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INFLUENCE OF MACROECONOMIC VARIABLES ON ECONOMIC GROWTH IN KENYA

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Abstract

The Kenyan economy has been characterized by fluctuations in growth leading to poor economic performance for a long spell of time. This study presents an empirical investigation on the influence of macroeconomic variables on economic growth in Kenya. The specific objectives of the study were, to find out the effect of inflation rate, stock market performance, exchange rate and remittance on economic growth in Kenya. The data for the analysis was secondary data and it was collected from the Republic of Kenya economic surveys, the Republic of Kenya statistical abstracts and from international financial statistics. ARDL Cointegration techniques were used to analyze the data. The ADF - Fisher Chi-square and ADF - Choi Z-statistics tests of unit root revealed that the inflation rate, stock market performance, exchange rate and remittance variables had no unit root at level and were thus stationary. Unit root test was conducted to assess the order of integration. The study established that inflation rate, stock market performance, exchange rate and remittance had an effect on economic growth in Kenya. The descriptive analysis revealed that the inflation rate, stock market performance, exchange

rate and remittance as key variables were not normally distributed from the descriptive statistic results. The correlation results revealed that inflation rate, stock market performance, exchange rate and remittance variables were orthogonal to other independent variables in the study. The long run estimation revealed that real exchange rate and diaspora remittance both have positive significant effect on economic growth while stock market performance and inflation produced insignificant coefficients. The results of ECM is less than 1 implying that the model slowly resume to equilibrium aftershocks. From the short run estimation, the study showed that inflation rate, stock market performance, exchange rate and remittance variables had a statistically significant effect on economic growth. The study recommend that the government should be keen on the macroeconomic variables in order to stimulate and to control the economic activities growth.

Keywords: Economic Growth, inflation, Stock Market Performance, Exchange Rate, Remittances

INTRODUCTION

Waqas et al. (2015) defines economic growth as the capability of an economy to expand its productive capability so that it can produce extra units of goods in place and services offered. Any significant growth in the economy of a country is very important as it shows the progressive development of a nation within a period of time (Lundvall & Lema, 2014). The developing world has seen a sharp fall in poverty index. This is evidently seen in the reduction in the percentage of people living in extreme poverty which has fallen to 10.7%, a decline which was last reported in 2013. There is a unanimous agreement among development experts that economic growth is the most vital tools required to eradicate poverty in developing countries World Bank, (2017).

In the global sphere, economic growth has exceeded expectations and defied odds which was disappointing and utterly against its progression. Still, various countries in Latin America, Africa and within the Caribbean have fallen short of performance in relation to the forecasted economic growths. It is projected that Economic growth in most of these developing countries stagnate far below the SDG target of 7 percent (United Nations, 2018).

In 2017, the global economic development is projected to have reached 3.0 percent. When calculated based on the market exchange rates, or 3.6 percent when accustomed for purchasing power equivalences. It demonstrates the highest growth rate ever recorded since 2011 (United Nations, 2018).

An increase in economic growth offers a viable platform for diversifying earnings and employment and also the crucial resources needed by respective governments to fund and sustain programs for social empowerment and uplift. This kind of economic progression is most impactful when it is; (a) all-encompassing in the sense it offers opportunities to people in all walks of life in the society-- the middle class, the marginalized, the poor, and disadvantaged; as well as the wealthy – to actively contribute in the growth said process, and (b) viable in ensuring that it uses natural resources sustainably and does not prove detrimental to future generations. Increased growth leads often to economic prosperity, which in turn improves the welfare of people around the world (World Bank, 2017).

However, increased growth does not automatically translate to availability opportunities to every class of society – especially to the poor and the disadvantaged – to involve in the growth process and eventually profit from it. Furthermore, high growth does not guarantee the prospects of environment conservation. Though the growth rate is imperative, the models of growth that conserve the environment and promote increased opportunities for the poor and marginalized groups, with no exemption of the women and youth, can guarantee a sustainable and robust economic growth in the long run (World Bank, 2017).

A country's economic growth is dependent upon both microeconomic variables and macroeconomic variables (Brunetti et al, 2012). Microeconomic variables are the variable that affects a particular group of people whereas macroeconomic variables affect many people within the country's economy. Macroeconomic variables take a longer time to influence compared to micro-economic variables. A country needs to put much of its attention on macroeconomic variables as they affect the entire population of a country (Levine, Loayza & Beck, 2000). From prior studies, various scholars have conducted extensive research on the variables of macroeconomics but there is a little report on their combined effect on the economic growth of Kenya. It is for this reason, therefore, that this research intends to put more attention in establishing the influence of macroeconomic variables on Kenya's economic growth. Economic development is determined by Human Resource, Research and Development, Foreign Direct Investment as well as Natural Resource (Lensink and Morrissey, 2006).

The major goal of the research study is to establish how various macroeconomic variables influence economic growth. Further, the study would aim to establish the influence of inflation on economic growth in Kenya, to highlight the influence of stock market performance on economic growth in Kenya, to investigate the influence of exchange rate on economic growth in Kenya and to find out the influence of remittance on economic development in Kenya. Moreover, this study will as well provide recommendations for policy makers and decision makers of various entities. The recommendation is on how to deal with macroeconomic

variables which are under the government's charge as it directly affects the citizens. This study will as well be of guide to the government of Kenya to enhance the development of its country through regular checkup of its macroeconomic variable.

Macroeconomic Variables

Akers (2001) hypothesize that macroeconomics is defined as a unit or a branch of economics that revolves around with the performance, composition, decision making, and general behavior of an economy, and as opposed to individual markets. This encompasses global, regional and national economies. In macroeconomics, aggregate measures like; Gross Domestic Production (GDP), levels of unemployment and periodic indices to acknowledge how the entire economy operates are considered. Connections between factors like output, national income, consumption, unemployment, inflation, savings, investment, exchange of goods and service across international borders, international finance, and others are well explained through carefully developed models (Umotho, 2014). Macroeconomic variables are particularly the factors of general importance to the position of countries economy both national and regional. These factors affect a bigger share of the population (Barro & Sala-i-Martin, 1995). The factors in question are unemployment, economic output, investments, savings, and inflation. They are closely observed by various governments in place as they majorly guide the economic activities and hence growth (Khalid et al., 2012). It is good to broadly study these factors and understand how they relate with each other and their interaction impact on the economy (Fischer, 1993).

Macroeconomic variables are mainly scrutinized by business, governments, and consumers due to their influence on the economic well-being. According to Kwon & Shin (1999), GDP, interest rates, currency exchange rate, inflation and market risk are the greatest impactful macroeconomic variables. Sharma & Singh (2011), finds out a positive connection between the variables and investments within an elaborate period since they (variables) stabilize over a period and this favors the bank's daily operation and impact them positively.

The largest quantifiable measure of general economic development of a nation is GDP and absolutely represents the entire goods and services of monetary value made over a specific or well defined time within geographical borders of a country. Basu et al, (2005 maintain that inflation is the upsurge in the rates of price over a specified period of time. Elements that bring about a price increase include; fiscal guidelines and policies, commercial banking, the consumer price index plus the credit availability or accessibility to all, which play a significant role in promoting price rise or downfall. Economic growth sectors are mainly influenced by distinctive macroeconomic variables (Mishkin, 2004). These variables are not limited to exchange rate policy, monetary policy, and fiscal policy.

Economic Growth

Economic growth refers the capability of an economy to positively adjust its productive capacity by becoming potentially positioned to produce extra units of goods and services (Waqas et al, 2015). This can be confirmed using GDP or GNP. GDP definition is based on the total market value of eventual or final goods and services produced and rendered respectively in a country within a period of one year. The main difference between GDP and GNP is that GDP only focuses on output that is strictly driven from within the Country, while GNP includes output derived from sources external to the Country (Wambui, 2013). The evaluation also involves the total final commodities produced within a given period of time indicated in monetary terms. Gross Domestic Product (GDP) is therefore calculated by adding up consumption, investments, government spending and net exports (Peter, 2003; Harris & Roach, 2016).

A country with high levels of economic growth has got a lot to show for it. Infrastructures in such a country are well established in both rural and urban areas and not only concentrated in the urban areas. Such a country also has quality education which is usually affordable to all the citizens. The health sector is well funded and equipped to cater to the health needs of its citizens. The living standards for her citizenries are greatly enhanced and basic necessities are always rendered affordable (African diagnostic country report, 2011).

In the world, some of the country's that are seen as having high rates of economic growth include the United States of America, most European countries like Germany France and the likes of Japan and Singapore for Asia while in Africa, South Africa is considered to be performing well.

To break the cycle of poverty, economic growth for a developing economy must be sustained. Fiscal policies are pursued by countries to attain faster economic growth. Fiscal policy includes the use of fiscal instruments such as government spending and taxation to determine the operations of the economic system in order to fully exhaust economic welfare with the prime aim of encouraging the long-term prospects of growth of the economy (Tanzi, 1994; Afonso, 2016).

Macroeconomic Variables and Economic Growth

Macroeconomic is the study of the entire economy with emphasis on the performance of an entire economy. This can be a national, regional or international comparison. The comprehensive feature and workings of a national economy are its macroeconomic environment and may comprise; output, income, and the interrelationship within varied economic sectors (Maghyereh (2002); Cheptot (2014). A favorable macroeconomic environment stirs the economic growth a country. Macroeconomic variables are defined as those variables that are

independent of the income levels. They are factors that greatly influence the country's economic growth as they affect the structure, performance, behavior, and decision-making of an entire economy and not confined in individual markets (Umotho, 2014). These variables affect output, unemployment, investments, consumption, inflation, international finance, international trade and national income. Therefore, macroeconomic variables are the main markers or indicators that signals the contemporary patterns in the economy. The variables are not limited to Gross Domestic Product (GDP), exchange rates, inflation and unemployment rates (Makori, 2015). Contrastingly, the major focus of microeconomics lies on the activities of specific agents, like consumers and firms as well as in what way their performance adjusts quantities and prices in certain markets (Chang, 2010). That is, microeconomic studies individual components, whereas macroeconomics deals with the entire economy. GDP is the summation of all production within a country within a given year. GDP comprises all locally, all produce and livestock, manufactured products, intangible investment growth, and all asset valuation increases. (Kaberia, 2016). Inflation is the degree at which the general level of valuations increases over a specified period of time. It involves smaller elements in controlling inflation upwards or downwards, such elements include fiscal policies, the consumer price index, commercial banking, and ease of access to credit. Unemployment measures are based on the number of residents who are under no employment but are actively involved in seeking employment opportunities. Sentiments by Mishkin, (2004), echoed by Birungi (2015) alludes that the Consumer price index, banking, and changes in government policies and regulations are macroeconomic variables that individually influence multiple areas of economic growth in a country.

For a country to experience full economic growth, there are a number of things that need to be handled mostly, these are the fiscal and monetary factors since they determine the rate at which the growth itself moves (Chen et al, 2012). The Central Bank of Kenya, (2006), discussions to have commercial banks to be enshrined within the monetary umbrella and to have been playing an imperative part in the whole process. Subsequently, the end results of the high-lending rates trend of commercial bank bring about variations on peoples' consumption and savings. Therefore, regulating the commercial bank lending rate has a significant contribution regarding the country's economic growth (Peter, 2011). When the government chooses to use fiscal policy to subsidize consumption of a particular product, it needs to do so in conjunction with the private sector which equally forms a key role in every country's economic growth process.

High Treasury bill rates inspires investments. They (Treasury bill) compete with stocks, deposits, and bonds towards the investment by shareholders. As the need for demand deposits

and stock market instruments reduces, it results in an ultimate decrease in their prices. Anticipated correlation resulting in Treasury bill rates and financial performance is negatively influenced and also has a positive influence with respect to lending rates Maghyereh, (2002), the same views are supported by Gikombo & Mbugua (2018).

Financial reporters' confirmation shows that shareholders mostly conclude that macroeconomic measures and fiscal policies have a big impact continuously leading to the change in financial performance (Otambo, 2016). Pricing and financial performance are affected by economic factors that have an impact on changing investment opportunities; the pricing policies and factors which affect speculative dividends (Muchiri, 2012). Earlier studies argue that consumer price index is a particular element made up of a number of macroeconomic variables. These variables are the discount rate, price increase and goods market as concluded by (Gan et al., 2006), Teymouri, & Kharazmi, (2013). In conclusion, they established a negative effect on the variables which is influenced by the advanced threat of forthcoming profitability. According to Otambo, (2016), future productivity may be reduced as a result of bills rise level which increases overhead production budget. While others believe that positive stock prices may be realized as a result of an increase in price levels because of inflation.

Sharma & Singh (2011) states that banks primarily acquire information regarding borrowers before extending loans to them and this is very costly. Allocation of the available funds is highly affected by the variations in economic conditions and the high probability that loan default would have clear positive or negative effects on their lending behavior. A study by Kwon & Shin (2010) concludes that when there is recession, banks decrease their lending rate contrary to when the economy is on the boom where banks make most loans during this period since the level of macroeconomic variability is greatly reduced (Tobin, 2007). The economic environment is a routine risk component that has an impact on all players in a country and the economy. Performance and progression of an economy is calculated in terms macroeconomic aggregates. This includes the total amount of goods produced, general rise in price levels, employment level, supply of money for trading and changes in the exchange rate and industrial capacity utilization (McKinsey & Company, 2015).

Brief Overview of Kenyan Economy

It is of paramount importance to improve the growth rate in Kenya. Kenya, being a relative low-income developing country in Africa has witnessed a slow recovery from the political turmoil it endured in 2008 and 2009 during the disastrous post-election violence. In early 2008, sharp rises in the prices of oil and food, the global financial recession, and the worst

drought ever experienced in a decade in 2009 (Nkurunziza et al, (2013). In 2009, the foundation of the economy which is the agricultural sector, contracted by more than 3% indicating a stagnation of the economy. Electricity supply was also affected by the drought and this left a negative impact on general infrastructural developments as well as the in the manufacturing sector.

According to the report from the World Bank, the GDP per capita in Kenya has recently receded to the level it was at in the 1990s when the economy was stagnant due to political turmoil associated with fight for multiparty democracy. This is due to the fact that the GDP per capita was $450 in 1990 while in 2018, it is $453. Furthermore, the average growth of output (GDP) in thirty years from 1977 to 2007 stood at 2.3%, the large variations due to unexpected multiple shocks. In the course of that period, the per capita output slightly grew by paltry 0.42% suggesting that the rate should be tripled to reach 1.39% if Kenya aimed to increase in double-fold its per capita output in a half a decade period.

However, in 1984, the economy dwindled to 1.6%. Later, it regained stability in 1990. However, in 1991, it nosedived to approximately 1.4%, though it hit an all-time low by -1.08% in the subsequent year. It made a slight recovery of -0.09% in 1993. This was due to the embracing of multi-party democracy in the same year. The same performance of 0.29% was also reported in 1997 as a result of another highly contested general election. In the next two years, the economy managed to revive only to take a nosedive again in 2000 and 2002 where it recorded a paltry 0.59% and 0.29% respectively in growth. The year plunge in economic growth was attributed to the fact that the year 2002 was election year and traditionally, the economy takes a beating during this periods.

From the year 2003, it started picking up again at 2.78% and it exponentially rose to 6.99% by the year 2007 when the general neared and everything was brought to a sudden halt. However, the economy shrank immensely to the post-election violence which was translated to the economy standing at 1.53% (GOK, 2009). The period after post-election violence registered a positive growth in economy to over 3%. The economy has more or less been stagnant in growth rate as it stands between 4% and 5% up to 2012. It grew up to 5.7% in the year 2013 but declined in growth to 5.3% in 2014 (World Bank, Economic Survey, 2014). However, according to the United Nations Development Assistance Framework for Kenya (2014-2018), the GDP annual growth rate in Kenya is around 5.45 percent since the year 2004 until 2018.

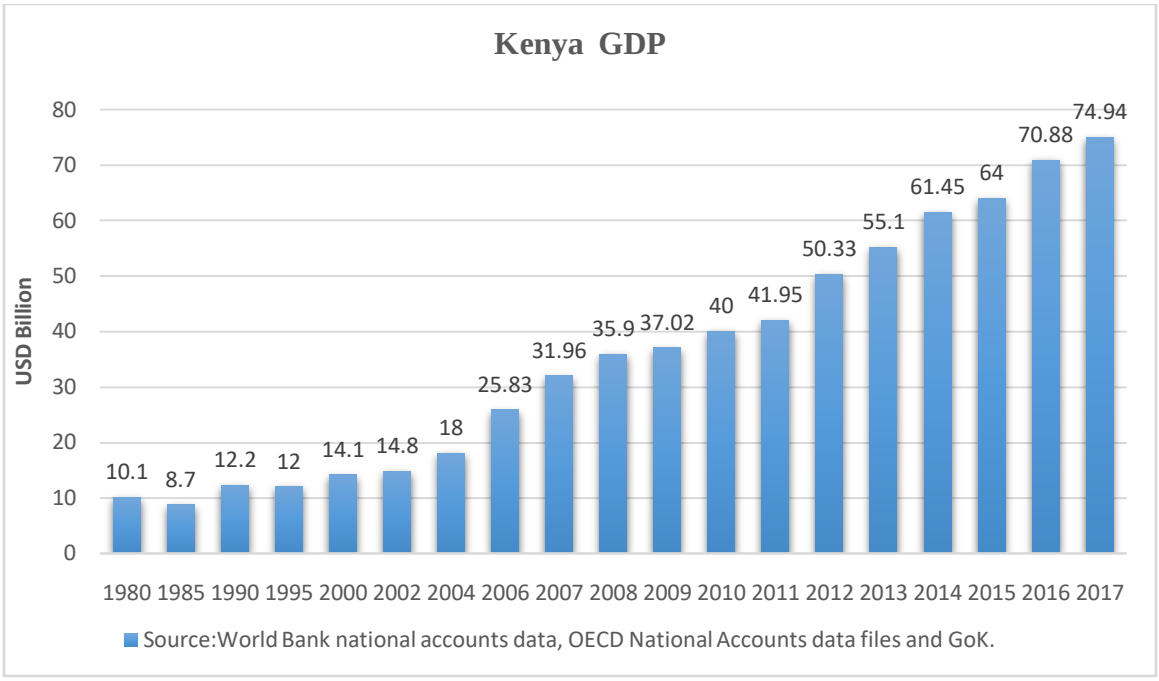

Figure 1: Kenya's Real GDP in US Dollars

From the above figure, Kenya recorded a steady and increasing growth from the first decade since independence up to 1990. The economy began to decline and continued shrinking due to the Gulf war between 1990 and 1991 and the Iraqi Invasion of 2003 (Blanchard, 2007). The situation was worsened by droughts in 1992, 1994, 2000 and 2004, and the subsequent freezing of aid and grants in 1992 and 1997 (Ronge & Kimuyu, 1997). Altogether, these factors led to an increased import bill given few exports. This resulted in an unfavorable balance of payments, current account deficits, accelerating inflation and exchange rate depreciation (Njeru & Randa, 2001). Other factors related to the macro environment that contributed to the decline were, inflation, lending rate, the level of bank credit to Government, Kenya shilling has run down in value compared to other international currencies and constant increases in wages and salaries.

Though some dynamics responsible for the volatility in the value of the currency may have been beyond the control of the economy, such as fluctuations in the price of a barrel of imported oil, there are various aspects which could have been mitigated, such as increment in salaries of teachers and hefty payment packages offered to members of parliament. There is the need for a stabilizing inflation rate as a factor that influences macroeconomic steadiness. Therefore, an influence on the trend of the growth of the economy could be determined if rational approaches are embraced. Generally, there was volatility in the normal loaning rate in the whole of 2004, which is a perfect reflection of how badly on the level of our economic

stability, and which may consequently led to suppression of especially foreign investments initiatives (Rianto, 2015). Most importantly, there is a need for a thorough empirical examination to explore the determining factors of this growth rate and establish the role of the varied aspects that shape this economic growth trend (Wambua & Were, 2014).

Research Problem

According to ROK (2017), economic growth in Kenya plunged to 4.9 percent in the year 2017 from a relatively impressive 5.9 percent in 2016. This was chiefly blamed on the adverse weather conditions that negatively impacted on agriculture performance coupled with uncertainties that was a typical characteristic of the prolonged electioneering period in the second half of the year 2017. Nevertheless, the economy endured resiliently, buoyed by the service provision sector. According to ROK (2016), overall inflation remained higher in the first half of 2017 largely on account of arising from high food prices that have been in existence since July 2016. According to ROK(2017), overall inflation rate remained higher in the first half of 2016, thanks to high food prices caused by unfavorable weather conditions over the period of the first half of 2017. The foreign exchange market in 2016 stayed comparatively firm buoyed by a narrowing current account deficit and resilient foreign earnings from tourism, remittance inflows and tea. During this entire period, the Kenya Shilling gained ground against the Sterling Pound but depreciated in value against the Euro and the US Dollar.

According to ROK (2017), the in average 91-days, Treasury bill rate value weakened slightly to 8.37 percent in 2017 as opposed to 8.62 percent in the previous year. While the average 182-day Treasury bill rate depreciated to 10.42 percent from 10.9 percent in the year 2016. The stability in the interest rates for government securities was a perfect indicator of the fact that execution of government local borrowing initiative buttressed market stability. On the other hand, the Commercial banks' regular lending interest rates on the other hand stayed steady within the capped interest rate. The regular commercial bank lending rate dropped to 13.67 percent in 2017 in relation to 16.58 percent in the year before. The interest rate capping law came in effect in mid-September 2016.

According to ROK (2016), note that a decline in imports outweighed the decrease in exports, consequently leading to narrowing of the trade deficit and an expansion of export-import percentage from 36.8 percent in 2015 to 40.4 percent in 2016. Improved of trade terms for averagely all items increased by 2.8 percentage points to 78.8 percent in 2016 following enhanced export unit fees of beverages and tobacco; animals and vegetable oils and fats. According to ROK (2017), the taxes fell below set targets in the first half financial year

2017/18, due to a slow growth in the economy which negatively affected revenue collection harmfully.

From the foregoing evidence above, it was noted that the Kenyan economy has experiences numerous dynamics. There was fluctuations in all the sectors of the economy. Alterations in the interest rate, variation in the exchange rate and change in trade balance. This study was therefore motivated by the need to bridge the knowledge gap by determining the macroeconomic factors influencing the economic growth in Kenya. This was achieved through giving answers to research question; 'what is the influence of macroeconomic variables on economic growth in Kenya?'

Research Objectives

The general research objective of this study is to establish the influence of macroeconomic variables on economic growth in Kenya.

The specific objectives of this study are to:

1. To examine the impact of inflation on economic growth and development in Kenya
2. To examine the influence of stock market performance on economic growth in Kenya
3. To examine the effect of exchange rate on economic growth in Kenya
4. To examine the impact of remittance on economic growth in Kenya

Research Hypothesis

1. H_1 Inflation has no substantial effect on economic growth in Kenya
2. H_2 Stock market performance has no major impact on economic growth in Kenya
3. H_3 Exchange rate has no important impact on economic growth in Kenya
4. H_4 Remittance has no significant influence on economic development in Kenya

Significance of the Study

The results of this study would add to improvement and understanding of macroeconomic variables influencing the economic growth of Kenyan. The study will prove vital to the policymakers in the government as they can use it as a guideline of policy making for better and easier management of the economic growth. The government will use the study so as to come up with policies and ways of promoting stability in the progressive growth of its economy.

This study will be of significance to academicians, scholars and researchers by opening up a new avenue that has not been studied or has very little literature bringing about interest in trying to dig deeper in this field mainly for those who may be interested in carrying out further research in this area as they will find this study to be a substantial point of reference for

literature and research gaps. Government agencies such as CBK, CMA, KRA, and policymakers will find this study a useful guide in their decision-making process especially when enacting policies such as fixing the interest rates and legislation that administer the macroeconomic activities of a country.

Scope of the Study

The focus of the study is aimed at finding out the influence of macroeconomic variables on economic growth in Kenya and the target population was the average GDP growth rate for the period of 10 years since 2008. The study also used the annual tax revenue for the same period of time and the average annual level of GDP growth rate.

Limitation of study

This study would be limited to the Kenyan economy only. More study should be carried out in the African Region in general. The study was limited to four objectives only. In particular, to examine the influence of inflation, stock market performance, exchange rate and remittance on economic growth in Kenya. The four variables used in the study were considered as the most influential factors. The study thus left out other variables such as equilibrium of payments, money supply as well as the national debt.

LITERATURE REVIEW

Theoretical Review

This literature review identifies and examines written works by other scholars and researchers regarding the influence of macroeconomic variables on economic growth. Here, there is detailed knowledge of what has been done before and a framework within which the research findings are to be explained and how to overcome the drawbacks of earlier studies. The section below describes and discusses different theories such as Monetarism Theory of Inflation, Endogenous growth theory, Purchasing Power Parity Theory, and the Efficient Market Theory.

Monetarism Theory of Inflation

This is an essential theory, which is chiefly related with the work of economist Milton Friedman, (1963). According to the theory, adjustment in the money supply is the most significant factor of economic growth. As such, the performance of the business cycle is eventually linked to the money supply. Inflation also comes from an increase in money supply. More precisely, inflation arises if the money supply increases faster than the national income growth rate. The money supply according to monetarism is dominating though not exclusive factor of both the level

prices in the short-run and long-run and the level of output Whitman et al, (1975). Money supply does not affect the long-run level of productivity. Inflation is often and all over and it is more of a monetary incident that rises from additionally sharp increase in the amount of money as opposed to the total output. When the supply is lower than the demand, prices of items will go up and vice versa. This is because the value of the goods are influenced by the existing supply and demand. Chin (2002) asserts that real estate markets are incessantly attuned to a balanced model where price range is attuned based on the supply. In Michael Sarel's paper, (1996), on Nonlinear Effects of Inflation on Economic Growth, he found a structural discontinuity at 8 percent, exceedingly below that rate, there is no effect that inflation has on development, or it may possess a slightly positive effect. Therefore, when the rate of inflation is above 8 percent, however, the estimated effect of inflation on economic growth rates is negatively weighty, robust, and very dominant. According to Senhadji & Khan, (2001), the acceptable inflation levels for developing and industrial countries within 11-12 percent and 1-3 percent respectively. Amongst others, the results offer useful insights into the affiliation between the two variables and to regulate the advantages of upholding price stability. Wairimu, (2014) looked at the effect of macroeconomic variables on the value of real estate initiatives in Kenya and concluded that money in existence determines the money that would be spent by people when acquiring real estate. Gokal & Hanif, (2004) in their paper examining the 'Relationship between inflation and Economic growth in Fiji, concluded that it is important that policymakers need to maintain low inflation so as to promote relatively high economic growth. This makes it important for policy-makers to keep a low inflation rate for a better and healthier economy.

Endogenous growth theory

This theory was put across in the 1980s by proponents such as Romer (1986) & Lucas (1988) among other distinguished economists as a reaction to disapproval of the neo-classical growth models that were in place. According to the theory, policy considerations have an effect on the long-run prospects rate of growth of an economy. The model is one whose long-run term growth rate is decided by variables confined within the bounds of the model, not an exogenous rate of technological improvement as in a neoclassical growth model. Pietro (2002), asserts that all fiscal variables have irregular effect on the steady level of income per capita and all fiscal variables have an undesirable consequence on the fraction of the labor force allotted to research and development.

Jhingan, (2006) demonstrate that the endogenous progression model puts emphasis on practical progress stemming from the rate of investment initiatives, the capital stock size and the available human capital. Nnanna et al, (2004) reported that financial development can influence

growth in three ways under endogenous growth model, the three ways are; increasing the social marginal productivity of capital, raising the efficiency of financial intermediation, and influencing the personal savings rate. Therefore, it is incumbent upon financial institution to effect economic growth by proficiently carrying out its roles, which includes the provision of credit. Therefore, from the above empirical literature, it is evident that policy measures that bring about change on variables like money supply and inflation will automatically affect the growth of an economy.

Purchasing Power Parity Theory

The purchasing power parity theory originates from the writings of the renowned Swedish economist Gustav Cassel, (1918). This economic theory equates to various countries' currencies by using a "basket of goods" method. However, based on this concept, two different currencies are at par when a basket of goods is priced in a similar manner in both countries. Cassel states that deviancies from PPP indicate that a country's exchange rate is incorrectly valued. In the paper, “The Purchasing Power Parity Puzzle”, Rogoff, (1996) defines a consensus view in PPP research of three to five-year half-lives, which is absolutely too slow to be attuned to arbitrage opportunities. In the attempts to establish any existing evidence in favor of PPP, weaker forms of PPP have been identified, occasionally with doubtful policy relevance (Home, 2004).

According to Reid & Joshua (2004), this theory suggests that the rate of change of the exchange rate equates to the difference between the inflation rates in the two or more countries. Empirical literature shows a relationship between economic growth and exchange rate since, if the percentage change is positive, then the foreign currency is gains against the home currency. This will affect most developing countries like Kenya since in monetary terms, her imports exceed her exports. A negative percentage depicts that the foreign currency is depreciating and home currency is appreciating.

Efficient Stock Market Theory

It is a model which was hypothesized by Fama, (1970) that defines an efficient financial market as the one which security prices entirely reflect the existing data or information. The growth of an economy depends on various factors as well as various players in a Nation. The key point here is to determine how various categories in an economic setup have been represented by required recourses needed for them to establish themselves Elizabeth (2018).

Variables of macroeconomics such as inflation the supply of money in the country, and exchange rate determine source of stock prices Fama, (2009); Chen et al., (2003) and Mayasami & Sims (2002). The Efficient Market Theory permits us to make an assumption that

changes in these macroeconomic factors certainly have results on the nation's economic performance.

Empirical Literature Review

Economic Growth

Economic growth is the increment in the goods and services manufactured thanks to an existing economy, classically a nation, over a relatively long period of time (Waqas et al (2015). It is classified as a proportion of increase in real gross domestic product which is adjusted for inflation. Shearer (1961), states that for needs of measurement, the economic growth of a given nation is in a continuous growth in its population and product per capita. Landefeld et al, (2008) in their paper titled "Taking the Pulse of the Economy: Measuring GDP", defines Gross domestic (GDP) as a financial estimate of the market value of all the goods and services manufactured or produced in a period of time and it can be quarterly or yearly. Nominal GDP measures are usually used to ascertain the economic progress of a given country or region so as to draw international comparisons. Tjukanov, (2011) in the paper titled "Gross Domestic Product as a Modern-day Economic Indicator" defines Gross Domestic Product (GDP), as a representation of the entire market value of all finally produced services and goods based on a set period of time by taking into account all the factors of production located within a country. In addition, GDP does not take into account intermediate goods, but only newly introduced products and services so as to avoid instances of double counting. Calculation of GDP can be done in three different ways, firstly by value added approach. It entails adding up the gross output of different industries which is followed by subtracting existing intermediate inputs, to eradicate double counting. Alternatively, it could be calculated by income approach, which examines the income received by different elements of production. The GDP can also be established through the use of final demand (or expenditures) approach, which estimates the various activities, such as level of investment and mode of consumption across diverse industries and the value of imports deducted from those of exports. (Landerfeld, Seskin & Fraumeni, 2008).

Varied scholarly works show that gross domestic product (GDP) growth plays an important role propagating investment opportunities. Gompers & Lerner, (1998) establishes that an advanced GDP growth translates to a higher desirable and potentially viable opportunities for entrepreneurs since it often lead to a higher need for venture funds.

There exists six main stimulators of economic growth. In most cases, four types are categorized under the supply factors that are not limited to natural resources, capital goods, human resources as well as technology. The other two are demand and efficiency factors. A number of studies have examined the dynamics underlying economic growth. Working with non-

identical methodological and conceptual points of view, the studies have employed importance on a distinct set of helpful parameters and offered varied level of perceptions to the sources of economic growth (Lensink & Morrissey, 2006).

Several papers show that gross domestic product (GDP) growth plays a significant role in attracting investment. Gompers & Lerner, (1998) establishes that a higher GDP growth implies higher attractive opportunities for entrepreneurs, which in turn lead to a higher need for venture funds.

There are six major stimulators of growth. In most cases, four of these are categorized under the supply factors which include natural resources, human resources, capital goods, and technology. The other two are demand and efficiency factors. A number of studies have examined the dynamics underlying economic growth. Working with non-identical conceptual and methodological viewpoints, these studies have employed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth Lensink & Morrissey, (2006).

The influence of inflation on economic growth

Risso and Carrera, (2009), set to estimate the long-run relationships and threshold effects between inflation and economic growth in Mexico. That study used the cointegration technique, and found a significant and negative long-run relationship between inflation and economic growth for the Mexican economy. In addition, it was found that inflation was weakly exogenous. In the period 1970-2007 real GDP was elastic with respect to inflation, and therefore, considering the estimated coefficient, an increase of 1 percent on inflation produced a decrease of 1.5 percent on real GDP.

Kyereboah-Coleman (2012), set to look at inflation targeting (IT) and its effect on inflation management in Ghana. The study employed monthly time series data from 1980 to 2009.The results gathered in that study demonstrated that IT had a significant impact on the reduction of inflation series in recent years and had reduced the persistence of inflation series considerably. It was largely amplified that the implementation of an IT framework in Ghana had been a success and had contributed to a change in the conduct of monetary policy towards best practice.

Chowdhury, (2014), noted that, Inflation and its related uncertainty can impose costs on real economic output in any economy. The study aimed to analyze the relationship between inflation and inflation uncertainty in India. The methodology used was a generalized autoregressive conditional heteroscedasticity (GARCH) model and Granger Causality test. Initial estimates showed that the inflation rate was a stationary process. The maximum

likelihood estimates from the GARCH model revealed a strong support for the presence of a positive relationship between the level of inflation and its uncertainty.

Baharumshah and Soon (2014), examined the causal relationships between inflation, output growth and their uncertainties in Malaysia. Based on the asymmetric Generalized Autoregressive Conditional Heteroskedasticity model, the study found a strong evidence favoring a positive effect of a change in the inflation uncertainty as predicted by the Friedman-Ball hypothesis. In addition, inflation (inflation uncertainty) had direct (indirect) negative effect on the output growth. Misati, Nyamongo, Njoroge and Kaminchia (2012), set to assess the suitability of adopting inflation targeting in an emerging market, based on the pre-conditions of inflation targeting. The results therefore supported the fiscal theory of price level.

Fregert and Jonung (2010), argue that in the crisis period, the relationship between inflation and growth of an economy significantly becomes weaker and negative. It can then possibly be explained that other factors have a more major role in determining the price of commodities bought internally and those that are sold outside. It is rather the uncertainty that drives the relationship between inflation and the rate at which an economy is growing. According to Devarajan and Fengler (2013), inflation hurt the poor especially in the developing countries who have to cut on their spending when faced by inflation. This would, in turn, lead cutting down on the expense of very key items like education and healthcare, he then asserts that, because of the above, inflation becomes the worst tax to the poor. According to Kiptui (2013), Kenya's inflation rate is driven by domestic developments in the medium to long-term but in the short term other factors come into play and contribute to the inflationary pressure. The study argues that movements in inflation are as a result of price developments abroad and real exchange rate changes. The study also uses the p-star model to explain the effect of policy change in a timely manner making it possible to achieve price stability and consistency between monetary policy decisions and the macro environment.

The influence of stock market performance on economic growth in Kenya

Naik and Padhi (2015), empirically examined the impact of stock market development on the economic growth for a panel of 27 emerging economies using annual data over the period from 1995 to 2012. To achieve the study objectives and to mitigate the endogeneity problem that exists in the given model, the authors use a dynamic panel "system GMM" estimator. The authors also use a heterogeneous panel causality test to examine the direction of causality among the variables. The empirical findings indicated that stock market development significantly contributes to economic growth. Further, a unidirectional causality running from stock market development to economic growth was found. These findings were consistent with

the supply-leading hypothesis. The findings suggested that a well-functioning stock market, a more globalized economy and increasing aggregate investment can potentially foster the economic growth in those emerging economies.

Raza, Jawaid, Afshan and Karim, (2015), investigated the impact of foreign capital inflows and economic growth on stock market capitalization in Pakistan by using the annual time series data from the period of 1976 to 2011. The study also employed the autoregressive distributed lag bound testing cointegration approach, the error correction model and the rolling window estimation procedures. Results indicate that foreign direct investment (FDI), workers' remittances and economic growth have significant positive relationship with the stock market capitalization in long run as well as in short run. Results of the dynamic ordinary least square and the fully modified ordinary least square suggest that the initial results of long-run coefficients were robust. Results of variance decomposition test show the bidirectional causal relationship of FDI and economic growth with stock market capitalization. However, unidirectional causal relationship is found in between workers' remittances and stock market capitalization.

Laopodis, and Papastamou (2016), re-examined the relationship between a country's aggregate stock market and general economic development for 14 emerging economies for the period from 1995 to 2014. First, the authors use cointegration analysis to determine the simple dynamics among the variables. Second, the authors utilize vector autoregression analysis to study the dynamics among the variables for the 14 countries. Third, the authors employ panel analysis to determine common variations among the variables and across countries. The study found that the stock market was positively and robustly correlated with contemporaneous and future real economic development.

The influence of exchange rate on economic growth

Wong (2013), examined the real exchange rate misalignment and economic growth in Malaysia. The result of the autoregressive distributed lag (ARDL) approach and the generalized forecast error variance decomposition were presented. Moreover, the result of the ARDL approach shows that an increase in real exchange rate misalignment will lead to a decrease in economic growth. More specifically, devaluation would promote economic growth and appreciation would hurt economic growth. Exchange rate can be a policy variable to influence economic growth. Real exchange rate misalignment should be avoided to enable the allocation of resources in the economy according to fundamentals.

Iyke (2017), set to uncover the channels through which real exchange rate undervaluation influences the performance of the South African economy. The author

decomposes the South African economy into three sectors: agriculture, industry, and services. Specifying a model for each sector, the author employs the ordinary least squares (with Newey-West and robust standard errors) and generalized method of moments estimation techniques. The annual time series data cover the period 1962-2014.The author found out that the real exchange rate undervaluation exerted a positive influence on agriculture and industry, and a negative impact on the services sector of the economy.

Kandil and Dincer (2008), examined the effects of exchange rate fluctuations on real output, the price level, and the real value of components of aggregate demand in Egypt and Turkey. Building on a theoretical model that decomposed the movements in the exchange rate into anticipated and unanticipated components, the empirical investigation traced the effects through demand and supply channels. The results found that in Turkey, anticipated exchange rate appreciation had a significant adverse effects, contracting the growth of real output and the demand for investment and exports. In Egypt, anticipated exchange rate appreciation decreased export growth. This then caused the decrease in real output.

Lose of value in the rate of exchange can merely safeguard the local industry since production cost rises much less than the depreciation rate as compared to an increase in prices of imported equivalent. This currency depreciation leads to an improved and conducive environment for home industry production. Also, a rise in the rate of exchange will lead to foreign currency gaining though in a well-controlled macroeconomic (Nwankwo, 2006).

The influence of remittance on economic growth

Awad and Sirag (2018), set to investigate the presence of the Dutch disease hypothesis through examining the remittance-growth nexus using annual data for Sudan covering the period 1977-2015. The study had employed the autoregressive distributive lag (ARDL) technique because of its several advantages. The ARDL results showed evidence against the existence of such a hypothesis. More specifically, the results showed that over time, due to the structured nature of the economy, remittances may affect economic growth negatively through several mechanisms including the depreciation rather than the appreciation of the exchange rate.

Jackman, Craigwell and Moore (2009), investigated the potential link between remittances and economic volatility in small island developing states. That study estimated a panel data model using a database containing 20 small island developing states (SIDS) observed over annual intervals between 1986 and 2005. The results suggest that, in general, remittance flows had a stabilizing influence on output and investment volatility. However, given the importance of these flows to SIDS, the volatility of remittances also had a significant and positive impact on both investment and consumption volatility.

Adenutsi (2011), set to provide insights into understanding the finance-growth nexus by verifying the hypothesis that financial development promotes economic growth through its capacity to attract increased international migrant remittances to Ghana. A dynamic equilibrium-correction mechanism model for the period 1987(3) - 2007 (4) was estimated following the Johansen cointegration procedure. The findings reveal two stylized facts with reference to Ghana. First, although financial development Granger-causes international migrant remittance inflows, it is in itself directly detrimental to endogenous growth. Second, international migrant remittance inflows were found to be statistically significant in explaining variations in endogenous growth in the short run as well as in the long run.

Kratou, and Gazdar (2016), set to study the effect of remittances on economic growth in MENA region. The panel data unit-root test as well as the panel data co-integration was used for the purpose of the long-run remittances growth relationship and the IV technique with GMM option was adopted to study the short-run link. The study showed empirical evidence that remittances had a positive effect on economic growth in the long run and a negative effect in short run.

Azam (2015), examined the macroeconomic impact of migrant workers' remittances on economic growth in four developing Asian countries namely: Bangladesh, India, Pakistan and Sri Lanka. That study utilized the annual time series data over the period 1976 to 2012 and the ordinary least squares was used as an analytical technique for parameters estimation. Empirical results supported the existence of a significant positive relationship between migrant workers remittances and economic growth. The other control variables such as foreign direct investment, openness to trade and infrastructure are also found to be statistically significant with expected signs.

Craigwell, Jackman and Moore (2010), assessed the impact of remittances on economic volatility of the receiving country. A panel of 95 countries over the period 1970-2005 was employed in the analysis. To assess the impact of remittances on volatility a multivariate model was estimated using a panel fixed effects approach with cross-section weights. The study reported that remittances played a key role in mitigating the effect of adverse output shocks but exert no significant influence on consumption and investment volatility. Moreover, important differential impacts exist across the various country groupings.

Research Gap

From most studies done on the influence of macroeconomic variables on economic growth of a country, more has been done on the effect of interest rates on the growth and development of an economy, effect of youth unemployment on the economy while others have looked at the

effect of exchange rate on economic growth but it is well known that exchange rates, level and rate of inflation even the rate of unemployment vary from country to country. Some of the early explorers in this field include; Phillips. (1962), who looked at Employment, Inflation and Growth, Friedman, (1963) who did a research on Inflation: Causes and Consequences, Paldam & Martin (1973) On an Empirical Analysis of the Relationship between Inflation and Economic Growth in 12 Countries, 1950 to 1969 and few others.

Locally, scholars have researched on macroeconomic variables and how they affect the performance of various units in the economy. Some of these studies include; Nduga & Muriu (2014) who researched on the impact of macroeconomic variables on stock market returns in Kenya, Kiganda (2014) who examined the effect of Macroeconomic Factors on Commercial Banks Profitability in Kenya: Case of Equity Bank Limited, Gathuru (2014) who looked at the effect of macroeconomic variables on the value of real estates supplied in Kenya, Umotho (2014), Mwangi (2017), who both did a research on the effects of macroeconomic variables on financial Performance of insurance companies in Kenya.

From most of these studies, more emphases has been put on the effect of macroeconomic variables on the performance of specific units of the economy. From this, therefore, there is the need to bridge this gap in knowledge by looking at the influence of the macroeconomic variables on the entire economic growth of Kenya.

Summary of Literature Review

After keenly looking at the effect of macroeconomic variables literature on economic growth, it is clear that independent researchers have examined different macroeconomic variables with the aim of finding out their effect on various areas of economic development. Some of the areas include; the financial performance of the stock markets, the financial performance of commercial banks etc. The concluding results of these studies have been different. The empirical results indicated that macroeconomic variables relationship with economic growth can either be positive, negative or none at all. For example, the findings of the studies done by Desaro (2012) among others showed minimal relationship between the macroeconomic variables and stock market indices while the study done by Patra & Poshakwale (2006) revealed there is no correlation found between the selected macroeconomic variable and economic performance.

Because of these divergent results from reviewed studies, depending on the variables included in the study as well as the state of industrialization or economic status of the country of study and the method of analysis employed, I find it appropriate therefore that more studies need to be done for harmonized results. In Kenya, for instance, studies that have researched on the influence of macroeconomic variables on the country's economy have dwelt on various

sectors of the economy e.g. real estates, Commercial Banks Profitability among others and not the entire economy. It is for this reason therefore, this study seeks to carry out research on the influence of macroeconomic variables on economic growth in Kenya.

RESEARCH METHODOLOGY

Research Design

According to Dul & Hak (2008), a research design is an order of conditions for collection, measuring and analysis of data in a manner that aims to incorporate relevance with the research purpose. While Gall *et al.* (2006) define a research design as a detailed outline of how the research was undertaken. It specifies the methods and procedures used to collect and analyze the data. The study employed descriptive as well as correlation research designs. Correlational research design entails measuring two variables and analyzing the relationship between them, with no influence or manipulation of an independent variable.

Sample period

The sample period was composed of quarterly data for 14 years beginning 2004q1 to 2017q4. This period was selected considering the changes in the country's leadership. The new leadership which had come into power in the year 2002 brought in changes among them the expansion on international trade. The period is also relevant because it adequately represents the country's current economic conditions.

Data Collection

The study relied on secondary data collection methods. Ligthelm & Wyk, (2005) defines secondary data as information gathered by someone else other than the researcher for some other reason than the research project at hand Ligthelm & Wyk, (2005). The secondary data was obtained from the Kenya National Bureau of Statistics (KNBS), the Central Bank of Kenya and data from the official websites of the World Bank and the International Monetary Fund. This data was collected from the official websites in order to ensure that only data that are credible and that data are collected covers all the variables of interest to the study. The importance of sourcing data from official websites also ensures the validity and reliability of the results.

Data Analysis

Kothari (2004) argues that data, processing implies editing, coding, classification and tabulation of collected data so that they are amenable to analysis. The term analysis refers to the computation of certain measures along with searching for patterns of relationship that exist

among data-groups. Kombo and Tromp, (2011), note that data analysis refers to examining what has been collected in a survey or experiment and making deductions and inferences. The data analytical technique that was used was quantitative techniques in nature. These are correlation analysis and multiple regression analysis. The data was analysed with the help of eviews econometric software. Data was transformation into logarithmic form to allow for ease estimation of parameters and stabilization of the variance. The data analytical techniques that were used included, the test of unit roots for all the time series variables, Test of Multicollinearity using pair-wise correlation matrix and multiple regression analysis.

Analytical model

The unit of analysis is secondary data obtained from CBK, KNBS, the World Bank and the International Monetary Fund. The variables involved included Inflation, Stock market performance, Exchange rate, Remittance and economic growth. Correlation method and regression method were used to examine the connection between macroeconomics variables (the independent variables) and economic growth (the dependent variable). Time series empirical data on the chosen macroeconomic variables was employed to examine the causal relationship between independent macroeconomic variables and economic growth in Kenya.

The nonlinear Cobb–Douglas function below was employed as the data generating process used:

$Y_t = \beta_0 X_1^{\beta 1} X_2^{\beta 2} X_3^{\beta 3} X_4^{\beta 4}$ ……..eq3.1

Taking the natural logarithm of equation above and considering the case of four explanatory variables, the model was converted into the following linear form:

Logy=β0+β1logx1+β2logx2+β3logx3+β4logx4 +μ…….eq3.2

Where:

Y is the dependent variable which is Economic Growth

β0 is the Y economic growth

β1, β2, β3, β4, are the coefficients of the predictor variable and

X1=Inflation, X2=Stock market performance, X3=Exchange rate and X4=Remittance; While μ= is the error term. Balance of payment and interest rates are considered to be the constant (control variables).

An ARDL is a least squares regression containing lags of the dependent and explanatory variables. ARDLs are usually denoted with the notation ARDL (p*, q1…….qk*), where *p* is the number of lags of the dependent variable, *q* is the number of lags of the first explanatory

variable, and *q*k is the number of lags of the k-th explanatory variable. γ_i is the coefficients of lagged dependent, y_(t-i) is the lagged dependent, x_(,t-i) is the lagged independent and 〖'B〗_(j,i) is the coefficient of lagged independent.

An ARDL model may be written as:

$$\Delta \ln Y_t = \alpha_0 + \sum_{i=1}^{p} \beta_{1i} \Delta Y_{t-1} + \sum_{i=0}^{q} \beta_{2i} \Delta Inf_{t-i} + \sum_{i=0}^{q} \beta_{3i} \Delta S_{t-i} + \sum_{i-0}^{q} \beta_{4i} \Delta ER_{t-i} + \sum \beta_{5i} R_{t-1} + \delta_1 LnY_{t-1} + \delta_2 Inf_{t-1} + \delta_3 Smp_{t-1} + \delta_4 ER_{t-1} + \delta_5 R_{t-1} + \varepsilon_t$$

Diagnostic Tests

The following diagnostic tests were employed in the study.

Pair-Wise Multicollinearity Test

Multicollinearity is the problem that occurs when the explanatory variables are very highly correlated with each other and it causes the variables to deviate from the principle of orthogonally. Brook (2002) notes further that, if there is no relationship between the explanatory variables, they are said to be orthogonal to one another. If the explanatory variables are orthogonal to one another, adding or removing a variable from a regression equation does not cause the values of the coefficients on the other variables to change.

Unit Root (Stationarity) Tests

The concept of integration and stationarity was the building blocks of this research. These concepts were used since empirical literature has suggested that most financial marker time series data are integrated of order one *I*(1) which is greater than order zero *I* (0). New unit root test that considers test of stationarity among variable in a group panel setting rather than individual variables were used (Baltagi & Kao, 2001). This study therefore used ADF - Fisher Chi-square and PP - Fisher Chi-square test since they are the most recent to be developed unit root tests and considered to be the most robust.

Co-integration Test

Engle and Granger (1987) assert that if each element of a vector of time series first achieves stationarity after differencing, but a linear combination is already stationary, the time series are said to be co-integrated with co-integrating vector *α*. This paper sought to test for the existence of co-integration in the process of coming up with the model to eliminate the problem of spurious regression.

Autocorrelation Test

Breusch-Godfrey serial correlation Lagrange Multiplier test was employed to test for the presence of autocorrelation of the error terms.

Heteroskedasticity Test

Heteroskedasticity ARCH Test was executed to assess the level of heteroskedasticity in the model. This test was chosen since it most appropriate for the time-series data. Its primary intention is to assess the fitness of the model.Engle (1982) notes that the problem caused by heteroskedasticity is that it causes the mean and the variance of a variable to evolve over time. This makes any inference from such variable to be erroneous. Engle tag this special kind of heteroskedasticity of variance in time series as Autoregressive Conditional Heteroskedasticity (ARCH).

RESULTS AND DISCUSSIONS

Table 1: Descriptive Analysis

	Economic growth	Inflation rate	Stock market performance	Exchange rate	Remittances
Mean	5.14	1.99	8.29	4.41	11.14
Median	5.40	1.94	8.29	4.40	11.04
Maximum	8.40	2.95	8.61	4.63	12.22
Minimum	-0.10	0.96	7.89	4.13	10.18
Std. Dev.	1.86	0.50	0.202	0.13	0.58
Skewness	-0.85	0.24	-0.21	0.10	-0.02
Kurtosis	3.74	2.26	1.96	2.17	1.68
Jarque-Bera	8.03	1.84	2.93	1.68	4.04
Probability	0.017	0.39	0.23	0.43	0.13
Observations	56	56	56	56	56

Economic growth

Table 1 presents some elementary tests of normality. This variable was estimated by the rate change in economic growth. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low economic growth mean of 5.14% was associated with moderate growth of the economy. The standard deviation of 1.86% was high. The wide gap between maximum and minimum value (Maximum; 8.40, Minimum; -0.10) of economic growth indicates that there is a high difference between low

and high economic growth values. Economic growth portrays a negative Skewness -0.85 indicating a left tail of distribution which indicate that the variable is asymmetric. Kurtosis value was 3.74 which is greater than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value of (8.03) and a p-value of 0.017 shows that the variable is not normally distributed.

Inflation

Table 1 presents some elementary tests of normality. This variable was estimated using the change in percentage of inflation. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low inflation mean of 1.99 % was associated with less volatility of the series. The standard deviation of; 0.50 % was very low. The wide gap between maximum and minimum value (Maximum; 2.95, Minimum; 0.96) of inflation indicates that there was a high difference between low and high inflation values. Inflation portrays a positive Skewness 0.24 indicating a left tail of distribution which indicate that the variable is asymmetric. Kurtosis value was 2.26 which was less than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value (1.84) and a p-value of 0.39 shows that the variable is normally distributed.

Stock market performance

Table 1 presents some elementary tests of normality. This variable was estimated by the change in percentage of stock market performance. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low export mean of 8.29 % was associated with less volatility of the series. The standard deviation of; 0.202 % is very low. The wide gap between maximum and minimum value (Maximum; 8.61, Minimum; 7.89) of stock market performance indicates that there was a low difference between low and high stock market performance values. Stock market performance portrays a negative Skewness -0.21 indicating a left tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 1.96 which was less than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value (2.93) and a p-value of 0.23 shows that the variable not normally distributed.

Exchange rate

Table 1 presents some elementary tests of normality. This variable was measured by the percentage change in Exchange rate. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low

Exchange rate mean of 4.41 was associated with less volatility of the series. The standard deviation value of 0.13 was very low. The wide gap between maximum and minimum value (Maximum; 4.63, Minimum;4.13) of Exchange rate indicates that there was a high difference between low and high Exchange rate values. Exchange rate portrays a positive Skewness 0.10 indicating a right tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 2.17 which was less than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value (1.68) and a p-value of 0.43 shows that the variable was not normally distributed.

Remittances

Table 1 presents some elementary tests of normality. This variable was measured by the percentage change in Remittances. The measures used were mean, median, maximum and minimum value, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low remittances mean of 11.14 was associated with less volatility of the series. The standard deviation of 0.58 % was very low. The wide gap between maximum and minimum value (Maximum; 12.22, Minimum 10.18) of remittances indicates that there is a high difference between low and high Remittances values. Remittances portrays a negative Skewness -0.02 indicating a left tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 1.68 which was less than 3, which shows that the variable was not normally distributed. Furthermore, significant JB value (4.04) and a p-value of 0.13 shows that the variable was not normally distributed.

Economic growth

Table 1 presents some elementary tests of normality. This variable was estimated by the rate change in economic growth. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low economic growth mean of 5.14% was associated with moderate growth of the economy. The standard deviation of 1.86% was high. The wide gap between maximum and minimum value (Maximum; 8.40, Minimum; -0.10) of economic growth indicates that there is a high difference between low and high economic growth values. Economic growth portrays a negative Skewness -0.85 indicating a left tail of distribution which indicate that the variable is asymmetric. Kurtosis value was 3.74 which is greater than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value of (8.03) and a p-value of 0.017 shows that the variable is not normally distributed.

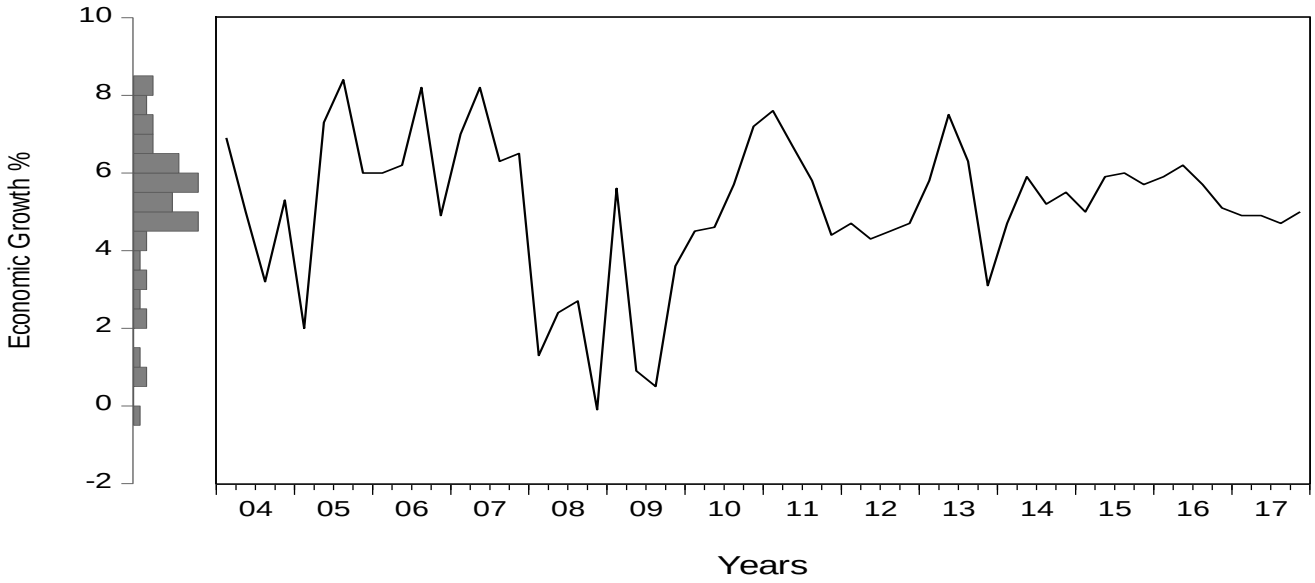

Figure 1: Economic Growth against Time

Figure 1 presents the plot of GDP or the economic growth against time. From the graph it can be seen that the economic growth in Kenya has been experiencing volatility over time. From 2004 to 2007 the economy was on an upward trend. However in 2008 to 2010 the economy was on recession especially due to post-election violence. However since 2010 the economic growth has remained relatively high and shows a sign of recovery.

Inflation

Table 1 presents some elementary tests of normality. This variable was estimated using the change in percentage of inflation. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low inflation mean of 1.99 % was associated with less volatility of the series. The standard deviation of; 0.50 % is very low. The wide gap between maximum and minimum value (Maximum; 2.95, Minimum; 0.96) of inflation indicates that there is a high difference between low and high inflation values. Inflation portrays a positive Skewness 0.24 indicating a left tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 2.26 which was less than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value (1.84) and a p-value of 0.39 shows that the variable is normally distributed.

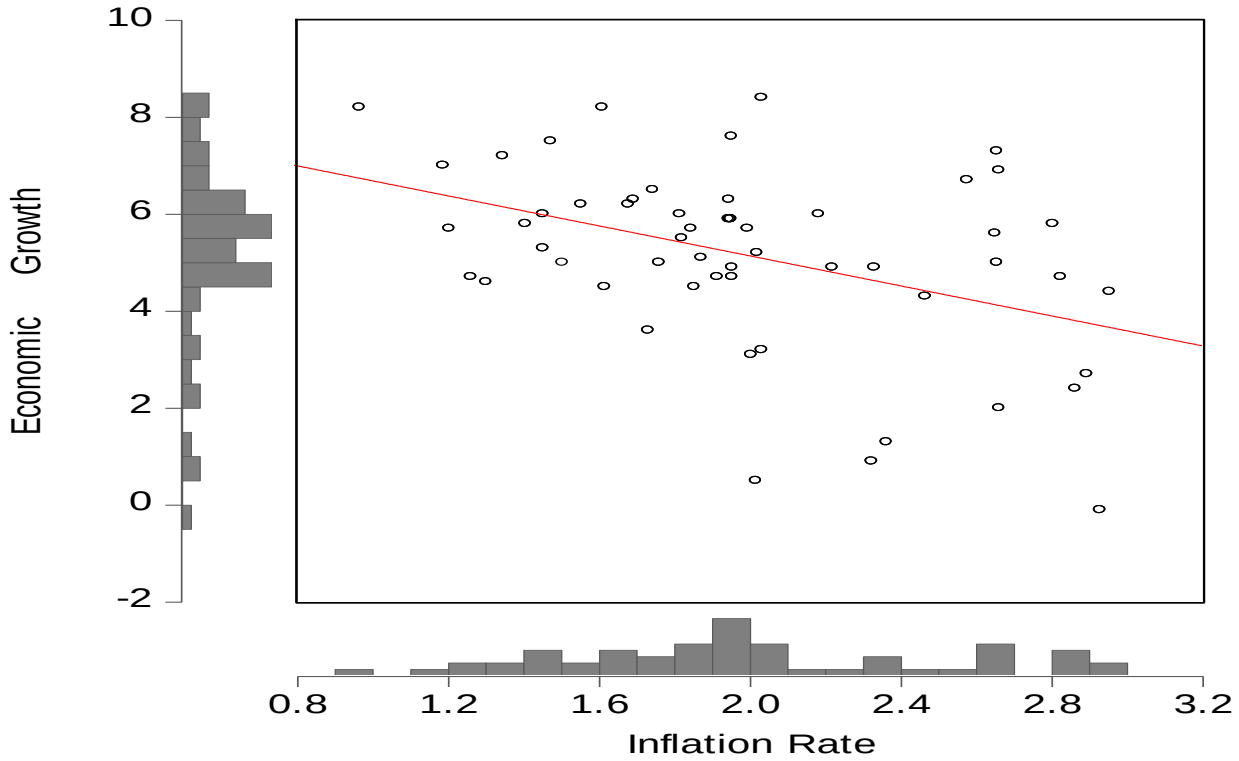

Figure 2: Economic Growth against Inflation Rate

Figure 2 presents the plot of GDP or the economic growth against inflationary pressure. From the graph it can be seen that the economic growth in Kenya has a negative relationship or association with inflation. The interpretation was that when inflation goes up there is a likelihood of the economic growth to go down.

Stock market performance

Table 1 presents some elementary tests of normality. This variable was estimated by the change in percentage of stock market performance. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low export mean of 8.29 % was associated with less volatility of the series. The standard deviation of; 0.202 % is very low. The wide gap between maximum and minimum value (Maximum; 8.61, Minimum; 7.89) of stock market performance indicates that there was a low difference between low and high stock market performance values. Stock market performance portrays a negative Skewness -0.21 indicating a left tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 1.96 which was less than 3, which shows that the variable is not normally distributed. Furthermore, significant JB value (2.93) and a p-value of 0.23 shows that the variable not normally distributed.

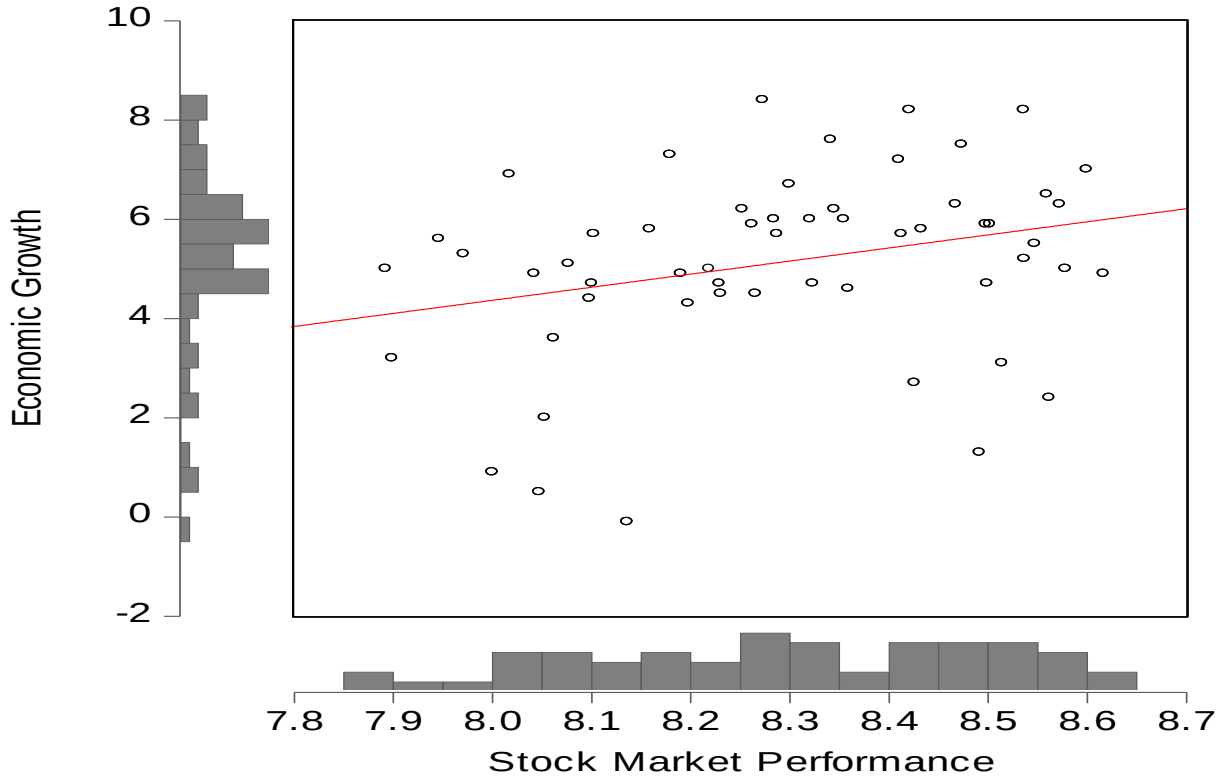

Figure 3: Economic Growth against Stock Market Performance

Figure 3 presents the plot of GDP or the economic growth against stock market performance. From the graph it can be seen that the economic growth in Kenya has a positive relationship or association with stock market performance. The interpretation was that when stock market performance goes up there is a likelihood of the economic growth to go up. This is not surprising since rises in stock prices signals confidence in economic activities.

Exchange rate

Table 1 presents some elementary tests of normality. This variable was measured by the percentage change in Exchange rate. The measures utilized minimum and maximum values, median, mean, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low Exchange rate mean of 4.41 was associated with less volatility of the series. The standard deviation value of 0.13 was very low. The wide gap between maximum and minimum value (Maximum; 4.63, Minimum; 4.13) of Exchange rate indicates that there was a high difference between low and high Exchange rate values. Exchange rate portrays a positive Skewness 0.10 indicating a right tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 2.17 which was less than 3, which shows that the variable is not normally distributed.

Furthermore, significant JB value (1.68) and a p-value of 0.43 shows that the variable was not normally distributed.

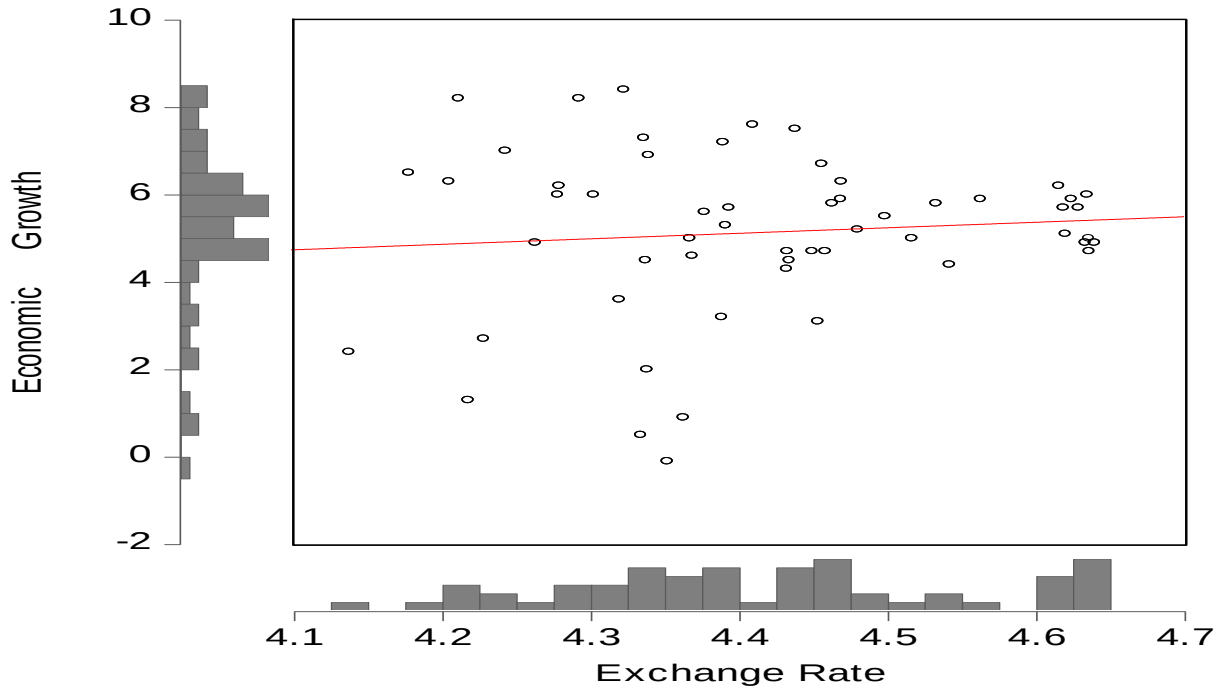

Figure 4: Economic Growth Against exchange rate

Figure 4 presents the plot of GDP or the economic growth against exchange rate. From the graph it can be seen that the economic growth in Kenya has a positive relationship or association with exchange rate. The interpretation was that when Kenyan currency depreciate economic activities goes up. A deeper interpretation is that depression of Kenya currency may motivate more exports thus leading to economic recovery.

Remittances

Table 1 presents some elementary tests of normality. This variable was measured by the percentage change in Remittances. The measures used were mean, median, maximum and minimum value, standard deviation, skewness, kurtosis and Jarque-Bera (JB). Positive and low remittances mean of 11.14 was associated with less volatility of the series. The standard deviation of 0.58 % was very low. The wide gap between maximum and minimum value (Maximum; 12.22, Minimum 10.18) of remittances indicates that there is a high difference between low and high Remittances values. Remittances portrays a negative Skewness -0.02 indicating a left tail of distribution which indicate that the variable is asymmetry. Kurtosis value was 1.68 which was less than 3, which shows that the variable was not normally distributed.

Furthermore, significant JB value (4.04) and a p-value of 0.13 shows that the variable was not normally distributed.

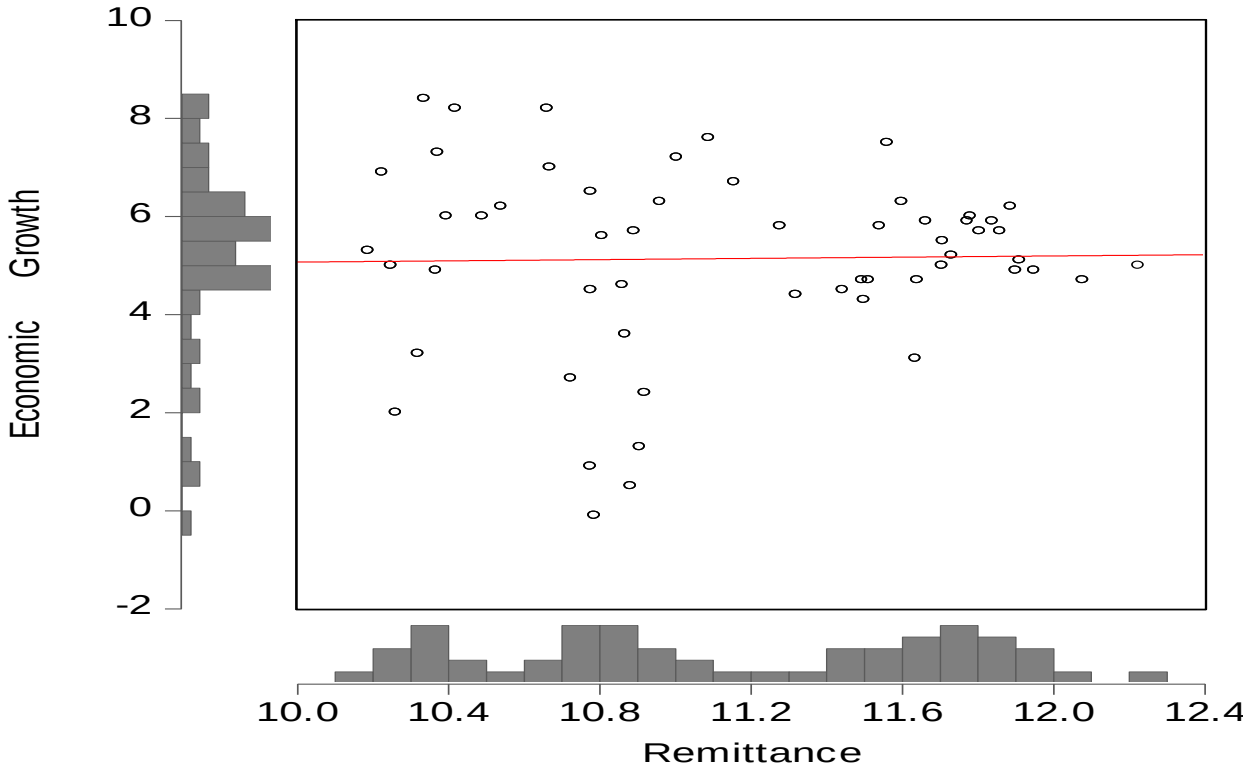

Figure 5: Economic Growth against Remittances

Figure 5 presents the plot of GDP or the economic growth against remittances. From the graph it can be seen that the economic growth in Kenya has a flat relationship or association with remittances expectation was to see a positive linear association between economic growth and remittances.

Unit Root Test

Kennedy,(2008), note that most macroeconomic time series data is integrated of order (1) which is greater than order (0). This therefore means running a normal regression would yield a spurious regression. Kennedy argue further that, a variable is said to be integrated of order d, written I (d), if it must be differenced d times to be made stationary. Thus a stationary variable is integrated of order zero, written I (0), a variable which must be differenced once to become stationary is said to be I (1), integrated of order one. Economic variables are seldom integrated of order greater than two, and if non-stationary are usually I (1).

Table 2: Unit Root Test Results

Variables	Augmented Dickey-Fuller test statistic (P- value)	1% level	5% level	10% level
Economic growth	-4.626 (0.0004)	-3.555	-2.915	-2.595
Inflation	-4.259 (0.0013)	-3.563	-2.919	-2.596
Real exchange rate	-6.085 (0.000)	-3.557	-2.917	-2..596
Stock market performance	-3.716 (0.006)	-3.557	-2.917	-2..596
Remittance	-10.577 (0.000)	-3.557	-2.917	-2.596

Table 2 presents the unit roots tests of the five variables (Economic Growth, Inflation, Real exchange rate, Stock market performance and remittance). Economic growth has the Augmented Dickey-Fuller test statistic value of -4.626395 and the associated p-value of 0.0004. This value was found to be more negative than the test critical values at 1%, significant levels. These test statistics revealed that there was no unit root at level since the associated p-value assumed values that were less than 0.05. The interpretation was that economic growth as a variable had a stable mean and a stable variance. Inflation had the Augmented Dickey-Fuller test statistic value of -4.259 and the associated p-value of 0.001. This value was found to be more negative than the test critical values at 1%, 5% and 10% significant levels. These test statistics revealed that there was no unit root at level since the associated p-value assumed values that were less than 0.05. The interpretation was that inflation rate as a variable had a stable mean and a stable variance. Stock market performance had the Augmented Dickey-Fuller test statistic value of -3.716 and the associated p-value of 0.006. This value was found to be more negative than the test critical values at 1%, significant level. These test statistics revealed that there was no unit root at level since the associated p-value assumed values that were less than 0.05. The interpretation was that Stock market performance as a variable had a stable mean and a stable variance. From the test results, Real exchange rate had the Augmented Dickey-Fuller test statistic value of -6.085 and the associated p-value of 0.000. This value was found to be more negative than the test critical values at 1%, significant level. These test statistics revealed that there was no unit root at level since the associated p-value assumed values that were less than 0.05. The interpretation was that Real exchange rate as a variable

had a stable mean and a stable variance. From the test results, Remittance as a variable had the Augmented Dickey-Fuller test statistic value of -10.577 and the associated p-value of 0.000. This value was found to be more negative than the test critical values at 1%, significant level. These test statistics revealed that there was no unit root at level since the associated p-value assumed values that were less than 0.05. The interpretation was that Remittance as a variable had a stable mean and a stable variance.

Correlation Analysis

According to Brook (2002), multicollinearity is the problem that occurs when the explanatory variables are very highly correlated with each other. If there is no relationship between the explanatory variables, they would be said to be orthogonal to one another. The results in the table 3, thus shows that there is no multicollinearity problem since the highest correlation between Independent variables was at least below 85%.

Table 3: Correlation Analysis

T- Statistic Probability	Economic growth	Inflation	Stock market performance	Real Exchange rate	Remittance
Economic growth	1.000				
T-statistic	-----				
Probability	-----				
Inflation	-0.421	1.000			
T-statistic	-3.414	-----			
Probability	0.001	-----			
Stock market performance	0.286	-0.405	1.000		
T-statistic	2.196	-3.255	-----		
Probability	0.032	0.002	-----		
Exchange rate	0.092	-0.010	-0.242	1.000	
T-statistic	0.681	-0.076	-1.836	-----	
Probability	0.499	0.940	0.072	-----	
Remittance	0.020	-0.104	0.181	0.512	1.000
T-statistic	0.145	-0.770	1.352	10.237	-----
Probability	0.885	0.445	0.182	0.000	-----

Table 3 shows the pair-wise correlation matrix. The result for pair-wise correlation, shows that there was no multicollinearity problem since the highest correlation between the independent variables was 0.512 approximately 51.236 % between remittance and real exchange rate. The correlation between Stock market performance and inflation was -0.405. The correlation between exchange rate and inflation was -0.010. The correlation between inflation and remittance was found to be 0.020. The correlation between real exchange rate and stock market performance was found to be -0.242. The correlation between remittance and stock market performance was found to be 0.181 and finally the correlation between remittance and real exchange rate was 0.512. The interpretation was that there was no multicollinearity problem among the variables.

Cointegration Test

Table 4: Bounds Testing

ARDL Bounds Test, Sample: 2004Q3 2017Q4, included observations: 54,
Null Hypothesis: No long-run relationships exist

Test Statistic	**Value**	**k**
F-statistic	11.50796	4
Critical Value Bounds		
Significance	I_0 Bound	I_1 Bound
10%	2.45	3.52
5%	2.86	4.01
2.5%	3.25	4.49
1%	3.74	5.06

From table 4 above, the bounds testing results reject the null hypothesis of no long run relationship among the variables since the F-test statistic value of 11.50796 was greater than the critical values.

Method: ARDL unrestricted model

Table 5 below presents the results of the regression model after correcting for unit root problem using the co-integration technique. The t-statistic values that test the significant of the coefficient of the explanatory variable had achieved the optimal values as showed by the highly significant values of p. The R-squared had a value of 0.829 and on the other hand the value of adjusted R-squared was found to be 0.727. This showed that the most optimal model had an explanation

power of above 72% of the market variation. The value of the F-statistic was found to be 8.184 and the associated p-value was 0.000 and also statistically significant.

The long run estimation

Table 5: Long run Estimates

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNER	4.597684	1.124836	4.087425	0.0003
LNINF	-0.179465	0.182223	-0.984865	0.3316
INR	-0.668688	0.258510	-2.586703	0.0141
LNSMP	0.829198	0.568460	1.458676	0.1538
C	-17.89661	6.701882	-2.670385	0.0115

EC = LNGDP - (4.5977*LNER -0.1795*LNINF -0.6687*INR + 0.8292*LNSMP -17.8966)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	11.34494	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37
			Finite Sample:	
Actual Sample Size	50		n=50	
		10%	2.372	3.32
		5%	2.823	3.872
		1%	3.845	5.15

Table 5 presents the coefficient of the long run cointegration equation. The error correcting equation is given by-

EC = LNGDP - (4.5977*LNER -0.1795*LNINF -0.6687*INR + 0.8292*LNSMP -17.8966).

This relationship was found to be significant at 10% significant level evidenced by the f-test of 11.34 with I (1) of 5.15 at 1% level. The long run coefficients of the real exchange rate was 4.5977 and was significant at 1% level. Inflation on the other hand produced an insignificant coefficient even at 10% significance level.

The coefficient of diaspora remittance was -0.668 which was significant at 5% significance level. Stock market performance also produced an insignificant coefficient. The long run relationship reveal that real exchange rate has a positive effect on economic growth. The positive effect shows that there is a positive relationship between stock market performance and economic growth Naik and Padhi (2015) and Laopodis, and Papastamou (2016) who found out that stock market performance can have a significant effect on economic growth.

The long run relationship also shows that diaspora remittance has a positive relationship with economic growth. The results showed that there was a negative relationship between remittance and economic growth. These results supports those of Awad and Sirag, (2018), Adenutsi (2011), Kratou and Gazdar (2016), who found out that remittances can have a significant effect on economic growth.

Inflation and stock market performance produced insignificant coefficients. However this was not as expected since Naik and Padhi (2015) and Laopodis, and Papastamou (2016) found out that stock market performance can have a significant effect on economic growth while Risso and Carrera, (2009), Chowdhury, (2014), Baharumshah and Soon (2014) who found out that inflation rate can have a significant effect on economic growth.

Table 6: Error Correction Model

ARDL Error Correction Regression

Dependent Variable: D(LNGDP)

Selected Model: ARDL(1, 2, 2, 2, 4)

Case 2: Restricted Constant and No Trend

Date: 05/22/19 Time: 14:50 Sample: 2004Q1 2017Q4 Included observations: 50

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNER)	1.225834	1.422685	0.861634	0.3949
D(LNER(-1))	-4.036992	1.434253	-2.814700	0.0081
D(LNINF)	-0.227294	0.110381	-2.059171	0.0472
D(LNINF(-1))	0.287897	0.107573	2.676296	0.0114
D(INR)	-0.716900	0.420888	-1.703304	0.0976
D(INR(-1))	1.766817	0.440690	4.009210	0.0003
D(LNSMP)	0.470227	0.624386	0.753103	0.4566
D(LNSMP(-1))	0.161008	0.695425	0.231525	0.8183
D(LNSMP(-2))	1.236495	0.664443	1.860951	0.0714
D(LNSMP(-3))	2.433004	0.655087	3.714018	0.0007
CointEq(-1)*	-0.882473	0.099869	-8.836284	0.0000

R-squared	0.787707	Mean dependent var	-0.015756
Adjusted R-squared	0.733273	S.D. dependent var	0.555464
S.E. of regression	0.286873	Akaike info criterion	0.531982
Sum squared resid	3.209541	Schwarz criterion	0.952627
Log likelihood	-2.299553	Hannan-Quinn criter.	0.692166
Durbin-Watson stat	1.593431		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	11.34494	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Table 6 presents the results of the error correction model using the co-integration technique. The t-statistic values that test the significant of the coefficient of the explanatory variable had achieved the optimal values as showed by the highly significant values of p. The results of ECM is less than 1 implying that the model slowly resume to equilibrium after shocks.

Table 7: Hypothesis Testing Results

hypothesis	Conclusion
H_1**Inflation rate has no significant influence on economic growth in Kenya**	Inflation was found to have a consistent negative effect
H_2**Stock market performance has no significant influence on economic growth in Kenya**	Stock market performance was found to have a consistent positive effect
H_3**real Exchange rate has no significant influence on economic growth in Kenya**	Real Exchange rate was found to have a consistent positive effect on economic growth
H_4**Remittance has no significant influence on economic growth in Kenya**	remittance was found to have a mix of positive and negative effect on economic growth given different economic horizons

SUMMARY OF FINDINGS

Inflation rate

The study established that Inflation rate had a statistically significant effect on economic growth in Kenya. The descriptive analysis revealed that Inflation rate, as a key variable was normally distributed from the descriptive statistic results. This implied that the variable could be combined with other variables with similar properties in further analysis. The tests of unit root revealed that the Inflation rate variable had no unit root at level and was thus stationary. Unit root test was conducted to assess the order of integration. The order of integration was necessary in order to establish the most appropriate technique for regression analysis. The correlation results revealed that Inflation rate variable was orthogonal to other independent variables in the study. The interpretation was that, Inflation rate as a variable posed no multicollinearity problem among all the independent variables. The regression results revealed that there was a negative relationship between Inflation rate and economic growth in Kenya.

Stock market performance

The study established that Stock market performance had a statistically significant effect on economic growth in Kenya. The descriptive analysis revealed that Stock market performance as a key variable was normally distributed from the descriptive statistic results. This implied that the

variable could be combined with other variables with similar properties in further analysis. The tests of unit root revealed that the Stock market performance as a variable had no unit root at level and was thus stationary. Unit root test was conducted to assess the order of integration. The order of integration was necessary in order to establish the most appropriate technique for regression analysis. The correlation results revealed that Stock market performance variable was orthogonal to other independent variables in the study. The interpretation was, Stock market performance as a variable posed no multicollinearity problem among all the independent variables. The regression results revealed that there was a positive relationship between Stock market performance and economic growth in Kenya.

Real Exchange rate

The study established that real exchange rate had a statistically significant effect on economic growth in Kenya. The descriptive analysis revealed that real exchange rate as a key variable was normally distributed from the descriptive statistic results. This implied that the variable could be combined with other variables with similar properties in further analysis. The tests of unit root revealed that the real exchange rate variable had no unit root at level and was thus stationary. Unit root test was conducted to assess the order of integration. The order of integration was necessary in order to establish the most appropriate technique for regression analysis. The correlation results revealed that exchange rate variable was orthogonal to other independent variables in the study. The interpretation was, real exchange rate as a variable posed no multicollinearity problem among all the independent variables. The regression results revealed that there was a positive relationship between real exchange rate and economic growth in Kenya.

Remittance

The study established that remittance had a statistically significant effect on economic growth in Kenya. The descriptive analysis revealed that remittance as a key variable was normally distributed from the descriptive statistic results. This implied that the variable could be combined with other variable with similar properties in further analysis. The tests of unit root revealed that the remittance variable had no unit root at level and was thus stationary. Unit root test was conducted to assess the order of integration. The order of integration was necessary in order to establish the most appropriate technique for regression analysis. The correlation results revealed that remittance variable was orthogonal to other independent variables in the study. The interpretation was remittance as a variable posed no multicollinearity problem among all the

independent variables. The regression results revealed that there was a negative relationship between remittance and economic growth in Kenya.

CONCLUSION

Inflation rate was found to have a significant effect on economic growth in Kenya. The study, thus conclude that Inflation rate is a key determinant of economic growth in Kenya. The interpretation was that when Inflation rate goes up in Kenya as a country, the results could be devastating on the economic growth. The negative relationship could be interpreted to mean that the inflation rate in Kenya affect the local industries and production which consequently affect the economy negatively.

Stock market performance was found to have a positive and a significant effect on economic growth in Kenya. The study, thus conclude that stock market performance is a key determinant of economic growth in Kenya. The interpretation was that when a country's stock market performance goes up the results could be encouraging for economic growth to take place. The positive relationship could be interpreted to mean that the Stock market performance in Kenya affect the local industries and production and lead to greater economic performance.

Real exchange rate was found to have a positive and a significant effect on economic growth in Kenya. The study, thus conclude that exchange rate is a determinant of economic growth in Kenya. The interpretation was that when the country's exchange rate goes down or the exchange rate depreciates the results would be encouraging for economy growth to take place. The positive relationship could be interpreted to mean that the exchange rate depreciation in Kenya affect the economy by bringing about greater economic growth.

Remittance was found to have a negative and a significant effect on economic growth in Kenya. The study, thus conclude that remittance is an important determinant of economic growth in Kenya. The interpretation was that when the country's remittances goes up the results could be discouraging for economic growth to take place. The negative relationship could be interpreted to mean that the remittance in Kenya affect the economy but indirectly. The negative effect though was unexpected in this study.

RECOMMENDATIONS

Inflation rate

This study revealed that inflation rate has statistically significant effects on the economic growth in Kenya. The study thus recommends that the government of Kenya should put in place mechanisms that help it monitor the fluctuations in the inflation rate in the country. The government should come up with economic management policies that makes sure that the

inflation rate in the prices of goods and materials in the country is regulated to avert negative consequences in the economic development. The government should check inflation in sectors like, transportation sector, energy sector among others. This finding was in agreement with Risso and Carrera, (2009) Kyereboah-Coleman (2012 and Fregert and Jonung (2010).

Stock market performance

This study revealed that stock market performance has statistically significant effect on the economic growth in Kenya. The study thus recommends that the government of Kenya should put in place mechanisms that help it monitor the fluctuations in the stock market performance activities in the country. The government should come up with economic management policies that makes sure that the Stock market performance is able to attract resources from both the domestic market was well as the foreign markets. This finding was in agreement with Naik and Padhi (2015), andRaza, Jawaid, Afshan and Karim, (2015)

Real exchange rate

This study has revealed that Exchange rate has statistically significant effect on the economic growth in Kenya. The study thus recommends that the government of Kenya should put in place mechanisms that help it monitor the fluctuations in the exchange rate activities in the country. The government should come up with economic management policies that makes sure that the exchange rate is monitored to maintain a steady economic development.In short run, this finding was in agreement with Iyke (2017) and Nwankwo, (2006)

Remittance

This study has revealed that remittance has statistically significant effect on the economic growth in Kenya. The study thus recommends that the government of Kenya should put in place mechanisms that help it monitor the usage of remittances in the country. The government should come up with economic management policies that makes sure that the remittances made by Kenyans living abroad continuously make economic impact in the country. This finding was in agreement with Awad and Sirag (2018)and Jackman, Craigwell and Moore (2009)

Policy Implications

In terms of policy the government should keep track of the effect of macroeconomic variables on economic growth in future to ensure that there is a smooth and predictable outcome when economic decisions are made.

Managerial Implications

The managers of firms that are currently operating and those that intend to operate in Kenya should ensure that they are aware of macro situation in Kenya. The economic environment will help them predict their economic profits.

AREA FOR FURTHER RESEARCH

This research was not able to identify all the possible variables with explanation power on economic growth in Kenya. From the study the value of R-squared was found to be 0.667774 and Adjusted R-squared 0.617218. It is therefore in this light that the future research should consider other variables which would increase the predictive power of the model. The other relevant variables would be variables such as balance of payments and direct foreign investments.

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