THE EFFECT OF SELECTED MACROECONOMIC VARIABLES ON PERFORMANCE OF SECURITIES EXCHANGES IN THE EAST AFRICAN COMMUNITY

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DECLARATION

Its my declaration that this research project is my own work and has not been submitted for any degree or examination in any other institution.

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This research project has been submitted for examination upon my approval as the University Supervisor

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DEDICATION

This research project is dedicated to my family

ACKNOWLEDGEMENT

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ABSTRACT

Little consideration has been paid to understanding the impacts of macro-economic factors on the performance of securities exchanges and yet the effective understanding of such effects is central to the resourceful working on the financial system in totality and for overall economic performance. Securities exchange like any business entity operates in an external environment and its performance is affected by the macro-economic factors. The goal of this paper was to investigate the impact of selected macroeconomic factors on the performance of securities exchanges in East African Community. The paper adopted a census method where all the four securities exchanges in East African Community were surveyed. The paper used secondary data. Data was analyzed on the basis of the mean and the F test statistic was computed at 5% significance level. Descriptive research design was used on the grounds that the study involved inspiring conclusions. The target population in this examination included the 4 East African Community Securities Exchanges. The study confirmed that independent variables analyzed namely; economic growth, inflation rates, money supply, interest rates and exchange rates explain 48.9% of securities exchanges performance. The study made conclusion that selected macro-economic factors affect the performance of securities exchanges in the East African Community. The study recommends that policy makers should formulate policies which are geared towards the stabilization of inflation rates and interest rates as well as exchange rates which will in turn promote foreign trade in the East African Community. This paper suggests a similar research be carried out but focus on West African securities exchanges.

LIST OF ABBREVIATIONS AND ACCRONYMES

ASEA	African Securities Exchange Association
CMI	Capital Market Infrastructure
DSE	Dar es salaam Stock Exchange
GDP	Gross Domestic Product
IMF	International Monetary Fund
KNBS	Kenya National Bureau of Statistics
NBS	National Bureau of Statistics (Tanzania)
NISR	National Institute of Statistics of Rwanda
NSE	Nairobi Securities Exchange
PPP	Purchasing Power Parity Theory
RSE	Rwanda Stock Exchange
UBOS	Uganda Bureau of Statistics
USE	Uganda Securities Exchange

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Capital markets are markets for long-term finance. It is a market which deals with long term borrowing, lending and trading in financial instruments. Financial intermediaries involved include securities exchange, insurance firms, pension funds and mortgage companies. The stock trades are the unique commercial centers where held stocks and bonds are purchased and sold. These stocks can be in type of offers and debentures. Securities trades performance are ascribed to changes in macroeconomic factors. Large scale financial factors, for example, inflation, real exchange rate and cash supply significantly affect the securities trades performances (Bekaert & Harvey, 2000).

According to international fisher effect theory by Irving Fisher (Fisher, 1986), high interest rate in a country over time leads to high inflation rate hence currency depreciation. This arises due to the possible occurrence of a liquidity trap, a situation where very low interest rates prompts people to hold cash instead of investing in interest earning assets. Purchasing power parity theory by Coakleyet, al.(2005) argues that movements on exchange rates of two countries' currencies are contributed by fluctuations of relative prices over time and is reflected in the stock performances. The monetarist theory of inflation argues that, uncontrolled money supply into an economy leads to high inflation levels (Friedman, 1956). International fisher effect theory confirms that higher nominal exchange rate suggests expected inflation (Fisher, 1986).

The capital markets in East Africa face a number of challenges which are macroeconomic in nature and have significantly affected the stock market performance. Challenges such as inconsistency in the use of capital markets both domestically and regionally, weaknesses in the conduct of business by intermediaries, low financial and investment literacy and savings levels, limited innovation, inadequate supply of appropriate products are the key challenges facing the capital markets. In principle, changes in financial markets are as a result of the changes in macroeconomic environment could have a considerable impact on stock market performance (CMA, 2016).

1.1.1 Macroeconomic Variables

Macro-economic variables are the determinant factors which influence countries economic position regionally and globally. These macroeconomic variables include; economic output, unemployment, inflation, savings and investment. These factors guide the economic performance of a country to a greater extent and hence governments monitor the changes closely (Khalid et al., 2012). Macro-economic factors impact the economy as a whole while microeconomics affects decision making process at individual level of a firm or group.

According to Kwon and Shin (1999), interest rates, GDP, inflation rate and market risk have the highest level of influence on the economy. Gross domestic product which is the biggest macroeconomic variable is basically the aggregate estimation all things considered and benefits created in a nation inside a predefined timeframe, normally one year in fiscal terms. Inflation is the constant cost increment of goods and services prices because of financial and fiscal approaches, credit availability or shopper normalized

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average price. On the other hand, the rate of exchanging one currency for another is called exchange rate. Unemployment rate is a proportion of the aggregate number of people in labor power to the aggregate number of jobless people in the economy (Rjoub et al, 2009).

1.1.2 Performance of Securities Exchanges

Yartey and Adjasi (2007) observed that although the stock exchanges have continued to grow they are still small compared to those of emerging markets in terms of quoted firms and market exploitation. In Africa, only South Africa has been able to reach the world's market capitalization requirement (CMA, 2010). The EAC region's Capital Markets Infrastructure (CMI) was developed for connecting the clearing and settlements schemes for the securities traded amid the EAC member countries.

Creation of a single reliable and fully operational capital market has given regional investors a wide range of opportunities while the domestic issuers are able to pocket more capital due to increased investors. It has also attracted foreign portfolio investors of high level who wish to invest in East Africa. This has a positive regional economic impact due to creation of employment opportunities. When evaluating the performance of securities exchanges, we need to examine their level of efficiency and productivity. Efficiency is the level of deviation from the optimal production function (Chen,2001).In this point of view, proficiency alludes to the specialized effectiveness presented by Farell (1957), which is characterized as the capacity of a stock trade market to increase returns from a given set of resources.

Allocative effectiveness then again is the proportion of association's capacity to use the accessible inputs and yield optimal output, concerning their individual costs and the accessible level of innovation. The stock trade are in actuality budgetary organizations which give the offices and controls expected to complete exchanges, for example, the purchasing and offering of stocks and bonds rapidly, helpfully and lawfully (Dreher, 2006).

1.1.3 Macro-economic Variables and Stock Exchange Performance

Stock market is comprised of bullish investors, those who invest with speculation that price will increase in future and bearish investors who trade stock accordingly believing that stock market exchange conditions are not favorable for making profits. However, the two categories of investors aim on taking advantage of stock price fluctuations so that they can maximize profits (Mehwish, 2013). Fluctuations in stock prices are attributed to government policies, variations in macro-economic factors and performance of a firm. Macro-economic variables such as inflations, real interest rates and money supply have a considerable impact on economic growth and hence they should be closely monitored (McKinnon & Shaw, 1973).

Omondi (2016) studied how different macro-economic variables influenced the performance of the NSE. He set up that high inflation rates and instabilities in the trade rates declined the profits of the organizations recorded at the NSE. Wanyonyi (2015) affirmed that high inflation prompted the declined performance of the Nairobi Securities trade. Elly and Oriwo (2012) in their examination researched the relationship between the share trading system performance and macroeconomic factors in Kenya. From the

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examination discoveries, macroeconomic factors significantly affect the share trading system performance. As per Gobi (2015), macroeconomic factors altogether influence the performance of the securities trades comprehensively. The health of an economy will influence the performance of security markets in various ways. The Arbitrage Pricing theory for instance predicts the expected return of an asset to using the relationship between the expected return of a security and several macroeconomic variables as measured by systematic risk. Again, market forces of demand and supply influence discount rates, the capacity of a company in generating cash-flow plus the payment of dividends. Therefore, macroeconomic factors are part of the risk factors of any equities market (Rashid, 2008)

1.1.4. Securities Exchange in East Africa

Countries with stock markets in East Africa include; Kenya, Uganda, Tanzania and Rwanda. These stock markets trade bonds and equities. The Nairobi Stock Exchange (NSE) in Kenya was the first stock market in East Africa and it began its operations in back 1920's. The trading was based on gentleman's agreement and lacked formal trading floor. NSE begun in 1954 as a group of voluntary brokers and was registered under Societies Act (NSE, 2013) and served as EAC regional market.

In 1977, non-Kenyan firms were delisted from NSE due to collapsing of the East African Community. This forced Uganda and Tanzania to develop their own stock markets. In 1996, Dar es Salaam Stock Exchange was established facilitating capital market development in Tanzania (Ziorklui et al., 2001). Uganda also formed the Uganda Securities Exchange in 1994 and issued its first bond in 1995 (USE, 2013).

The securities exchanges in East Africa have been adversely affected by the macroeconomic variables, the net profits of the Nairobi securities Exchange dropped by six percent at the end of the year 2017 and this was occasioned by a tumultuous election saga at the end of last year 2017. Tanzanian Stock Exchange was hit as well by the legislation that requires all the mining companies to offload twenty five percent of the shareholding to the locals. In Uganda however, the Uganda securities exchange performed relatively better due to favorable economic conditions (CMA, 2017).

1.2 Research Problem

Little concern has been put to understanding the effects of macroeconomic factors on the performance of securities exchanges and yet the effective understanding of such effects is central to the resourceful working on the financial system in totality and for overall economic performance. Securities exchange like any business entity operates in an external environment and its performance is affected by the macro-economic factors. Favorable macro-economic factors have a potential of positively influencing the performance of the securities exchanges (Kwon & Shin, 1999).

The NSE has shed 25.5% of its value (KES 630 Billion) from January 2014 to December 2016 despite a stable exchange rate and inflation being largely within the predictable band. The value lost is equivalent to 10% of Kenya's GDP in 2016. This suggests to loading of exogenous factors while determining returns on the NSE. Companies listed on the NSE registered overall growth in 2015 in spite of global market challenges. The growth continued unabated as the country headed to the 2017 general elections. In Tanzania, Dar es Salaam Stock Exchange trading turnover declined in 2017 as a result of

low foreign exchange investments, elections in Rwanda led to the decline in the number of transactions in RSE however in Uganda, Uganda Securities Exchange recorded high trading volume as a consequence of better economic situations.

Dziwornu and Awunyo-Vitor (2013) did an investigation in Ghana to look at the connection amid macro-economic factors with returns on the Ghana Stock Exchange (GSE). They built up that stock trade performance and monetary development demonstrated a unidirectional causality. Pal and Mittal (2011) conducted an examination to decide the long-run association amid the profits on Indian Capital Markets and four macro-economic factors; rate of interest, exchange rates, inflation rates and the Gross Domestic Savings. The outcomes set up co-mix between the macroeconomic factors and the profits on the Indian stock trade files. Alraimony &El-Nader (2012) did an investigation in Jordan to build up how macro-economic variables affect the Amman Stock Market Returns. From the outcomes, Inflation and Real Exchange Rates demonstrated a negative and noteworthy effect on the profits of the share trading system. The shortcoming of these investigations is the utilization of the limited sample sizes.

Elly and Oriwo (2012) analyzed the connection between macroeconomic variables and securities trade performance in Kenya and inferred that macroeconomic factors essentially influence the stock trade performance. Kioko (2014) discovered macroeconomic factors on a very basic level affected currency markets performance in Kenya. There has been no basic accord on the impact of macro-economic variables on securities exchanges performance. A couple of examiners have surmised that macroeconomic factors essentially influence stock exchange market performance while

others found no vital impact. From the previous, all things considered, none centered around how chosen macroeconomic factors influence the performance of securities exchanges in East Africa. This makes a gap that tried to be filled by the present investigation which sought to get an answer to this study question; what could be the impact of selected macroeconomic variables on performance of securities exchanges in the East African Community?

1.3 Research Objective

The main objective of this research was to investigate the impact of selected macroeconomic variables on performance of securities exchanges in East African Community.

1.4 Value of the Study

This study is of pronounced significance to both researchers and academicians as it forms a basis of their research in this area. These two parties are able to build on this body of knowledge and come up with applicable actualities and meaningful deductions. It is an essential source of reference and gives them more awareness that helps in ascertaining any other present gaps for future study.

The study is of significant to companies on the need for stock market trading since it gives important insights on how the macroeconomic variables affects the performance of the stock exchanges. It acts as a basis for making investment decisions by investors. For instance, Bullish investors will always want to invest with adequate information and understanding of the stock market and the causes of price fluctuations.

By understanding how macroeconomic variables affect performance of securities exchanges in East Africa, policy makers for example the capital markets authority and NSE are able to design appropriate stabilization policies in the stock markets.

CHAPTER TWO

LITERATURE REVIEW

2.1.Introduction

This section puts forward a literature review on the impact of selected macroeconomic variables on performance of securities exchanges in East Africa Community, theoretical review, determinants of securities exchange performance and theoretical framework. A literature review summary is given at the end bringing out the existing research gaps.

2.2 Theoretical Review

The following theories are related to macroeconomic variables and they include; International Fisher Effect Theory, Keynesian Revolution – No self-correction, The Monetarist Theory of Inflation and Purchasing Power Parity Theory.

2.2.1 International Fisher Effect Theory

International Fisher effect hypothesis was created by Irving Fisher. It gives bits of knowledge on changes of trade rates after some time because of market loan costs rather than inflation rates (Fisher, 1986). He contended that swapping scale changes are counteracted by loan cost changes. The trade rates between a few nations are comparable prompting capital moves through arbitrage. High interest rates in a nation after some time prompts high expansion rate henceforth cash depreciation.

The International Fisher effect proposes contrasts in nominal interest rates shows the estimated fluctuations in the spot exchange rate amid different states. The theory particularly expresses that a spot exchange rate is relied upon to alter similarly in the contrary course of the loan cost differential; hence, the currency of the nation with the

higher nominal interest rate is required to devalue against the currency of the nation with the lower nominal interest rate, since higher nominal interest rate implies expected inflation (Bruce, 2011). The International Fisher impact hypotheses differentiates in nominal exchange rates demonstrates the normal changes in the spot conversion standard between nations. The hypothesis especially communicates that a spot conversion scale is depended upon to adjust comparatively in the opposite course of the advance cost differential; subsequently, the money of the nation with the higher nominal exchange rate is required to deflate against the cash of the nattion with the lower nominal exchange rate, since higher nominal exchange rate suggests expected inflation (Bruce, 2011).

Because of the direct link between interest rates and inflation rates, foreign currencies which have higher interest rates are likely to depreciate since nominal interest rates translate to the estimated inflation rate (Madura, 2010). The main question which has not been addressed is whether interest rates can project currency changes. However, there exists an association between interest rate changes and spot exchange rates in the long-run which does not exist in the short-run (Hill, 2004).

2.2.2. Keynesian Revolution – No self-correction

This hypothesis censures the classical self-correcting system in a few different ways. Demand adjustment is the inability of interest to modify due to financial feebleness (the inability of real GDP to react to an expansion in the real cash supply or a fall in the loan interest (Keynes, 1930). This emerges because of the likelihood of a liquidity trap in which to a great degree low interest rate makes individuals clutch any extra cash as opposed to obtaining interest earning resources and the likelihood that autonomous

expenses are exceptionally or absolutely insensitive to changes in the interest rate. Since both of these demand side issues are the consequence of the inability of adaptable costs to impact real output (Y) through the real money supply, they are known as the issue of monetary or deflation impotence. This Supply modification then again is the inability of supply to change because of inflexible wages (the inability of the nominal wage rate to alter by the sum expected to keep up balance in the labor market). Wage inflexibility will suggest a failure of the total supply curve to alter the economy to the long-run balance level.

Keynes' fundamental position was that financial analysts had been off-base to accept that they could comprehend the working of the economy overall by clarifying the workings of its segment parts. Assuming that the economy was seen as a framework, Keynes contended, it would end up obvious that the main driver of the depreciation was an inadequacy in total demand. The level of total income/yield and subsequently the level of output in an entrepreneur, free market economy, as indicated by Keynes, was resolved mainly by the ability of individuals to spend. If the aggregate sum individuals needed to spend was not as much as the sum which would prompt investors to utilize every single accessible asset, the level of income/yield would fall (Keynes, 1930).

2.2.3 The Monetarist Theory of Inflation

This theory argues that, uncontrolled money supply into an economy leads to high inflation levels which are termed as a monetary phenomenon (Friedman, 1956). According to Fischer (1986) the monetary theory of inflation is represented by the equation; MV=PT, where M represents Money Supply, V is money Velocity, P is the

price Level and T is the number of transactions. Due to impossibility of determining the number of transactions (T), it is substituted with (Y) which is the National Income. The new equation becomes $MV = PY$. This implies that the total cost for goods and services equates to total output always.

According to monetarists, excessive pumping of money into an economy leads to inflation. In the short term, the Velocity (V) is considered constant since the number of times employees are paid equates to the money circulation rate in the economy. Increase in money supply indicates that consumers have money to spend hence a shift in demand curve to the right leading to increase in output. The positive difference between National output and equilibrium creates an inflationary gap. Firms react by hiring more workers rising wages; thus, subsequently leading to increase in costs and prices (Fischer, 1986).

So, inflation proceeds at a comparable rate at which the cash supply develops. In this examination the aggregate supply is believed to be fixed and dependably there is full employment in the economy. Typically, when the money supply develops, it makes more interest in items but the supply of commodities cannot be increased due to the full employment benefits. This prompts increment in costs (Friedman, 1956).

2.2.4 Purchasing Power Parity Theory

This theory is also called the inflationary theory of exchange rates. It argues that movements on exchange rates of two countries' currencies are contributed by fluctuations relative prices over time. This implies exchange rate changes are due to changes in-absolute or relative price level. Converting local currency into foreign currency in absolute terms, it should retain its purchasing power and be able to purchase the same

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amount of goods and services as it could originally (Coakleyet, al., 2005). Purchasing power parity empowers one to check the conversion scale between two nations' monetary standards for the trade to be at standard with the obtaining intensity of the two states' money connected benchmarks. By use of the PPP rate for supposed money trade variations, an offered quantity of one cash has a comparable purchasing influence whether employed particularly to procure a market crate of commodities or employed to vary over at the PPP rate to the next money and after that utilization the money to purchase market basket (Coakleyet, al., 2005).

PPP exchange rates empower costing and to bar benefits and don't consider the differing idea of goods among countries. For example, it expects that two countries make indistinct physical proportions of goods from each other in each one of two given years. Because market exchange rates vary altogether, when the GDP of one nation evaluated in its own particular cash is varied over to the following country's money utilizing market trade rates, one country might end up having higher real GDP than the other nation in one year yet bring down in the other; both of these findings could mislead. This hypothesis is applicable to this study since firms recorded in stock trade securities import a few items and pay utilizing foreign currency henceforth influencing the performance of stock trade markets (Coakleyet, al., 2005).

2.3. Determinants of Securities Exchange Performance

Geethaet al. (2011), argued that macro-economic factors such as interest rates, inflation rates, investment, unemployment, money supply among others affect the performance of stock markets.

2.3.1. Exchange Rate

This is the rate at which one cash is traded for another. Changes in return rates impact the share trading system performance since the investors have the data. High changes consequently rate implied high improvements of market return unsteadiness. A couple of examinations have revealed that there is a strong correlation among trade rates and securities trade profits shakiness, while others found no relationship.

2.3.2. Inflation Rate

Inflation rates have both negative and positive effects on the economy. However, the negative effects are more rampant than the positive impacts. The negative effects include depreciation of real money value and other monetary factors. High inflation rates discourage investments and savings. Further, critical inflation rates can lead to hoarding of goods, hoping the prices will stabilize in future, which in turn lead to shortage of goods (Friedman, 1956).

2.3.3. Unemployment Rate

Unemployment rate is a situation where individuals who are not currently employed are actively looking for employment. It is a proportion of how predominance joblessness is in an economy and is ascertained by dividing the aggregate amount of people in labor force by the aggregate quantity of jobless people in the economy. Much the same as GDP, unemployment rate demonstrates the advancement and level of the economy. More individuals with occupations basically mean higher monetary yield, funds and venture. Along these lines, stocks fall or ascend with the great or terrible business reports (KNBS, 2017).

2.3.4 Corporate Governance

Corporate governance involves the practices that shape the behavior of managers of the organizations in achieving the organizational goals. The strategies developed will help the managers in planning, monitoring and evaluating its overall performance in the management of risks and any uncertainties. Good corporate governance practices aims at creating wealth for the stakeholders of the business entities. It will also ensure the rights of the shareholders are protected and shareholders are treated equally (Henry, 1997).

2.4. Empirical Review

A few examinations have been done with the point of revealing insight into the impact macroeconomic factors have on the performance of securities markets. Dziwornu and Awunyo-Vitor (2013) did an examination in Ghana to inspect the connection between returns on the Ghana Stock Exchange (GSE) All Share Index and monetary development utilizing yearly time arrangement information from 1990 to 2012. The researchers utilized the Granger Causality Test. The outcomes demonstrated a unidirectional causality between stock trade performance and monetary development.

Elly and Oriwo (2012) carried out a study to investigate the effect of macro-economic factors on stock market performance in Kenya. The independent variables employed include the inflation rates, T bill and lending rates. The study used the secondary data from March 2008 to March 2012. Data was obtained from NSE, CBK and KNBS for analysis and regression analysis was utilized. The results revealed thatinflation rates, T bill and lending rates showed noteworthy effect on the stock market performance in Kenya.

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Maku and Atanda (2010) decided to examine the long term macro-economic variables of securities trade performance in Nigeria, in range time of 1984 and 2007. The examination used the Augmented Engle-Granger co-joining test to choose the long run relationship having chosen unit root using Augmented Dickey-Fuller (ADF) unit root test. Five macroeconomic variables were considered. These are: Money supply (M2), Interest Rates (Treasury charge), Real GDP advancement rate, Inflation, and Exchange Rates. The aftereffects of the examination showed that each one of the components were co-composed; that each and every macroeconomic variable have a long run and noteworthy effect on the benefits of the Nigerian Stock Exchange All Share Index. Regardless, the researchers also said that over the long run, returns on the Nigerian Stock Exchange All Share Index were more responsive to trade rates, extension, cash supply and genuine GDP improvement.

Kimani (2016) studied how macroeconomic variables influence securities trade performance in Kenya. The self-sufficient components used include the inflation rates, interest rates and GDP. The examination used the secondary data for a multi-year time span from 2011 to 2015. Required information was procured from NSE, CBK and KNBS with utilization of regression analysis. It was found that macroeconomic factors fundamentally influenced currency markets performance in Kenya.

Pal and Mittal (2011) conducted an investigation to uncover the long-term connection between the profits on Indian Capital Markets (BSE Sensex and the S&P CNX Nifty) and four macro-economic factors; inflation rates, interest rates, Gross Domestic Savings and exchange rates. The researchers utilized quarterly time arrangement information from

January-1995 to December 2008. They conducted augmented Dickey - Fuller (ADF) tests, Engle-Granger co-reconciliation test and Error Correction Mechanisms (ECM) to determine long run and short term measurable elements. The results showed a co-incorporation between the macro-economic factors and the profits on the Indian stock market.

Wanyonyi (2015) study looked at the impact of macroeconomic factors on securities exchange execution in Kenya. The autonomous factors utilized incorporate the inflation rates, interest rates and unemployment rates. The examination utilized the secondary information for a multi-year of period from 2004 to March 2014. Information was acquired from Nairobi securities exchange, CBK and KNBS for examination and simple regression analysis used. Macroeconomic factors had insignificant impact on the share trading system performance in Kenya from the outcomes acquired.

Kigen (2014) researched on the influence on securities exchange performance by macroeconomic factors in Kenya using inflation rates, interest rates and unemployment rates while subordinate variable was estimated by NSE performance. The investigation utilized the secondary data from 2003 to March 2013. Secondary data was acquired and CBK for investigation. The study concluded that macroeconomic environment had insignificant effect on the securities performance.

Ismail, Pervaz, Ahmed and Iqbal (2016) looked to research the connection between securities exchange returns in Pakistan and chose macroeconomic factors which are Exchange Rate, GDP and Money Supply. The researchers utilized secondary data from

2003 to 2013. The outcomes demonstrated that real GDP had a noteworthy positive effect on the Karachi Stock Exchange Returns (KSE 100 Index).

Momanyi (2015) did an examination to look at the effects of macro-economic factors on securities exchange performance in Kenya. The autonomous factors utilized incorporate the inflation rates, interest rates and unemployment rates. The investigation utilized the secondary data for a multi-year period from 2004 to 2014. Secondary information was gotten from NSE, CBK and KNBS. From the information examination macroeconomic factors had inconsequential impact on the stock exchange performance in Kenya.

Otieno (2014) explored the effects of macro-economic variables on securities exchange performance in Kenya. The key factors utilized incorporate the inflation rates and interest rates. The investigation utilized the secondary information for a multiyear period from 2009 to 2013. Information was gotten from KNBS for analysis. The regression model demonstrated macroeconomic factors had huge impact on money markets performance in Kenya.

Quadi (2012) investigated impacts of Treasury Bill Rates and Industrial Production had on returns on the Dhaka Stock Exchange in Bangladesh. The researcher utilized month to month information from January 2000 to February 2007 by help of the Augmented - Dicky-Fuller test. He concluded that Treasury Bill had a positive impact on securities exchange performance.

2.5 Conceptual Framework

The goal of this paper was to examine the effect of selected macro-economic variables on the performance of securities exchanges in the East African Community. The independent variable was macroeconomic variables which were measured by economic growth, interest rates, rate of inflation, exchange rate and money supply whereas dependent variable was performance of securities which was measured by market capitalization.

Independent Variable   **Dependent Variable**

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┌─────────────────────────────┐                    ┌─────────────────────────────┐
│ Macroeconomic variables     │                    │ Performance of              │
│  • Exchange rates           │                    │ Securities                  │
│  • Economic growth          │   ────────────▶    │    • Market                 │
│  • Money supply             │                    │      Capitalization         │
│  • Interest rates           │                    │                             │
│  • Inflation rates          │                    │                             │
└─────────────────────────────┘                    └─────────────────────────────┘
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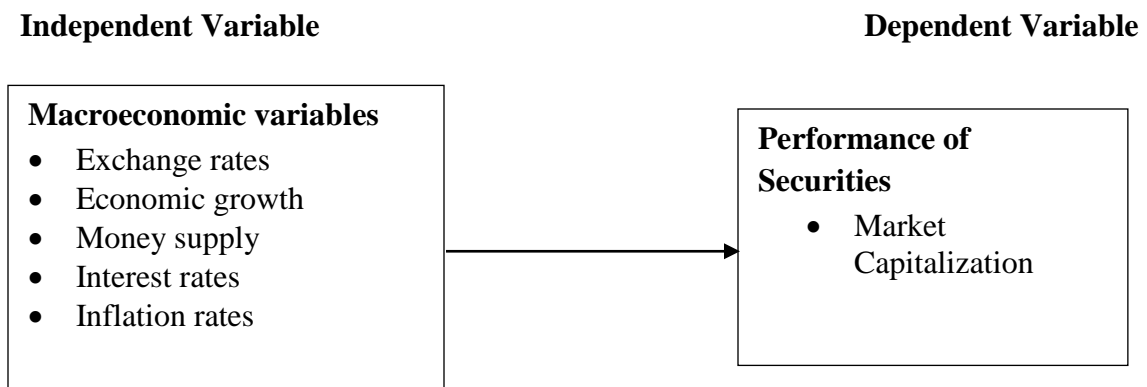
Figure 2.1: Conceptual Framework

2.6 Summary of the Literature Review

The literature review encompasses the theories that were reviewed which included, International Fisher Effect Theory, Keynesian Revolution − No self-correction, The Monetarist Theory of Inflation and Purchasing Power Parity Theory. The chapter also looked at studies by Dziwornu and Awunyo-Vitor (2013), Elly and Oriwo (2012), Otieno (2014), Maku and Atanda (2010), Pal and Mittal (2011), Patel (2012), Momanyi (2015) and Kigen (2014). From the literature reviewed, the period of study was short and none of the studies looked at how macroeconomic factors affect the performance of securities

exchanges in East African Community. This study therefore aimed at addressing those research gaps in carrying out this study.

2.7 Research Gaps

Table 2.1: Summary of the Literature

Author	Focus of Study	Methodology	Findings	Research Gaps
Kimani (2016)	Macroeconomic factors impact on securities exchange performance in Kenya.	Study analyzed financial ratios	Macroeconomic factors significantly affected money markets performance in Kenya.	The study period was short.
Wanyonyi(2015)	Macroeconomic factors impact on securities exchange performance in Kenya.	Regression analysis utilized	Macroeconomic factors insignificantly affected money markets execution in Kenya.	Short study period
Momanyi (2015	Macroeconomic factors impact on securities exchange performance in Kenya.	Study analyzed financial ratios	Macroeconomic factors insignificantly affected money markets performance in Kenya.	There were no models that were applied.
Otieno (2014)	Connection between macroeconomic factors and securities exchange performance in Kenya	Regression model utilized.	Macroeconomic factors significantly affected money markets performance in Kenya.	Study period was limited.
Kigen (2014)	Macroeconomic factors impact on securities exchange performance in Kenya.	Regression analysis used	Macroeconomic factors insignificantly affected money markets performance in	Criteria for firm selection were not elaborated.

Author	Focus of Study	Methodology	Findings	Research Gaps
			Kenya.	
Ismail, Pervaz, Ahmed and Iqbal (2016)	Association between stock market returns in Pakistan and selected macro-economic variables	Autoregressive distributed lag (ADL) model approach to co-integration.	Gross domestic product had a noteworthy positive impact on the Karachi Stock Exchange Returns (KSE 100 Index).	Shorter time period used.
Dziwornu and Awunyo-Vitor (2013)	Relationship between returns on the Ghana Stock Exchange (GSE)	Granger Causality Test and Augmented Dickey-Fuller (ADF) test.	Unidirectional causality between stock exchange performance and financial growth.	Criteria for selection not clear.
Elly and Oriwo (2012)	Macroeconomic factors impact on securities exchange performance in Kenya.	Regression analysis utilized	Macroeconomic factors significantly affected money markets execution in Kenya.	Shorter time period used.
Pal and Mittal (2011)	Long run connection among the returns on Indian Capital Markets	Augmented Dickey--Fuller (ADF) tests, Engle-Granger co-integration test and Error Correction Mechanisms (ECM)	Co-integration between the macro-economic variables and the returns on the Indian stock exchange indices.	A shorter time period was applied.
Maku and Atanda (2010)	Long-run macroeconomic determinants of stock market performance in Nigeria	Augmented Dickey-Fuller (ADF) unit root test. Five macroeconomic variables were considered	Macroeconomic variables have a long run and simultaneous effect on the returns of the Nigerian Stock Exchange.	Short period studied.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section gives the research techniques that were exploited in directing the examination. They incorporate the study plan, target population, information gathering, validity and data analysis.

3.2 Research Design

In accordance to Mutai (2001), a research design is a set of methods utilized to accomplish the targets of the research. This outline includes estimation, characterization, investigation, examination and interpretation of data (Orodho, 2003). This technique depicts the actualities as they may be (Mugenda & Mugenda, 2003). Descriptive research design was embraced on the grounds that the study involves inspiring conclusions.

3.3 Population

A population involves a gathering of elements to be researched (Mugenda, 2005). The number of target population in this examination was the 4 East African Securities Exchange in particular; Rwanda Stock Exchange, Dar es salaam Stock Exchange, Uganda Securities Exchange and Nairobi Securities Exchange.

3.4 Data Collection

This study relied on secondary data to investigate the association among the independent and dependent variable. The dependent factor was the performance of Securities as measured by market capitalization while the independent variables was macro-economic variables such as money supply, economic growth, inflation rates and exchange rates.

This data was sourced from different sources inclusive of the IMF website, the Central Bank of Kenya website, the World Bank Website and the Securities Exchanges in East Africa namely Nairobi Securities Exchange, Uganda Securities Exchange, Rwanda Securities Exchange and Dar es Salaam Stock Exchange. The period of the study was from 2013 to 2017.

3.5 Diagnostic Tests

The diagnostic tests that were completed on the information to guarantee it suits the fundamental assumptions of simple classical linear model include; Kurtosis and Skewness of the appropriation of information which tested for normality, multicollinearity was tested by variance inflation factor and correlation coefficient, heteroscedasticity was tested by the weighted generalized least square to establish the relationship.

3.6 Data Analysis

Mugenda (2005) characterized data analysis as the way toward attaching meaning and significance to the data gathered. Secondary data was collected, coded and tabulated according to each dependent and independent variable and analyzed using the descriptive statistics in terms of the mean values. The multiple linear regression model t used was;

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + e$$

Where Y is the performance of the securities as measured by market capitalization, β_0 is the free term of the equation $\beta_1, \beta_2, \beta_3, \beta_4 \text{ and } \beta_5$ are the coefficients of independent variables and they measure the responsiveness of Y to unit change in variable x.

x_1 = Economic growth= natural logarithm of GDP

x_2 = Rate of inflation = consumer price index

x_3 = Exchange rate

x_4 = Money supply=total quantity of money circulating in an economy

x_5 = Interest rates=average lending rates

e = the error term

An F-test at 5% significance level was conducted to determine the strength of the model, and macroeconomic factors impact on securities exchanges in East African Community.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

This section provides analysis of data collected. It shows the research findings along with the discussions. The collected data was assembled and reports were formed in form of tables and figures. In section 4.2 data was analyzed in terms of descriptive statistics and in section 4.3, data was analyzed in terms of inferential statistics which included correlation analysis regression analysis and the analysis of the variance and section 4.4 presents discussions of the findings.

4.2 Descriptive Statistics

The independent variables analyzed here included the economic growth, interest rates, inflation rates, money supply and exchange rates while the dependent variable was market capitalization. The maximum values, minimum values, means and the standard deviations of the variables under study were tabulated as shown below.

Table 4.1 Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
GDP	20	2.30	8.90	5.8450	1.42920
Inflation rate	20	1.80	8.00	5.3650	1.57489
Money supply	20	9.50	18.80	12.2150	4.35156
Interest rates	20	13.67	23.89	18.0985	2.83391
Exchange rates	20	4.46	8.19	6.6984	1.37580
Market capitalization	20	4.43	6.87	5.5881	.70993

From the findings, the minimum value of GDP was 2.30 the maximum number was 8.90, the mean was 5.8450 and the standard deviation was 1.42920 which shows a large variations. The minimum inflation rate was 1.80, the maximum value was 8.00, the mean was 5.3650 and the standard deviation was 1.57489 which indicated large variation in the inflation rate. The minimum money supply value was 9.50, the maximum value was 18.80, the mean was 12.2150 and the standard deviation was 4.35156 which indicate the large variations. The minimum value for interest rate was 13.67, maximum value 23.89, mean 18.0985 and standard deviation 2.83391 which implied large variations in interest rates. The minimum value of exchange rate was 4.46, the maximum value was 8.19 the mean was 6.6984 and the standard deviation was 1.37580 which shows large variations. Finally, the minimum value of market capitalization was 4.43, the maximum value was 6.87 the mean was 5.5881 and the standard deviation was 0.70993 which shows minimal variations.

4.3 Diagnostic Statistics

The histogram below represents distribution of the secondary data which was used in the analysis.
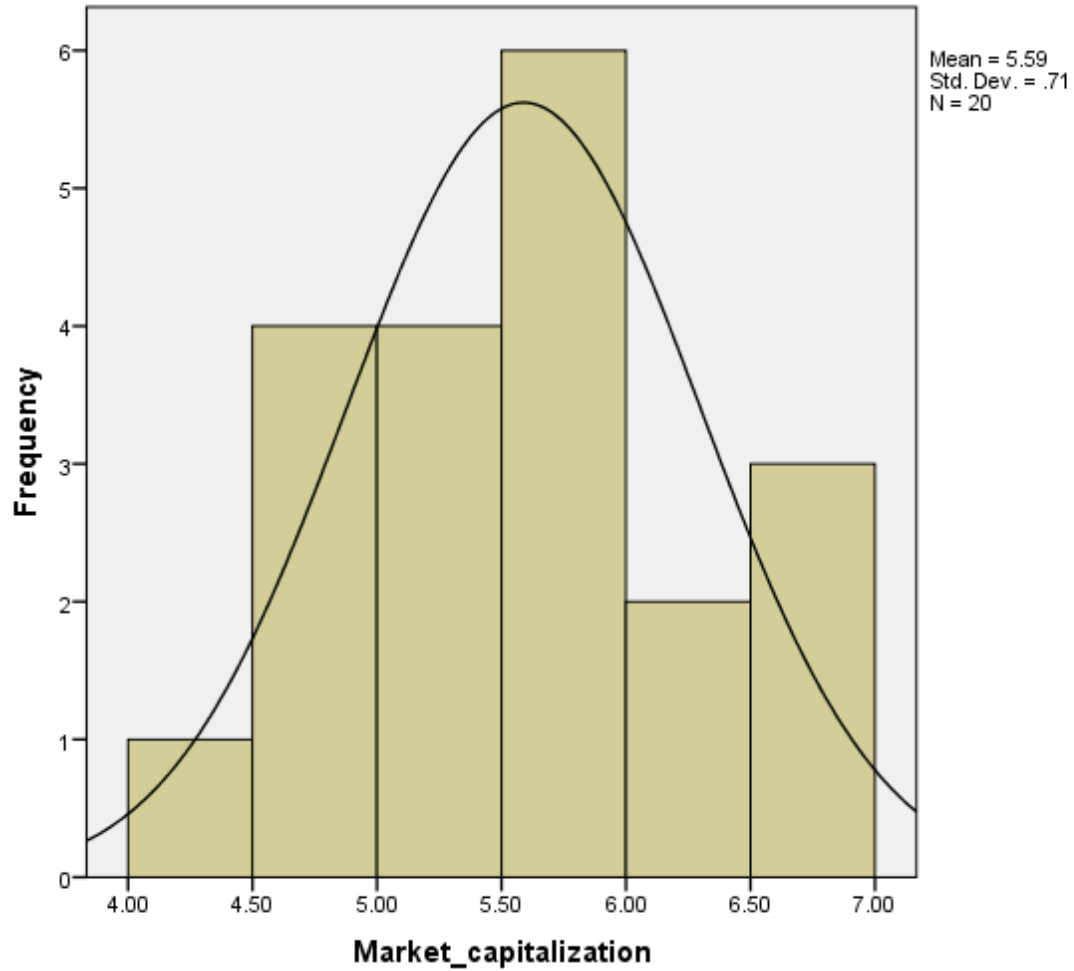
Figure 4.1: Histogram

4.3.1 Tests for normality

Initial data assessment to find out if it has a normal distribution was done. There was no departure from an assumption of normality that was extreme as indicated by the measures as shown in table 4.2. Therefore this confirmed the data was

suitable for analysis by the use of parametric tests.

Table 4.2: Tests for normality

Scale	N	Skewness		Kurtosis	
		statistic	Std. Error	statistic	Std. Error
GDP	20	-0.242	0.512	1.236	0.992
Rate of inflation	20	-0.611	0.512	0.638	0.992
Money supply	20	0.490	0.512	-0.240	0.992
Rates of interest	20	-2.075	0.512	2.674	0.992
Exchange rates	20	0.764	0.512	-0.999	0.992
Market capitalization	20	0.253	0.512	-0.652	0.992

4.4 Correlation Analysis

Table 4.3: Correlation Matrix

		GDP	Inflation rate	Money supply	Interest rate	Exchange rate	Market capitalization
GDP	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	20					
Inflation rate	Pearson Correlation	-0.247	1				
	Sig. (2-tailed)	0.294					
	N	20	20				
Money supply	Pearson Correlation	0.237	-0.372	1			
	Sig. (2-tailed)	0.314	0.106				
	N	20	20	20			
Interest rate	Pearson Correlation	-0.568	-0.319	-0.001	1		
	Sig. (2-tailed)	0.009	0.170	0.998			
	N	20	20	20	20		
Exchange rate	Pearson Correlation	-0.045	-0.343	-0.022	0.610	1	
	Sig. (2-tailed)	0.850	0.139	0.926	0.004		
	N	20	20	20	20	20	
Market capitalization	Pearson Correlation	-0.395	0.590	-0.204	-0.052	-0.518	1
	Sig. (2-tailed)	0.085	0.006	0.388	0.827	0.019	
	N	20	20	20	20	20	20

From the table above, a negative relationship exists between GDP and market capitalization however the relationship is not significant. The correlation coefficient was -0.395 and the p-value was 0.085 which is greater than 0.05. The findings showed further that inflation rate is positively related to market capitalization. The relationship was considerable because the p-value was 0.006 which is less than 0.05. Money supply is negatively related to market capitalization. The correlation coefficient was -0.204 and the p-value was 0.388 which is greater than 0.05 implying the relationship is not significant. The rates of exchange is negatively related to market capitalization. The correlation coefficient was -0.518 and the p-value was 0.019 which is less than 0.05.

4.4.1 Regression Analysis

Table 4.4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.790	0.624	0.489	0.50725

The value of the correlation coefficient was confirmed to be 0.790, adjusted R square was confirmed to be 0.489 this implies that 48.9% of the influence of selected macroeconomic variables is explained by the model.

Table 4.5 Summary of One-Way ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.974	5	1.195	4.643	0.010
	Residual	3.602	14	0.257		
	Total	9.576	19			

The outcome of ANOVA confirmed the value of F statistic of 4.643 at 5% significance level and the statistic was significant since the P-value was 0.010 which is less than 0.05 implying that the overall model was significant.

Table 4.6: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.298	2.120		2.028	0.062
	GDP	0.001	0.133	0.002	0.008	0.994
	Inflation rate	0.235	0.098	0.521	2.406	0.030
	Money supply	-0.004	0.030	-0.025	-0.138	0.893
	Interest rate	0.129	0.081	0.515	1.584	0.136
	Exchange rate	-0.338	0.123	-0.654	-2.752	0.016

Regression of the variables confirmed that a unit increase in GDP would lead to a market capitalization increase by 0.001. A unit increase in inflation rate would lead to an increase in market capitalization by 0.235. A unit increase in money supply would lead to market capitalization decrease by 0.004.. A unit increase in exchange rate would lead to a decrease in market capitalization by 0.338. the inflation rates along with exchange rates were confirmed to be statistically considerable whilst GDP, money supply and interest rates were not statistically significant.

The standardized beta coefficient of GDP was 0.002 meaning a small positive effect of the GDP on the market capitalization. The standardized beta coefficient of inflation rate was 0.521 which means that inflation rate has a positive impact on the market capitalization. The standardized beta coefficient of money supply was -0.025 which implies that money supply has a strong influence on the market capitalization. The standardized beta coefficient of interest rate was 0.515 indicating a moderate effect on market capitalization.

4.5 Interpretation of the Findings

From descriptive statistics, the GDP recorded an upward trend which was an indication of increased economic activities. The lowest and highest values being 2.30 and 8.90 respectively. Rate of inflation, interest rates, money supply, rates of exchange and market capitalization posted mixed results. It implies that there was no definite relationship between the number of years and the inflation Rate of inflation, interest rates, money supply, rates of exchange and market capitalization implying the time factor was significant.

From the regression analysis results, the research established a number of macroeconomic variables that affect market capitalization and they included; Rate of inflation, interest rates, money supply, rates of exchange and the intercept for all these factors was found to be 4.298 for the years analyzed. The five independent variables which were analyzed which included the inflation rate, money supply, interest rates, exchange rates were able to explain their effect on the market capitalization up to 48.9% as shown by adjusted R square. This implies that the five independent variables inputs 48.9% on the market capitalization and the remaining 51.1% is contributed by the factors not studied. Meaning the model was fit.

This research found out that the coefficient of GDP was 0.001 meaning that GDP positively influences market capitalization. This means that, holding all other factors constant, as the GDP increases, market capitalization increases. Inflation rate positively affects the market capitalization, this is clear from the coefficient value of 0.235. Money supply impacts negatively on market capitalization since its coefficient was-0.004. Interest rates influences market capitalization positively since the value of coefficient was 0.129. Exchange rates influences market capitalization negatively since the value of coefficient was -0.338. In general, macroeconomic variables affect the performance of securities exchanges in East Africa Community. This study concurs with the study by Quadi (2012) who concluded that Treasury Bill Rates and Industrial Production impacted positively on returns on the Dhaka Stock Exchange in Bangladesh and the study by Pal and Mittal (2011) who confirmed that macroeconomic factors affected the profits on the Indian stock market.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The section provides a summary, conclusions, recommendations for policy, research limitations in addition to the recommended areas for further studies.

5.2 Summary of the Findings

This paper aimed at assessing the ultimate impact of chosen macro-economic aspects on the performance of securities exchanges in East Africa. The paper found that that a positive connection exists among the macroeconomic factors and the performance of securities exchanges in East Africa. Economic growth as the major component of macroeconomic environment was confirmed to have an increasing trend over the years analyzed. Economic growth gauges the capacity of any country to produce goods and services to her citizens and it involves the comparison on period basis for example from one period of time to another period of time. It is basically the aggregate estimation of all goods and services produced by a nation.

The growth in the economy is attributed to favorable economic conditions which supports economic activities hence increase in the GDP. Favorable economic conditions include plenty of rainfall to support agriculture which is a sign of good climatic conditions free from drought. It also implies ready market for the outputs produced in the economy which is the finished products from the industries and firm produce. Poor economic conditions is actually an obstacle to economic growth since it leads to declining revenues produced in an economy which have the potential of negatively affecting the GDP.

Inflation rates and exchange rates confirmed a positive effect on market capitalization and their effect were significant because their p-values were both less than 0.05. Exchange rate is concerned with the rate at which one currency is traded for another. Changes in exchange rates impact the share trading system performance since the investors have the data. High changes in the rates consequently implied high improvements of market return unsteadiness. Inflation is the constant cost increment of goods and services prices because of financial and fiscal approaches, credit availability or shopper normalized average price. Uncontrolled money supply into an economy leads to high inflation levels. This in turn influences negatively the market capitalization as indicated by the coefficient of -0.004.

The ANOVA was employed to determine how strong the model was in the analysis. From the analysis of the regression statistics, the research concluded that the three major factors which include; inflation rates, rates of interest in the economy and amount of money supplied affected the performance of securities exchanges market in East African Community. The variables were able to explain their influence on the performance of securities exchange market in East African Community up to 48.9% and the rest is contributed by other factors not considered in this study. The significance was less than 0.05 implying the model was considerable.

5.3 Conclusions

Changes in return rates impact the share trading system performance since the investors have the data. High changes consequently rate implied high improvements of market return unsteadiness. Inflation was confirmed as pivotal in the performance of the

securities exchanges. Inflation increases competitiveness, thus increasing the economic growth which in turn leads to performance of securities exchanges. The results are supported by the Keynesian Economics Theory which confirmed that when aggregate demand increase, it causes an increase in economic growth.

Rate of interest have a positive association with market capitalization. As the interest rate in East African Community increases, investors find that it is alluring to put resources into East African Community exchanges, at that point the capital accessible for growth of East African Community will increase and this prompt increment in efficiency and monetary development. In this manner, interest rates increase is trailed by higher growth and monetary development.

GDP also showed a direct relationship with market capitalization. This indicates that increase in goods and services produced within an economic bloc indicates availability of more resources for investments. This draws more investors in the region which create more goods and services creating surplus. The surplus is exported to external markets increasing the value of domestic country. Increase in value of domestic country boosts the performance of the stock exchanges.

5.4 Recommendations

Low stock market turnover indicates presence of more opportunities for investors in the East Africa stock exchange. Hence, policies aimed at attracting both local and foreign investors should be developed and implemented by policy makers. For instance, carrying out awareness campaigns on investment opportunities in the stock market and tax concessions.

The study recommends that policy makers formulate policies which are geared towards the stabilization of inflation rates and interest rates as well as exchange rates which will in turn promote foreign trade in the East African Community.

The East Africa community governments should formulate policies which will stabilize the macroeconomic variables so as to attract more investors. Confidence in the system has more impact on attracting new investors as compared to the policy interests. The performance of stock markets is also affected by unforeseen events and performance of individual firms. The managers of the firms investing in stock market should also make decisions aimed at enhancing their performance.

This study concentrated on impact of macroeconomic factors to the securities exchange performance. Therefore, there is need for future researchers to carryout studies incorporating other factors such as industry specific factors, political stability, institutional factors which may have adverse effects on performance of stocks.

5.5 Limitations of the Study

Time constraint, considering the fact that this study relied on data from the multiple sources which included the Capital Markets Authority, the Nairobi Securities Exchange, Tanzanian Stock Exchange, Uganda securities exchange more time was needed for the entire exercise of data collection and analysis.

This study never employed any control variables. Control variables plays a critical role of ensuring the other variables being tested are better understood since they remain unchanged in the analysis.

This study was conducted over a five year period. Theoretically it is known that the longer the period of the study is, the more conclusive the results. A longer period of study for example 20 years is likely to give more reliable results.

5.6 Suggestions for Further Research

Our paper suggests that a similar research be undertaken but now in the Africa region which involves the incorporation of the firms quoted under all securities exchange in Africa.

This paper utilized only secondary data in investigating the impact of selected macro-economic factors on performance of securities exchanges in East African Community. It therefore recommends on another study which will seek to determine the effect of selected macro-economic factors on performance of securities exchanges in Africa with incorporation of both primary and secondary data. Primary data will help in capturing information not captured by the secondary data.

The selected macroeconomic variables taken into consideration were yearly based. A similar study should be undertaken to capture the monthly based values of the macro-economic variables affecting the performance of stock market in East Africa.

The study also recommends for further analysis of impact of selected macro-economic variables on performance of stock market. Principal component analysis should be carried out to determine the variables affecting the variation of all the variables included in the study.

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APPENDIX 1: LIST OF SECURITIES EXCHANGES IN EAST AFRICAN COMMUNITY

1. Nairobi Securities Exchange

2. Uganda Securities Exchange

3. Rwanda Stock Exchange

4. Dar es salaam Stock Exchange

APPENDIX I1: RESEARCH DATA

Exchange	Year	Inflation rate	Ln GDP	Interest Rate	Ln Money supply	Ln Market capitalization	Ln exchange rate
NSE	2013	5.70	4.90	17.31	15.30	6.23	4.46
	2014	6.90	6.40	16.51	16.40	6.13	4.48
	2015	6.60	7.70	16.09	14.10	6.87	4.59
	2016	6.30	7.90	16.56	17.70	6.54	4.62
	2017	8.00	8.80	13.67	17.90	6.86	4.64
USE	2013	4.90	4.70	23.28	9.50	5.56	7.76
	2014	3.10	4.60	21.58	10.20	5.76	7.86
	2015	5.40	5.70	22.60	11.70	5.69	8.08
	2016	5.50	2.30	23.89	11.10	5.74	8.14
	2017	5.80	4.40	21.28	12.80	5.88	8.19
DSE	2013	7.90	3.30	15.86	10.80	5.32	7.38
	2014	6.10	5.00	16.29	13.60	5.45	7.41
	2015	5.60	5.50	16.10	15.80	5.23	7.60
	2016	5.20	6.30	15.96	18.40	5.13	7.69
	2017	5.30	6.00	18.62	18.00	5.87	7.71
RSE	2013	4.20	4.70	17.32	12.50	4.75	6.19
	2014	1.80	7.60	17.26	16.60	4.68	6.67
	2015	2.50	8.90	17.33	18.50	4.87	6.78
	2016	5.70	6.00	17.29	14.90	4.78	6.77
	2017	4.80	6.10	17.17	13.50	4.43	6.98