index averaging 23.5%, 13.5%, and 12.5% respectively. The NSE, DSE and the USE were also among the top 10 most active stock markets in Africa with a weekly traded volume of 44.1m, 5.7m and 2.9m stocks respectively (<http://www.africanbusinesscentral.com>).

The World Bank Statistics (2010-2014) indicate a growth and improvement in the stock exchange markets in EAC. The number of listed firms, trading and market capitalization has significantly grown over the last ten years. All the member countries in the EAC apart from Burundi have developed stock markets that are regulated by the Capital Markets Authorities.

## **1.2 Research Problem**

The use of stock market performance as a ‘barometer’ for future economic activity has been an arguable subject in business as well as economics. The stock market is connected with economic development through its responsibility in efficient resource allocation to the productive sectors of the economies (Osamwonyi, 2005). Conversely however, the economic development may be the driver for stock market development. Stock markets are believed to be as impacting on the actions of the domestic monetary structure in overall as well as capital markets in specific (Kenny & Moss, 1998). The use of stock market as a predictor of economic growth is of great significance to plan decision producers and supervisory bodies in formulating and implementing policies that attract investments to a country or economic block in enhancing economic growth.

The general consensus is that there should be a positive relation between economic progression as well as monetary expansion. Stock markets in developing nations however are faced with various constraints such as thin trading, liquidity issues and lack of developed investor base (Yartey and Adjasi, 2007). Most stock markets in Africa are dominated by a single industry as the backbone of the economy. Often, the stocks for the industry accounting for the superior fraction of the GDP growth are not registered on the stock markets. This in most cases affects the linkage from the actual stock market performance to the growth of the economy. All countries in East Africa other than Burundi have stock exchange markets which provide a source of long term external financing. The Nairobi Stock Exchange is the oldest and most developed in the region in terms of market capitalization. The economy of the region is mostly driven by Kenya economy (World Bank Statistics, 2010-2014).

Various researches on this topic have yielded to different findings. According to Osamwonyi and Kasimu (2013), while there was no causal linkage of the stock market performance to the



economies of Nigeria and Ghana, there were fundamental linkages of stock market performance to the development of the economy. African stock souks are actually more of equity connections as the bond markets are fundamentally non-existent (Osaze, 2007). The growth of stock markets in Africa according to Kithinji, Oluoch&Mugo, (2014) has contributed to the development of the economy in many customs like facilitating long-term organization of capital.

Recent Studies by Nyamakanga (2012) and Owiti (2012), in the East Africa member countries have focused on the development of the stock markets with little or no emphasis on the performance of these markets. Related studies done on this topic has laid much emphasis on the market capitalization as the main variable of the stock market that impacts economic growth. Wahome (2010), Olweny and Kimani (2011) analysed the stock performance using the NSE 20-share index.

Plans to integrate the EAC stock exchanges commenced in 2012 with the establishment of the EASRA. The first move for integration was the development of the automated trading and clearing platforms. Though the financial integration has not deepened over the years, there exist significant relationships amongst EAC stock market returns with linkages hinging on the NSE and arbitrage opportunities across the stock markets Kaijage and Elly (2014). With the strong economic growth exhibited by the EAC countries over the past decade Gigineishvili, Mauro and Wang (2014), no research has been done in the EAC context to establish if the economic growth has been impacted by the vibrant stock market performance. This research therefore fills in the gap by establishing if the economic growth in EAC is being driven by the stock market performance or vice versa.

### **1.3 Research aims**

The main goal of the study is to assess the effect of the act of the stock market on the growth of the EAC economy. This was achieved by the following aims:

- I. To establish the existence of a relationship between performance of the market stock as well as development of the economy.
- II. To determine the direction and level of association between performance of the stock market as well as growth of the economy.

### **1.4 Value of the Research**

The findings of this research have huge policy implications for both the capital markets establishments as well as the nationwide governments. The insights provided by this research can be used by the East African community to focus on developing strong and efficient stock exchange markets as well as policies to foster investments and economic development of the region (Olweny and Kimani, 2011). This study is useful to EASRA in developing policies that promote the integration of the capital markets in EAC towards financial deepening of the East Africa market.

This study is relevant to investors and potential investors who are able to predict the future economic progression of a state by looking at the performance of the stock market. In the event of a positive relationship, investors are also able to predict the economic growth prospects by looking at the performance of the stock market country. In this way, the investors are empowered to make informed investment decisions. From the study findings, an increase in market capitalization and liquidity in the EAC stock markets signals an increase in GDP growth in the long run. Investors are therefore informed to make investment decisions.

This study is useful to social economies and market analysts in making informed interpretations, analysis and predictions of the future progression of the economy by looking at the movement of the securities market as well as that of the economy. The study is also relevant to academicians and researchers in doing further research as little work has been done on a similar topic.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This section is broken down into three parts. The first part of this chapter will look at the role of stock markets to the economy as well as relevant theories explaining the linkage of stock markets to the growth of the economy. Due to the limitation of theory on this linkages however, the study will evaluate at the general theory of monetary market development as well as economic development. Secondly, empirical studies on this topic by different researchers and scholars will be discussed. The last of this chapter will summarize key findings and identify the gaps this study intends to fill thus developing a conceptual framework for the study.

#### **2.2 Theoretical Framework**

This section looks at philosophies that have been developed to clarify the determinants of economic development and the connection thereof between stock markets variables and economic progression.

##### **2.2.1 Post Keynesian Growth theory**

This theory also identified as the Harrod-Domar Ideal from the work of Roy Harrod (1939, 1948) and Evsey Domar (1947) postulates that economic growth depends on policies to increase investments through savings and capital accumulation. It implies there is a slow down on economic growth in countries where there is plenty supply of labour with limited physical capital investments. Least developed countries don't have sufficiently low revenues to enable sufficient charges of savings and thus accretion of physical-capital stock though investments are low.

The relevance of this theory to this study is the strong link of economic growth to the resource allocation function of the stock markets. Funds availed through investments and savings are channeled to the creative segments of the budget to spur economic activity. The capital allocation function of the stock market according to this theory plays a big role in influencing economic growth. This therefore indicates a positive relationship of stock souks to economic development of a region.

### **2.2.2 The Neoclassical Growth Theory (Exogenous)**

This theory is also known as the Solow growth model which was postulated by Robert Solow as an extension of the Harrod-Domar model. The theory stipulates economic growth to be a factor of capital, labor and technology advancement. The theory assumes diminishing returns of factor inputs (labor and capital), where growth per unit increases with growth per unit capita at a diminishing rate. According to this theory, economic growth would be attained with the sufficient amount of these factors. In the absence of technological advancements, or where technology is held constant while labor rises at a steady rate, the rising labor will totally rely on the available capital stock for production. This leads to capital exhaustion as every unit increase in labor causes more use of capital hence diminishing return per output. Production per capita thus reduces.

The theory forecast a steady state of equilibrium where in the absence of technical progress, growth would be constant. Growth in this case would be accelerated if technological advancement takes place due to its influence on labor. This theory in effect means that labor and capital as economic factors will adjust automatically with technological advancements.

The relevance of this theory to the study is that physical capital accumulation through investments in the stock markets has a link to the economic growth of a country to a assured level beyond which further economic progression is supported by technological advancements.

### **2.2.3 Endogenous Growth Theory**

This theory holds that economic growth is driven by endogenic factors other than external factors. Unlike the Solow Model, the endogenous models consider technological advancement as endogenous factors with a significant impact on economic growth Kuznets (1973). This theory considers investment in technology, human capital and knowledge as important contributors to economic growth. The technological advancement is said to arise through increase in savings and investment as well as population growth which are influenced by the structural policies in an economy.

According to this theory therefore, economic growth is a positive purpose of the venture ratio and that the expansion of the economy of a region in the long-term depends on the policy measures enacted by the governments. Therefore Policy measures that promote the capital accumulation and investments through the stock markets have a positive impact on the economy.

This means that policies that enhance the development and performance of stock marketplaces encourage the economic progression of a country in the long-term. Policies enacted by the EASRA towards financial integration and deepening in EAC will greatly impact the economic growth of the EAC countries.

Bencivenga (1991) emphasized that financial markets are important in liquidity and investment risk management thereby attracting more savings into productive investments thus economic growth.

#### **2.2.4 Market Feedback Hypothesis**

Hypothesis explains that although a nation is still under low phase of development, stock souks are dormant as well as unfledged, and once development starts, the monetary souk surges (Bulere, 2015). Therefore the economic growth of a country is likely to spur the development and growth of the stock markets.

Hongbin (2007) decided that a two-way connection amid stock souk performance as well as economic development happens in China. He cited that the effect of the stock souk performance is more significant in the long-run than in the short-run. He indicated a need to strengthen the stock market since the performance of the stock market plays the role of national economy 'barometer',

On the other hand however, this theory gives credence to the assertion that stock markets in the developing countries are merely casinos with no relation to economic growth due to thin trading, liquidity issues and limited investor base (Yartey and Adjasi, 2007).

The theory therefore backs the argument that the linkage between the stock market performance and the economic development exist only in developed countries with a weak linkage established in developing countries.

#### **2.3 Determinants of Growth of the Economy**

The economy of a country or region is influenced by various factors. These factors if well enhanced influence to a great extent both the long term and short term development of the economy.

### **2.3.1 Stock Market Performance**

According to Singh (1997), the stock marketplace is anticipated to enhance growth in the economy through provision of a channel to enhance domestic savings and boost investments both in quantitative and qualitative terms. Levine and Zervos (1998) argue that the market stock maybe an avenue for generating domestic savings, as businesses and individuals may obtain supplemental financial instruments that meet their risk appetites and enhance liquidity.

Stock markets provide liquidity to the economy. Liquidity in the economy enables employment of high production techniques that are long term and enables the enjoyment of economies of scale which eventually stimulate economic growth Boyd and Smith (1998). Yartey and Adjasi (2007) also credit stock market liquidity's ability to enhance growth through information symmetry and improved governance structures in firms.

Stock markets enhance accumulation of savings through investments in various securities. Productive units in the economy are able to access these funds through issue of bonds or shares to finance their operational and investment activities. This eventually leads to economic growth. Stock prices reflected in stock markets are a driving force to resource allocation. Investors are more motivated to find out about highly priced stocks which are driven by the future earning potential of listed firms (Duca, 2007).

Stock markets offer the medium through which the market forces of demand and supply interact to determine the price of a marketable security. Stocks of more profitable and growth oriented companies have a high valuedue to the high demand for such stocks. This is useful to both the investors and the government in informing investment decisions (Singh, 1997).



Stock markets help in bridging the gap between seller and buyers of securities by providing market information to both individual and institutional investors. Firms are able to access readily available information on capital and investments options in a cost effective manner thus reducing the transactional costs of investment. Investors also acquire information to facilitate decision making from stock markets without having to spend on research (Yartey and Adjasi 2007). Investors are usually motivated to find out more about well performing securities thus enabling for efficient resource allocation. Ang and Mckibbin (2007) indicate that the stock market has the capability of identifying profitable investment projects on behalf of lenders and diversifying risks among these projects. This impacts the growth of the economy in the long-run.

### **2.3.2 Interest rates**

There exists a direct link between the rates of interest and economic growth because interest rates play the role of addressing the unfavorable elements in the economy that are detrimental to economic growth (Udoka, 2012).

High interest rates in the country however have an adverse effect on the development of a countries' economy. According to Udoka (2012), there existed a converse connection amid interest rates as well as economic growth in Nigeria at high interest rates. This is because the high interest rates stifle lending to the productive units of the economy thereby reducing the economic output.

### **2.3.3 Inflation**

Inflation is generally referred to as the persistence upsurge in prices of products as well as services. Economic theory identifies a direct link between inflation and the growth of a countries' economy. Macroeconomists, central bankers and policy makers argue that high

inflation exerts negative pressures on the economy due to its interference on the efficiency of the economy.

Inflation can lead to uncertainty about the profitability prospects of investment projects especially when it leads to increased price volatility. This leads to a reduction in investment spending than will then be the case, thus causing low investment levels as well as economic development (Hanif et al, 2004).

## **2.4 Empirical Review**

Schwert (1989) examined the relationship between economic activity as well as stock returns by researching the association between instability in economic activity and instability in stock prices. Using the data of each month, the model indicated that average instability improved by a substantial 189 per cent in periods of depression. More recent researches have also been carried out in developing countries to establish the extent and direction of relationship of stock markets to the economy.

Campbell & Viceira (1998) used the log-linear quality assessing structure to analyze the empirical association between prices of stock and yield. He regressed the log-price bonus percentage against productivity progression occasioning to statistically trivial results in Germany, France, UK, the US as well as Japan. Binswanger (2004) however reached a different conclusion using the OLS technique using development of business construction as the dependent variable and real stock returns as the descriptive variable for G7 nations. A statistically significant relationship was found for the G7 countries excluding France and Italy (Humpe and Macmillan, 2005).

Osei (2005) concluded that stock market causes economic development in Ghana where stock market variables (market capitalization ratio and market capitalization) were found to cause real GDP growth. This was carried out on a time series from 1991 to 2003 using the Vector Autoregressive (VAR) model and then subsequently using the granger causality test to establish the relationship.

Nieuwerburg et al (2006) investigated the outcome of the Mauritius stock market act on the growth of the economy. Using a time sequence data from 1989 to 2006, for market size and liquidity, that is a market capitalization and turnover ratios, to proxy recital of the stock souk, and economic development indicators like human capital and foreign direct investment were used. The findings validated the endogenous growth theory that in both long and long-term, performance in the stock market has a positive effect on economic growth of the country. A similar research carried out in India using the Ordinary Least Square (OLS) method by Nieuwerburg et al (2006) concluded that the stock souk was significantly related to the economic development before market liberalization. A negative association was however established in the periods after liberalization.

A study to evaluate the effect of stock markets on the economy of Pakistan by Nazir et al (2010) revealed a positive relationship of market capitalization and market liquidity to the economic growth from 1986 to 2008. The study found out that in the short-run, stock markets influenced economic growth which in turn enhances expansion of the stock souk in the longrun.

Anotherin depth analysis on the direction of connection amid stock market variables and economic growth for a time series of 1988 to 2005 in Nepal by Badr (2015) yielded a positive

association between stock souk variables (market capitalization to GDP ratio, turnover ratio to market capitalization and turnover to GDP ratio).

Kaplan (2008) as cited in Bulere (2015) did a related study on the association amid stock market performance and development of the Turkey's economy with quarterly data of 1987 to 2006. He used Johansen cointegration test along with granger causality tests. His findings exhibited a link amid stock marketplaces and the progression of the economy in the long-term. Uni-directional causality from the stock souk performance to economic progression was also revealed in the longrun.

Odhiambo (2010) found a fundamental linkage amid stock souk performance and economic progression variables in South Africa. The research variables were souk capitalization, price of traded stocks as well as income ratio for stock souk performance and used real GDP per capita as a proxy for economic growth. The research exposed a positive link both in the long and short term between the stock souk variables and development in the economy. Similarly, Vacu (2013) found a long-run link amid stock markets performance and economic growth in South Africa using the Johansen cointegration test and Vector Error Correction Model.

Closer home, Matu (2010) used the vector autoregressive technique to test the long-run connection amid stock market expansion and economic development in Kenya. GDP growth rate was utilized at the proxy variable for growth in the economy while the proxies for stock market growth were market capitalization and liquidity ratios to GDP. The results showed that a bi-directional positive connection amid marketplace capitalization as well as economic progression with no association amid liquidness and economic development. Nyamakanga (2013) on the other hand using the Johansen co-integration tests for long term relationship testing established

uni-directional causality between economic progression and stock souk development in Kenya. The direction of causality runs from the stock market expansion (stock market capitalization to GDP ratio) to economic growth (GDP growth rate).

Biyani (2012) in a study of the obligation of stock played by thesecurities market to the growth of the Tanzania's economy recognized a weak connotation amid souk capitalization and the progression of economy. This was attributed to the trading and liquidity constraints of the DSE which was recently recognized by the Capital Markets as well as Securities Act 1994. Bulere (2015) established no association between stock souk and economic progression in Uganda. Despite the steady growth of the economy from 1988, it was not practicable to trace the influence of the stock souk using the granger causality test. The Johansen test however showed that variables were co incorporated. There was a faster economic growth however noted from 1998 after the establishment of the Uganda Securities Exchange. This could further support Harris (1997) who argued that despite the faster growth of economies after opening stock exchanges, it is the efficiency in resource allocation rather than the physical capital accumulation that matters towards increasing economic output.

Makau, Onyuma and Okumu (2012) in a study on the effect of cross-border citation on stock liquidness in EAC established that the cross-listing improves a firm's stock liquidity both positively and negatively while in some cases the impact is not statistically significant. While the stock liquidity improved for Equity Bank, Nation Media and Centum investments, stocks liquidity for Kenya Commercial Bank declined after cross-listing.

Yabara (2012) argues that though market capital integration has not deepened in the EAC as expected, there is to some extent convergence of investment returns. The study discovered

common challenges of low capitalization and liquidity in the EAC capital markets but to different stages. Despite these challenges, the EAC countries through a regional approach have made some progress in developing domestic capital markets, removing restrictions on capital transactions and harmonizing market infrastructure.

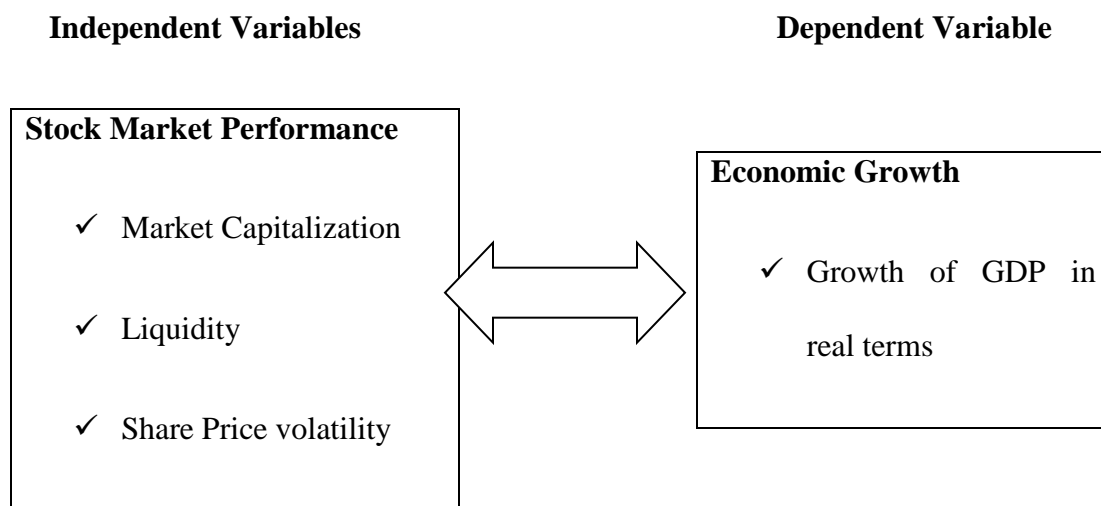
Osamwonyi and Kasimu (2013) focused their study on Kenya, Ghana and Nigeria with an aim of establishing the causal and direction of relationship using market capitalization, stock income proportion, stock trade worth and stock index as proxies for security market performance against real GDP as a substitution for development in the economy. The granger examination for causality was used with a time series of 1989 to 2009. The results showed no fundamental association between stock souks and economic progression in Nigeria and Ghana. For Kenya, a causal association was established which both unidirectional was and bidirectional. The unidirectional causality was discovered between the market capitalization variable and real GDP while the bidirectional was found in stock turnover ratio and GDP. A negative relationship was found between stock value traded and GDP.

Closer to the East Africa Community, Maghanga and Quisenberry (2015) studied the effect of the Uganda Stock Exchange on the progression of the economy using a 25 year time series before and after the opening of the stock souk using the Autogressive Distributed Lag (ARDL). The variables souk capitalization, value of shares operated and income proportion were used as proxies for stock market performance while real GDP was used for economic development. While an association was recognized amid economic development and the stock souk variables, the granger test of connection was indecisive.

## 2.5 Conceptual Framework

This section summarizes the stock market performance variables under study and their effect on the economic growth. The stock souk performance variables are the sovereign variables while the economic growth is the dependent variable. The stock market performance will be measured by the market capitalization, liquidity as well as the share price volatility as the independent variables while the economic development will be evaluated by the growth of GDP in real terms.

The conceptual framework developed by the literature review is illustrated as follows;



**Figure 2.1: Conceptual Framework**

## 2.6 Summary of Literature Review

A well performing stock market is essential in an economy. The resource allocation and capital provision function of the stock market plays a serious part in the economy. The endogenic theory of economic growth underpins the importance of internal factors in stimulating the economic growth of a region. In East Africa, Kenya boasts the most developed well capitalized and liquid stock market. While the USE and DSE were more recently established, various policy frameworks have been enacted by the respective Capital Markets Authorities to promote the development of the stock markets.

Recent studies of the stock exchange effect on developing economies have yielded conflicting results on the stock market variables impact on economic development. There is however a convergence on the positive impact of market capitalization on economic growth. The direction of long-term causality has also been established as mainly uni-directional.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The purpose of this study was to identify the connection amid the stock market performance and the economic progression in East Africa. This section highlighted the approach that the study used in establishing the causality connection and the course of association of the stock market variables (market capitalization, liquidity and share price volatility). The section looked at the study plan, populace, statistics gathering, data validity and examination.

#### **3.2 Research Design**

The study took into consideration the cause and effect approach to establish the relationship between the stock market performance and economic growth in the last fifteen years from 2000-2015. In this regard, therefore, quantitative research methods were employed to determine the nature of relationship between the variables. This period is suitable because it takes into consideration the most recent developments and policy impacts of the capital markets authorities on the stock markets. For instance, the NSE automation trading in 2006 integrated the Nairobi Securities Exchange with international markets in a bid to boost stock market development.

The cause and effect approach enabled the researcher to understand how the dependent variable is influenced by the independent variable. Cooper and Schindler (2006) points out that the use of cause effect simplifies the explanations and relationship of variables under research.

#### **3.3 Population**

Due to the small size of the population, there was no sampling. The population of the study is the All-Share index in the 4 stock markets in the member countries (Kenya, Uganda, Tanzania and

Rwanda). These increased the data validity and ensure representation of all the segments of the economy in the study. The performance of the East Africa economy measured in growth of real GDP will be considered (Mugenda&Mugenda, 2003).

### **3.4 Data Collection**

To satisfy the objectives of this study, the stock market performance of the EAC member countries was collected from the Capital markets, EASRA and the respective Stock Exchanges (USE NSE, RSE and DSE. Other sources of data for the economic reports and analysis were the annual Statistical reports by from the EAC website. The GDP growth is broadly accepted by economists and decision makers as a macroeconomic indicator of the economic status of a region (Biyani, 2012). Data for GDP growth was collected from the World Bank website.

The measure of stock market performance was the market capitalization, market liquidity and share price volatility. The yearly data on the market capitalization was collected from the NSE, USE, DSE and RSE while the yearly stock market liquidity was computed as ratio between the total price of stocks traded in that particular year to the stock market capitalisation. The data on the price of stocks traded and stock market capitalisation was collected from the respective security exchange markets. The yearly share price volatility was measured as an regular of the standard deviation of all the listed stocks in the EAC stock markets.

### **3.5 Model Specification.**

The Vector Autoregressive (VAR) model was used to approximate and provide the experimental evidence on the extent of association of the variables. This model provides a systematic, intelligible and trustworthy method to statistics explanation, predicting, organizational as well as policy examination. The ideal involves current and protected principles of numerous time

sequences as well as capability to seizure co-movements that cannot be distinguished in univariate as well as bivariate models.

Data collected was changed to logarithms and using the VAR model and subsequently converted into a linear equation as follows;

$$\Delta \text{GDP} = \alpha X + \beta_1 \text{MktCap} + \beta_2 \text{MktL} + \beta_3 \text{MktSpv} + \mu$$

$$\text{LogGDP}_t = \text{LogX} + \beta \text{LogMktCap}_t + \beta \text{LogMktL}_t + \beta \text{LogMktSpv}_t + \mu_t$$

Whereby:

$\Delta \text{GDP}$ - rate of progression in real GDP

MktCap-souk capitalization

MktL-Market liquidity

MktSpv-Market share price volatility.

### **3.6 Data Analysis.**

The variables in the linear equation were then converted into logarithms model to estimate the parameters of the VAR model. Data collected was then subjected to the following tests and analysis to discover the existence of a association between the variables under research.

#### **3.6.1 Test for Stationarity.**

This was performed to eliminate any biasness that is likely to emanate from the presence of unit origins in the variables under research. The stationarity of a sequence can powerfully affect the chattels of a variable. If 2 variables are happening in a specific period, a regression of one on the

other could give a high correlation even if the two are completely unconnected. This test was performed using the Improved Dickey Fuller (ADF) test procedure.

According to Sideris (2006), while performing econometric estimations, it is essential that the time sequence statistics for all the variables to be used be stationary and also integrated to the same order. A time series is stationary when its means and variance do not vary systematically over time. Weak stationary is preferred as the strict stationary is considered not viable (Gujarati, 2004).

Spurious regression exists where even though there is no association amid the variables under research, the test data display a noteworthy relationship amid variables in the reversion ideal. This situation is avoided through quantitative analysis (Olweny and Kimani, 2011).

### **3.6.2 Testing for Cointegration**

The Johansen cointegration examination was used to examine the likelihood of long-term association between the variables under study. This enables an analysis on whether the time sequences under study share a mutual stochastic meaning or not. This involves testing the co-movement of variables. When variables move together over time with a stable difference, then the variables are cointegrated.

### **3.6.3 Vector Error Correction Model (VECM)**

This is similar to VAR however it is restricted and is used to determine the speed the reliant on variable in this case GDP revenues to equilibrium upon changes in the explanatory variables. This is mostly used if the cointegration test proves a rough longrun association between the variables to determine the short-term undercurrents of the variables (Olweny and Kimani,2011).

### **3.6.4 Testing for Causality**

The Granger interconnection was used to analyze the direction of causation between the performance of the stock market and growth in the East Africa's economy. The findings from the test were used to create the cause outcome relationship between the variables under study. Variables used in this test will be assumed to be stationary (Granger, 1969).

According to Granger (1969), an existence of relationship between variables means that the variables can be used to interpret each other. For instance, in a case of two variable series X and Y, it can be said that X causes Y if Y can be better projected using the past ethics of both X and Y rather than only using historical values of Y. The causativeness test helps to ascertain the existence of relationship between variables.

### **3.6.5 Inferential Statistics**

Olweny and Kimani (2011) argues that the choice rule for the interconnection tests state that if the p-values of the estimates are higher than the 5% level, then the null assumption is not excluded while if the p-values are below 5% significance level, the null hypothesis is rejected. The interpretation is that if the p-values are higher than 5%, there is association or relationship amid the stock markets and the development of the economy. If the p-values are lower than 5%, there exists no connection amid the stock market variable and the economic development.

## CHAPTER FOUR

### DATA ANALYSIS AND PRESENTATION OF FINDINGS

#### 4.1 Introduction

This chapter presents analysis and findings of the study as set out in the research objective and research methodology. The general objective of the study was to evaluate the relationship between stock market performance and economic progression in the East Africa Community from the year 2000 to 2015.

#### 4.2 Descriptive Statistics

In section 4.2 the study presents the research findings on the descriptive statistics in the data collected.

**Table 4.1: Descriptive Statistics**

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
GDP Growth	64	0.2	13.5	6.3406	2.41613
Market capitalisation	64	0.4	55.8	22.5719	13.19637
Liquidity	64	0.1	19.4	3.6984	3.40222
Share price volatility	64	0.13	0.62	0.346	0.12896

GDP growth, market capitalization, Liquidity and share price volatility were the variables used for the study. Their mean, maximum, minimum and standard deviation in the four countries were taken into account. From the findings, the study found that there was a mean of 6.3406 for GDP growth, 22.519 for market capitalisation, 3.6984 for liquidity and 0.346 for share price volatility. On standard deviation market capitalisation had a standard deviation of

13.19637, an indication that it had the highest variation from the mean followed by liquidity with 3.40222, GDP growth had 2.41613 while share price volatility 0.12896.

### 4.3 Diagnostic Test Results

The researcher conducted various diagnostic exams help to ensure that the expectations of typical linear reversion model (CLRM) were not disrupted and to select the suitable models for examination in the event that CLRM expectations were negotiated. This segment offers the outcomes of the following diagnostic examinations: test of stationarity, cointegration test, vector error correlation and test for causality.

#### 4.3.1 Stationarity Test

In order to check for stationarity of the data, the study employed Augmented Dickey Fuller unit root test (ADF). If the statistics is established to contain unit root and require first difference in order to be stationary, then the variable in question will be deemed to have a long term association with the dependent variable and would therefore require a co-integration test to be conducted. The null hypothesis is that variable is not stationary.

**Table 4.2: Market Capitalization Unit Test**

Dickey-Fuller test for unit root		Number of obs = 15		
Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z (t)	-2.017	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.2791

In the case the null assumption is that market capitalization has a unit root. The Z-score yielded by the test displays that market capitalization has a unit root, because it falls in the acceptance interval (-2.017 < -3.000) at 5% significance level. In addition, the p-value (0.2791) was more

that the significance level (0.05). This is an indication that it has a long run relationship with GDP growth.

**Table 4.3: Liquidity Test**

Dickey-Fuller test for unit root		Number of obs = 15		
Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z (t)	-1.030	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.7422

In case the null suggestion is that liquidity test has a unit roots. The Z-score produced by the test displays that liquidity test has a unit root, because it falls within the acceptance interval  $-1.030 < -3.000$  at 5% significance level. In addition, the p-value (0.7422) was more that the significance level (0.05). This is an indication that there is a long run relationship between liquidity and GDP growth.

**Table 4.4: Share Price Volatility**

Dickey-Fuller test for unit root		Number of obs = 15		
Test Statistic	Interpolated Dickey-Fuller			
	1% Critical Value	5% Critical Value	10% Critical Value	
Z (t)	-3.923	-3.750	-3.000	-2.630

MacKinnon approximate p-value for Z(t) = 0.0019

In the null theory is that share price volatility has a unit root. The Z-score produced by the test displays that share price volatility has no unit root, since it falls in the disallowed interval  $-3.923 < -3.000$  at 5% significance level. In addition, the p-value (0.0019) was less that the significance level (0.05).



### 4.3.2 Test for Cointegration

**Table 4.5: Cointegration Model**

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_ce1						
q2	1	.	.	.	.	.
q3	-19.5385	1.026629	-19.03	0.000	-21.55065	-17.52634
q4	187.3081	9.414859	19.89	0.000	168.8553	205.7609
q5	28.33869	1.377632	20.57	0.000	25.63858	31.0388
_cons	-67.34068	.	.	.	.	.

**Table 4.6: Cointegrating Equation**

Cointegrating equations

Equation	Parms	chi2	P>chi2
_ce1	3	713.0293	0.0000

In null hypothesis is that there exist no cointegration between stock market performance and GDP growth. The p values generated in market capitalization, liquidity and share price volatility were less than the significance level (0.05). This is an indication that we will not reject the null hypothesis hence there exist a cointegration between market capitalization, liquidity, share price volatility and GDP growth.

### 4.3.3 Vector Error Correlation Model

**Table 4.7: Vector Error Correlation Model**

Vector error-correction model

Sample: 2002 - 2015	No. of obs	=	14
	AIC	=	10.00188
Log likelihood = -43.01319	HQIC	=	9.887797
Det(Sigma_ml) = .0054794	SBIC	=	11.23435

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_q2	6	10.8015	0.4483	6.50105	0.3695
D_q3	6	2.70826	0.6320	13.73783	0.0327
D_q4	6	.042109	0.5932	11.66712	0.0698
D_q5	6	2.83939	0.4250	5.9119	0.4331

From the above model, there was noteworthy association between souk capitalisation and GDP growth were significant since the ( $p < 0.05$ ) but there was no significant association amid liquidity, share price volatility and GDP growth since ( $p > 0.05$ ).

### 4.3.4 Testing for Causality

**Table 4.8: Test for Causality**

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
q2	q3	4.6518	2	0.098
q2	q4	.63018	2	0.730
q2	q5	.58709	2	0.746
q2	ALL	8.1152	6	0.230
q3	q2	12.815	2	0.002
q3	q4	1.9788	2	0.372
q3	q5	8.9398	2	0.011
q3	ALL	30.773	6	0.000
q4	q2	.94504	2	0.623
q4	q3	3.4991	2	0.174
q4	q5	2.8999	2	0.235
q4	ALL	12.325	6	0.055
q5	q2	1.7746	2	0.412
q5	q3	.14647	2	0.929
q5	q4	1.5815	2	0.454
q5	ALL	5.9806	6	0.425

Since the data was found to have a unit root, the Engel Granger test was used to test for causality. The zero hypotheses is that market capitalisation does not Granger-cause GDP growth rate should not be rejected as the p-value (0.098). Likewise we cannot discard the null proposition that the numbers on the two intervals of liquidity in the equation for GDP growth are equally zero (p-value=0.730). The third is a Wald examination that the numbers on the two intervals of GDP development that seem in the equation for share volatility are equally null hence we cannot reject the null hypothesis (p-value=0.746). The final test is with regard to the null proposition that the numbers on the two intervals of the other endogenous variables are jointly zero. Since the p-value (0.230) is more than 0.05, we will not reject the null hypothesis that market capitalisation, liquidity and share price volatility do not Granger-cause.

#### 4.4 Vector Autoregressive (VAR)

**Table 4.9: Coefficient of Determination**

Vector autoregression

Sample: 2002 - 2015	No. of obs	=	14
Log likelihood = 51.78976	AIC	=	-2.255681
FPE = 3.22e-06	HQIC	=	-2.407797
Det(Sigma_ml) = 7.19e-09	SBIC	=	-.6123903

Equation	Parms	RMSE	R-sq	chi2	P>chi2
Y	9	.13234	0.9466	248.348	0.0000
X1	9	.326854	0.5568	17.58724	0.0245
X2	9	.170701	0.9003	126.3845	0.0000
X3	9	.16738	0.5954	20.60074	0.0083

The Adjusted R squared is figure of purpose which signifies the difference in the independent variable due to changes in the independent variable, from the verdicts in the table beyond the rate of adjusted R squared for market capitalisation was 0.557 a suggestion that there was dissimilarity of 56% on GDP due to changes in market capitalisation. The adjusted R squared for liquidity was 0.900 a suggestion that there was variation of 90 % on GDP because of changes in in liquidity. The adjusted R squared for market capitalisation was 0.595 a sign that there was dissimilarity of 60% on GDP due to changes in share price volatility. All the variables were significant since p values were less than 0.05.

**Table 4.10: Regression Equation**

		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Y							
	Y						
	L1.	.4705863	.3004599	1.57	0.117	-.1183042	1.059477
	L2.	.3210797	.2059569	1.56	0.119	-.0825884	.7247477
	X1						
	L1.	-.0905185	.1244409	-0.73	0.467	-.3344181	.1533811
	L2.	-.2501137	.0636152	-3.93	0.000	-.3747973	-.1254301
	X2						
	L1.	.1892931	.2428391	0.78	0.436	-.2866627	.6652489
	L2.	-.1526004	.1734685	-0.88	0.379	-.4925925	.1873917
	X3						
	L1.	.5812321	.2491138	2.33	0.020	.0929781	1.069486
	L2.	.2758711	.1878861	1.47	0.142	-.0923788	.6441211
	_cons	-.3712808	.5394983	-0.69	0.491	-1.428678	.6861164

From the findings, the first lag of market capitalization was not significant however the second lag was significant (p-value=0.000). The first lag of share volatility was significant p-value < 0.05 however the second was not significant. The lag values of liquidity were not significant. The models are expressed as follows;  $Y = -0.371 - 0.091 + 0.189 + 0.581$

Where Y=GDP growth, x1=market capitalization, x2=Liquidity and x3=share price volatility.

#### 4.5 Discussions of Findings

The study established there was a significant long-term connection amid market capitalisation and GDP growth as depicted in the stationarity test; however the relationship was undesirable in the short-term run but positive in the long run. This is because market capitalization ratio was found to cause real GDP development as depicted on the Vector Auto-regressive (VAR) model and the granger causality test. The findings supported Nieuwerburg et al (2006) who carried out a study to establish the effect of the Mauritius stock market on the economic growing. Using a time series data from 1989 to 2006, for market size, that is a market capitalization to proxy stock

market growth, as well as economic development indicators like human capital and foreign direct investment were used. The findings differed with the endogenous growth theory that in both short and long run, stock market development had a positive effect on economic growth of the country.

It was also established that there was a long-term positive relationship between liquidity and GDP growth as depicted on the stationarity test but the causality test revealed that liquidity does not Granger-cause GDP growth. The results differed with Matu (2010) who used the vector autoregressive technique to test the long-term association amid liquidity and economic growth in Kenya where the liquidity ratios to GDP were used. The results displayed that there was no association between economic and liquidity growth. The findings further supported Biyan (2012) who in a study of the function of stock exchange souk to the growth of the Tanzania's economy established a weak connection amid market capitalization and economic growth. This was attributed to the trading and liquidity constraints of the Dar es Salaam stock exchange.

The stationarity tests revealed that share price volatility has no long run relationship with GDP and also share price volatility does not Granger-cause GDP growth rate. The findings differed with Gallant et al (2012) who used non-linear causality to test the non-linear causal relation between New York Stock Exchange (NYSE) stock market volatility and economic growth found evidence of strong nonlinear impacts from lagged stock return to trading volume but only weak evidence of a nonlinear impact from lagged volume to stock returns with economic growth. Maghanga and Quisenberry (2015) investigated the impact of the Uganda Stock Exchange share volatility on the economic growth using a 25-year time series before and after the opening of the stock market using the Autogressive Distributed Lag (ARDL). A correlation was established between economic growth and share price volatility.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Introduction

From the examination and statistics gathered, the following debates, deductions as well as recommendations were prepared. The answers were founded on the purposes of the research. The investigator had envisioned to define the connection amid stock souk performance and economic development in the East Africa Community.

#### 5.2 Summary of Findings

The objective of this study was to define the connection within stock marketplace performance and economic progression in the East Africa Community. It was established that the Z-score yielded by the test on market capitalization has a unit root, because it falls within the acceptance interval ( $-2.017 < -3.000$ ) at 5% significance level. The Z-score yielded by the test on liquidity test has a unit root, because it falls within the acceptance interval  $-1.030 < -3.000$  at 5% significance level. In addition, the p-value (0.7422) was more than the significance level (0.05). This is an indication that there is a long run connection within liquidity and GDP progression. The Z-score produced by the test displays that share price volatility has no unit root, because it decreases in the acceptance interval ( $-3.923 < -3.000$ ) at 5% significance level. In addition, the p-value (0.0019) was less than the significance level (0.05).

On cointegration, the values generated in market capitalization, liquidity and share price volatility were less than the significance level (0.05). This is an indication that we did not reject the null hypothesis hence there exist a cointegration between market capitalization, liquidity, share price volatility and GDP progression. There was significant relationship amid souk capitalisation and

GDP growth were significant since the ( $p < 0.05$ ) but there was no significant relationship between liquidity, share price volatility and GDP growth since ( $p > 0.05$ ).

It was established that market capitalisation does not Granger-cause GDP growth rate cannot be rejected as the p-value (0.098). The third is a Wald test that the coefficients on the two lags of GDP growth that appear in the equation for share volatility are jointly zero hence we cannot reject the null hypothesis (p-value=0.746). The final examination is with reference to the zero hypotheses that the figures on the two intervals of the other endogenous variables are jointly zero. Since the p-value (0.230) is more than 0.05, we will not reject the null hypothesis that market capitalisation, liquidity and share price volatility do not Granger-cause.

The value of adjusted R squared for market capitalization was 0.557 a sign that there was difference of 56% on GDP because of changes in market capitalisation. The adjusted R squared for liquidity was 0.900 a sign that there was difference of 90 % on GDP due to changes in in liquidity. The adjusted R squared for market capitalisation was 0.595 an indication that there was variation of 60% on GDP because of changes in share price volatility. All the variables were significant since p values were less than 0.05. The first lag of market capitalisation was not significant however the second lag was significant (p-value=0.000). The first lag of share volatility was significant p-value  $< 0.05$  however the second was not significant. The lag values of liquidity were not significant.



### **5.3 Conclusions**

This study has examined the relationship between GDP on market capitalisation, liquidity and share price volatility. The result for each indicators of the stock market development showed different magnitudes of impact on economic progression. Each parameter showed different ability to influence economic progression. The results indicated a significant long-term link between souk capitalisation and GDP evolution the connection was adverse in the short-run but positive in the long run.

These results show an increase investment in market capitalisation could lead to increase in GDP growth. There was a long run positive relationship between liquidity and GDP growth. Liquidity in the economy enables employment of high production techniques that are long term and enables the enjoyment of economies of scale. Finally share price volatility has no long run relationship with GDP. This shows that share price volatility is not a good proxy for stock market performance, therefore market capitalisation should not be used alone to concluded about the connection amid stock market improvement and economic progression.

### **5.4 Recommendations**

The study findings on the existence of relationship between stock market performances vide the market capitalisation and liquidity and the economic growth in the East Africa community indicate various implications on the policy makers.

The policy makers in East Africa Community should come up with a policy that makes sure that more efforts are geared towards improving efficiency, lowering transaction cost and increasing liquidity in the East Africa Community securities markets with an objective to improve equity turnover. This is because the link between the stock market and economic growth through equity

turnover was positive in the long run. The same policy too will improve total share traded which had a strong and positive effect on economic growth in Kenya in the long run.

The stock markets need to increase the number of listed companies from the current position which in turn increases the liquidity in the stock market. Stock markets liquidity in turn provide liquidity to the economy which enables employment of high production techniques that in long term increases investment opportunities and hence economic growth.

The policy makers should ensure they provide a good environment for share trading so as to ensure there is no stock volatility since a lower stock price volatility. Pace over a period of time which in turn does not negatively affect economic growth

### **5.5 Limitations of the Study**

The study was focused to the relationship between the performance of the stock market and the growth of the East Africa's economy. Various limitations were encountered during the research. In attaining its objective, the study covered a 16 years period starting from year 2000 to year 2015. The long period of study presented enormous data for analysis. Apart from the NSE, the other stock markets in the EAC were in their early stages of development by the year 2000. A number of operational changes through innovations and process automations have happened over this time and this could have had an impact on the recent stock market act.

The study only focussed on the stock market performance as the determinant of economic progression in EAC. While this was the objective of this study, there are other aspects that affect economic progression in the East African Community.

In the course of the study, it was noted that many corporations have cross registered in the EAC Security Exchange markets. This study did not evaluate the impact of cross listings on the overall market capitalisation and liquidity levels.

### **5.6 Suggestions for Further Study**

A similar study can be done for a more recent and shorter period putting into consideration the recent reforms and changes in the EAC stock markets.

The current study investigated stock market performance and economic progression; a study can be done on the aspects distressing stock market performance in the East Africa Community. A study can be done as well on other factors that affect economic growth in the East Africa Community.

It is also recommended that further studies be carried out on the impact of cross citation of securities on the act of the stock markets in the East Africa Community.

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## APPENDICES

### Appendix I: Kenyan GDP Growth and Market Performance

Year	Market Capitalization (MC)% GDP	Market Liquidity (ML)	Share Price Volatility (SPV)-NASI	Real GDP Growth (annual %)
2000	10.1	3.5	0.457	0.6
2001	8.1	3.8	0.481	3.8
2002	10.8	2.6	0.446	0.5
2003	28.0	4.8	0.428	2.9
2004	24.2	7.3	0.419	5.1
2005	34.2	7.9	0.382	5.9
2006	50.6	12.0	0.356	6.5
2007	49.3	8.5	0.25	6.9
2008	36.4	6.8	0.288	0.2
2009	36.6	1.8	0.231	3.3
2010	48.3	9.5	0.133	8.4
2011	34.5	9.0	0.198	6.1
2012	42.1	6.8	0.178	4.6
2013	55.8	8.1	0.154	5.7
2014	42.9	9.3	0.146	5.3
2015	33.0	4.6	0.126	5.6

## Appendix II: Uganda GDP Growth and Market Performance

Year	Market Capitalization (MC) % GDP	Market Liquidity (ML)	Share Price Volatility (SPV)	Real GDP Growth (annual %)
2000	0.4	0.3	0.512	3.1
2001	0.6	0.4	0.539	5.2
2002	0.7	2.4	0.498	8.7
2003	0.8	0.2	0.479	6.5
2004	1.0	0.3	0.469	6.8
2005	1.2	3.0	0.428	6.3
2006	1.2	5.5	0.399	10.8
2007	13.3	2.7	0.282	8.4
2008	21.2	2.0	0.323	8.7
2009	21.9	1.1	0.258	7.3
2010	14.2	0.4	0.249	5.2
2011	16.2	0.3	0.222	9.7
2012	19.5	0.2	0.299	2.8
2013	17.8	0.1	0.272	5.8
2014	20.1	0.2	0.264	5.9
2015	18.4	0.2	0.241	5.2

**Appendix III: Tanzania GDP Growth and Market Performance**

<b>Year</b>	<b>Market Capitalization (MC) % GDP</b>	<b>Market Liquidity (ML)</b>	<b>Share Price Volatility (SPV)</b>	<b>Real GDP Growth (annual %)</b>
2000	12.7	19.4	0.402	4.9
2001	14.5	2.5	0.528	6.0
2002	14.2	3.4	0.488	7.2
2003	16.8	2.9	0.470	6.9
2004	13.3	2.5	0.460	7.8
2005	17.4	2.3	0.419	8.2
2006	18.2	2.1	0.391	4.7
2007	16.3	2.4	0.276	8.5
2008	17.4	3.8	0.316	5.6
2009	16.8	2.7	0.253	5.4
2010	15.8	1.9	0.244	6.4
2011	30.2	2.1	0.217	7.9
2012	33.0	1.7	0.293	6.9
2013	31.2	4.2	0.267	7.0
2014	34.6	5.1	0.258	7.2
2015	36.5	6.4	0.336	6.9

**Appendix IV: Rwanda GDP Growth and Market Performance**

<b>Year</b>	<b>Market Capitalization (MC) % GDP</b>	<b>Market Liquidity (ML)</b>	<b>Share Price Volatility (SPV)</b>	<b>Real GDP Growth (annual %)</b>
2000	12.9	1.4	0.589	8.3
2001	14.1	1.6	0.620	8.7
2002	12.5	1.9	0.573	13.5
2003	24.6	2.2	0.551	1.5
2004	21.3	1.8	0.540	6.9
2005	20.1	3.2	0.492	6.9
2006	24.5	2.8	0.459	9.2
2007	23.4	2.5	0.324	7.6
2008	22.0	3.6	0.371	11.2
2009	26.2	2.1	0.297	6.3
2010	28.5	2.6	0.216	7.3
2011	26.3	1.3	0.215	7.9
2012	37.0	1.7	0.244	8.0
2013	29.1	8.0	0.213	4.7
2014	37.8	3.4	0.203	6.0
2015	32.0	5.6	0.211	6.5