

**THE EFFECT OF DIASPORA REMITTANCES ON THE
ECONOMIC GROWTH IN KENYA.**

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DECLARATION

This management research is my original work and has not been presented for a degree in any other university.

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This management research has been submitted for examination with my approval as the University of Nairobi supervisor.

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May God our Father shower you all with abundant grace.

DEDICATION

To my dear parents Mr. & Mrs. Maj.(Rtd) Levi Amugune,

Thank you very much lovely people for this far I have reached because of your encouragement and prayers. Many are the times I felt overwhelmed but you were there for me. God bless you. When I could not be with you due to engagements at school you still understood and the fruit of it is here with me.

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LIST OF ABBREVIATIONS

ARDL – Auto-Regressive Distributed Lag model

BOP- Balance of Payment

CBK – Central Bank of Kenya

EU – European Union

FDI - Foreign Direct Investment

FE - Fixed Effects

GDP – Gross Domestic Product

GMM - Generalized Method of Moments

GNI – Gross National Income

IMF – International Monetary Fund

KNBS - Kenya National Bureau of Statistics

KYC – Know Your Customer

LAC - Latin America and the Caribbean

LDC – Least Developed Countries

MNC – Multi-National Corporations

NAFTA – North American Free Trade Agreement

NASI - Nairobi Securities Exchange All Share Price Index.

NSE - Nairobi Securities Exchange

OLS - Ordinary Least Squares

QR - Quantile Regressions

SPSS - Statistical Package for Social Sciences

US – United States

VAR - Vector Autoregressive Regression

VAT – Value Added Tax

VECM - Vector Error Correction Model

ABSTRACT

The purpose of this research paper was to establish the effect of Diaspora remittances on the economic growth in Kenya. Data for the period 2008-2017 from Central Bank of Kenya website, Kenya National Bureau of Statistics website and the World Economic Development Indicators website was used. To establish the effect of Diaspora remittances on the economic growth in Kenya, lending Interest rates and Inflation rates were also used. The study employed Ordinary Least Squares regression model. Normal plots and frequency histograms were used to test for normality. Descriptive statistics for normal distribution curves were extracted and analyzed. Correlation analysis was employed to determine the nature of relationship between variables. Independent Variables were tested for multi-collinearity to assess the effect they have against each other in the regression model. Scatter plots testing method tested for linearity where residual analysis was carried out to validate the assumptions of linearity in the regression. Homoscedasticity was tested using scatter plots for standardized residuals. Multiple linear regression analysis model was then employed to determine the effects of diaspora remittances on economic growth in Kenya. The study found that both diaspora remittance and interest rates positively impact the economic growth in Kenya although the effect is not statistically significant at confidence level of 90%,95% or 99%. whereas Inflation rates had a significant negative effect on GDP growth rate in Kenya at 99% confidence level. The results show that emphasis should be placed on formal records on diaspora population by establishing formal channels through which remittances can be channeled with ease and at an affordable cost. Tax incentives would encourage investment in the home economy. Inflation should be managed as it erodes economic growth.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Pull - push factors cause people to migrate from their native countries to foreign countries. Pull factors draw migrants into developed countries, for example, developed countries drawing workforce from countries where levels of income are lower. The internet and advancement in telecommunication has eased access to information. Developed countries have low birth rates which has contributed to labour shortage and in times of rapid economic expansion extra people are required. Stable democracies will more likely respect human rights and religious freedom and this draws immigrants into these countries. Youth migrate to seek better jobs and to further their skills and qualifications. Push factors are unfavourable conditions in the home country that make people move from their native countries such as high poverty levels, famine and draught, low income levels, high levels of unemployment, lack of career progression prospects, human victimisation, wars and internal wrangles, harsh environmental changes among others. (Kerri, 1976).

Trans-nationalisation has allowed labour movement between countries to be more fluid. Formation of formal organisations such as NAFTA and the EU through integration process, MNCs, globalisation, the trans-nationalisation of state, classes, political processes and culture make diaspora an independent actor who actively influence their homeland economies as well as foreign policies. Migrants strive to remit money to their kin to keeps them connected to their home country. (Robinson, 1998).

Early economic growth theories recognised that migration influenced standards of living and wellness in both native and host countries. From the literature reviewed, whether the consequences benefit or curtail development of LDCs over time is inconclusive. The reason people migrate (motives) and whether economies and communities in the home country get better when their natives move abroad are the two major guiding policy interest for stakeholders.

Three theories that have captured the concept of immigration, remittances and economic growth include the Harrod (1939) and Domar (1946) Growth model, the Human Capital Theory and the Endogenous Growth Theory. The Harrod - Domar model recognises economic growth as a function of savings. Human Capital Theory examines the costs and benefits of migration and identifies brain drain effect as a cost in the sending country. Endogenous Growth Theory is part of the New Economic Theories that emphasises the concept of human capital, technological improvement and openness of the market.

1.1.1 Diaspora Remittances

A remittance is a private money transfer sent by a migrant to his or her relatives left behind in the home country through formal and informal channels. It is private savings of workers and constitutes household income to the recipient. An economy is affected by private transfers in the sense that the recipient invests the money into the economy through real estate, buying of stock in the stock market, entrepreneurship - using the money as start-up capital for a small business or even through household consumption. Use of formal channels encourages establishment of financial institutions and thus development of the financial sector of the economy. Households receive direct benefit whereas the economy benefits indirectly.

Rapoport and Docquier (2006), found the main purpose for sending money back home to be, investment by migrant in their native country for inheritance purpose, insurance as extra source of financing in times of shock and adverse risk and migrant's willingness to assist relatives in their home country. Brown and Poirine (2005) isolated household makeup, gender and migrant's host country as factors that influence motivation to send money back home. A combination of motives comes into play. Other factors include how vulnerable a migrant's living condition is in the foreign country, period lived in the host country, and connection with community in the home country and the prevailing labor earnings market rates in the host country influences migrant's earnings as this determines how much is remitted back home.

Remittances affect growth of an economy when the volume of funds sent back into the economy are relatively large and influence the domestic GDP, alleviates poverty by increasing family income and standard of living for recipient families and reduce inequality. (Adams, 2005). Large remittances together with others such as tea export, tourism, mining and horticulture earn foreign exchange for a country and influences stability of the local currency by reducing volatility. They promote economic growth by accumulating human capital and poverty alleviation. (Gupita et al. 2009; Mim and Ali 2012). Political and economic instability in many developing countries makes it difficult for them to borrow money as instability could lead to loan default. Such countries depend on remittances for funding. Many developing countries will rely on remittances as a source of funding when they perceive conditions attached to the World Bank funds as a threat to their sovereignty. Remittances enable countries fund development projects of their choice. During natural disasters and economic depression in the home country, remittances appear to increase as migrants seek to cushion their

families against downturn. This makes it countercyclical, increasing during depression when lending and FDIs seem to dry up. They are a stable source as compared to other sources of funds. (Yang, 2006; Rajan and Subramanian, 2006).

Economies tend to highly depend on remittances instead of creating sustainable sources of finance. High dependency on remittances can negatively affect a country's economic growth when there is disturbance in the global economy. When migrants are employed in heavily – cyclical industries like construction, they probably would lose employment during recession which could reduce remittances into their home economies. They may be forced to relocate back home thereby increasing demand for goods and services on an already strained economy. An economy that heavily depends on diaspora will experience drastic cut in its income. When the global economy is flourishing a lot of money will be remitted back home. Dutch disease, where domestic currency will appreciate against the foreign currency will negatively impact the local economy. Exports will become more expensive compared to other countries making them less price competitive, leading to increase in consumption of imports and effectively suppressing domestic industries. Balance of Payment will however greatly improve.

1.1.2 Economic Growth

Economic growth is increase in the amount of goods and services produced by an economy in a given time period. Increase in a country's GDP is a measure of economic growth. GDP is the goods and services produced within a country's borders within a given time period. Gross National Income incorporates total goods and services generated within a countries boundaries and outside the country. Remittance is income earned outside a country but remitted back into the home economy.

When there is growth in the economy, national output increases. This means that households can enjoy more goods and services. Sustained economic growth stimulates job creation thus lower levels of unemployment, increased household incomes, reduced income inequality and in turn, improved standard of living. Economy grows when there is efficient use of inputs such as physical capital, labour productivity and energy or materials. Innovation through development of new goods and services also lead to growth in the economic indicators.

Economic growth positively impacts national income and levels of employment which in turn raises the population's standard of living. It is the uptake of new technologies, change from agricultural to industrial economy, and general upgrade in standard of living. Economic progress of an economy or its qualitative measure portrays economic growth. Policies that promote distribution of economic growth across the country as opposed to concentrating it around cities through efficient allocation of funds lead to economic progress. Diaspora remittances improve living standards of recipients and can also be invested in economic activities thus, impacts economic growth. Macro and micro economic factors such as inflation, interest rates, government spending, taxation, public debt, Aid, grants, domestic borrowing, diaspora remittances & FDI affect economic growth by affect stability of the local currency.

1.1.3 Relationship between Diaspora Remittances and Economic Growth

Remittances impact growth in an economy. It increases consumption at household level through increased household income, increased investment in development projects, increased financial flow during crisis like natural disaster, supporting BoP and increasing capacity to import. Remittances enable purchase of land, construction of a new home construction, capital for businesses, money for purchase of equipment and investment in agriculture (Ratha, et al 2011).

Mim and Ali (2012) argued that remittances could positively impact economic growth when it is spent as would be any other income in productive engagements like constructing houses or education or have a negative impact when its spent on luxuries as opposed to productive ventures like investments or savings. They contended that remittance effect was twofold, depending on how it is spent.

Mundaca (2009) found that remittances increased financial intermediation in the long run thereby growing the economy. When financial services are readily available the economy grows. Remittances can be invested in the stock as well as money market thus bringing about advancement in the financial sector of the economy. Accumulation of capital as well as risk sharing may improve through intermediation.

Wolde-Mariam & Yiheyis (2015) argued that remittances induce rise in savings and ease financial constraints thus availing funds for domestic investment, however this varies by country's development level of its financial institutions. Financial intermediaries are able to wire the funds to recipients who are able to import goods with funds remitted.

Immigration affects domestic politics and policy formulation in a country. These policies affect the economic growth. Foreign workers are therefore a crucial factor in economic growth. Remittances play a crucial part in global economy as they impact the home economy as well as the host economy. Developing countries should institute policies that ensure prudent use of diaspora remittances for efficient and effective economic growth.

Nye and Keohane (1971) was of the view that trans-nationalism impacts foreign policy in the US as well as governance issues for many international organisations. This includes politics between states, values of the various countries among others. Diplomatic relations between two countries as well as taxation policies in both countries affect how much is remitted back to the home country. Some customers lose money through cyber fraud in the process of transmission of funds back to their home economies. Stock market performance and value for money are significantly affected by Inflation, lending rates and rate of exchange which are impacted by remittances.

1.1.4 Diaspora remittances and Kenya's Economy

Kenyans live and work in foreign countries such as the United States, Canada, India, the United Kingdom, North America among others and are constantly sending money home for investment as well as supporting their families left behind. The knowledge and skills acquired play an effective role in facilitating economic development in Kenya on return. These remittances positively impact on Kenya's economy by uplifting living standards of the recipients.

Diaspora remittances in Kenya are looked at from the perspective of which countries have migrants from Kenya and how much are they remitting into the Kenyan economy on monthly basis. (CBK,2017). Volume of remittances from migrants worldwide has sharply increased in the past decade. Many Kenyans are moving to foreign countries in search of skill improvement and better paying jobs. This has increased remittances level and has made it an important source of generating revenue for both the government and commercial banks in Kenya. Keiya, (2014) identified challenges faced by banks in servicing diaspora remittances as ICT under-development, financial constraints, lack of sufficient trained agents for marketing, fluctuating market rate, lack of demographic

data on Kenyans in the diaspora, ignorance on the part of the immigrant, low income jobs leading to low savings and investments.

Government should take measures to boost investor confidence to encourage the Diaspora population to invest more in Kenya. Eliminating corruption, having stable political environment, formulation of policies that ensures macroeconomic environment and generally having the right governance systems can positively impact economic growth in Kenya. Campaigns should be run by the government and non-governmental organizations to educate the Kenyans in Diaspora on the importance of investing in Kenya for growth and development of the country.

1.2 Research problem

This is a quantitative study whose purpose is to explore the effect of remittances on economic growth in Kenya. This research paper will attempt to describe how diaspora remittances impact economic growth. Kiiru, (2010) studied remittances and poverty in Kenya using budget for household. This study intends to engage national statistics on diaspora remittances to Kenya as obtained from Central Bank of Kenya website and the real Gross Domestic Product per capita of Kenya to explore if there exists any relationship between remittances and economic growth.

Policy makers and scholars ignited a debate on development potential of remittances and whether they contribute to the economic welfare of the recipient countries. There was a feeling among some that remittances positively impacts economic growth of recipient. Chami et al, (2009) noted that remittances stabilized output thus in support of the notion that remittances boost growth in recipient economy, can reduce volatility of the economies and stabilise overall demand for goods and services. Proponents feel that remittances enable government generate cash through individual's spending on

imports and taxable goods thereby creating fiscal cushion for countries with cash flow challenges thereby averting debt crises.

Other scholars feel only individual migrants and their families substantially benefit from remittances. Terrazas, (2011) finds ambiguity in impact of migration on home country and remittances may coincide with economic growth but has rarely been the cause of it or forces other than remittances have been at work. Dastidar, (2017) failed to find a strong association between the remittances and growth in the economy. Some studies find weak connection whereas others suggest that growth in the economy reduces due to remittances. There is no evidence of a country that has flourished largely due to remittances. Remittances are viewed as a source of additional income for a household to cater for the basic requirements of clothing, housing and food. Not much is spent on investment projects and education as most of it is consumed by the family, insuring it against poverty. Beaton et al, (2017) noted that negative growth effects of remittances from emigration on labour resources and productivity in the home country seemed to outweigh growth gains from remittances.

Based on the reviews, it is evident that the studies conducted have not been sufficient enough to establish the relationship between of diaspora remittances and growth of the economic. Knowing from statistics that both diaspora remittances to Kenya and economic growth have experienced phenomenal growth notably in the recent past, it remains unclear whether the two are related hence the question: What is the effect of diaspora remittances on economic growth in Kenya?

1.3 Research Objective

The objective of this study is to establish the effect of Diaspora remittances on the economic growth in Kenya.

1.4 Value of the study

The finance sector will be able to mobilise funds and allocate the same to productive sectors of the economy through innovative products such as mobile money transfers services, local bank transfer services, swift transfers and bulk payments, that would ease funds transfer process and reduce remittance cost through use of technology and internet banking. This study will thus inform finance practice. Diaspora will enjoy seamless, safe and secure remittance processes.

This study will also inform policy by recommending strategies of engaging the population in the diaspora. Government of Kenya will formulate policies that suit the diaspora needs. Tax reliefs and exemptions to entice investments in the home country would encourage investors abroad to repatriate their money back into Kenyan economy for investment. Know Your Customer (KYC) requirements will make relationship with diaspora population strong and beneficial to the country's economy. Policies to safeguard property of immigrants living away from home in their absence and legislation will be enacted to protect such property.

Given the magnitude and rapid growth of diaspora remittances, motives for sending money back into home countries can be of interest to Finance scholars. They can study further to understand why immigrants would want to develop their home economies at the expense of their settlement countries. It can put to perspective effect of these remittances to the economy both of their native countries as well as their host economies. Financial Institutions, both international and micro, policy makers, money transfer service providers, commercial banks and international lenders have developed intense interest in diaspora remittances. This study therefore will greatly benefit

development of the theory of finance. Chapter two will review theoretical and conceptual framework of remittances and economic development.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter gives a brief summary of literature on remittances and economic growth. It looks at the theoretical as well as the conceptual framework of economic development. Section 2 discusses theoretical framework that guides and informs this topic, Section 3 discusses the empirical studies done by other researchers on the topic with cases around the world, in Africa and in Kenya, section 4 discusses conceptual framework and section 5 summarizes and concludes the chapter.

2.2 Theoretical framework

Research studies done have come up with conflicting conclusions on whether remittances positively or negatively affect economic growth of poor countries. There are scholars who are of the opinion that remittances contribute to poverty eradication (Beaton et al, 2017), avails income that can provide capital for investment and to finance households as well as savings (Adeyi,2015: Wolde-Mariam & Yiheyis, 2015) and increase disposable income at national level thus drive economic growth at the macro level (Sibindi, 2014).

Those with contradictory opinion believe that households can become dependent on remittances which discourages working to earn a living. Heavy financial inflows through remittances can lead to inflation and high foreign exchange rates (Terrazas, 2011). Three theories that have attempted to explain remittances and economic growth include the Harrod – Domar Savings Ratio and Investment model, the Human Capital theory and the New Economic Growth Theories (Endogenous growth).

2.2.1 Harrod-Domar model

Harrod (1939) and Domar (1946) growth model perceives savings and investment as a major factor in economic growth. It explains an economy's growth rate in terms of levels of savings and productivity of capital. Savings provide funds necessary to finance investment which creates economic growth depending on how efficient the investment is. There is a positive relationship between savings and economic growth. Economic growth depends on the quantity of labour and capital. More investment leads to capital accumulation, which generates economic growth.

Remittances increases disposable income for receiving individual which leads to increased savings and increased investment too. It enables the recipient to consume, invest in real estate and stock market and have some extra to save. When people are not able to consume because of too high savings, the economic growth rate declines. Remittances avails start-up capital for entrepreneurs who accumulate capital through savings for investment thereby growing the economy.

2.2.2 Human Capital Theory

It builds on the work of Adam Smith's (1776) work. Becker, (1964) and Bowles, (1975) focused mainly on people as drivers of economic growth. Human capital theory emphasizes demographic of the society as vital in decision making (Bauer and Zimmerman, 1999) Borjas, (1990) concluded that a migrant will migrate only when his net return after discounting are positive within a given time span. He assesses cost and benefit associated with his migration to the various destinations before making decision to move. He eventually moves to the destination with the greatest positive net discounted returns. Costs are both monetary and psychological like being separated from one's family. Personal attributes such as education level, skills, marital status, age,

work experience increases one's chances of employment in the foreign country as well as possibility of higher remuneration.

Migrants are motivated to work compared to locals in the foreign country and are positively selected. They can be adversely selected when job experience and education levels are considered, Chiswick (1978). The home country experiences brain drain as the skilled and educated elites leave for foreign engagements in search of career progress and higher income. The developed economies gain high skilled labor thus accumulates human capital whereas home country loses due to brain drain.

2.2.3 Endogenous growth Theory

Paul Romer (1987) and Robert Lucas (1988) emphasized on human capital, technological improvement and openness of the market. Engaging skilled workforce who are knowledgeable, educated and well trained help accelerate advancement in technology. Capital should be productively invested. Romer and Lucas argued that a competitive market will have spill over benefits from knowledge-based economies and so in a free market, there's no motivation to invest in new technology.

Schumpeter, (1954) had the opinion that keeping economies open to forces of change by reducing regulations and subsidies will free the market. He believed in allowing inefficient firms to fail so as to allow resources to flow to more efficient firms. This would encourage economies to grow. Competitive open markets allow the economy to grow. Technological improvement increases productivity in the economy as efficiency and effectiveness of production is greatly improved.

2.3 Determinants of Economic Growth

Factors that affect economic growth include technology, infrastructure, human capital, natural resources among others. They are factors of production that affect the amount

of goods and services produced by an economy in a given period of time. These factors affect productivity, quality of products produced, efficiency and effectiveness of production as well as economies of scale of production.

Improved technology increases productivity with the same levels of labour. Technology encompasses procedures and methods engaged in production of goods and services. It reduces cost of production and leads to sustained long-run economic growth. Schumpeter (1954) believed that only efficient firms would succeed in a free and competitive market and inefficient firms would die and allow resources to be taken up by efficient firms. He emphasized technological innovation for sustained economic growth.

Natural resources occur in their natural form and include fuels, metals, wildlife, water sources among others. Accumulating gold and increasing exports can grow a country's economy (Theory of Mercantilism, 1500s). A country with high quality and large reserves of natural resources can have an increase in economic growth if efficiently exploited. Mining of minerals is a production activity that earns a country foreign exchange and also provides employment opportunities for its workforce. Tourists visit countries with wildlife and this is a source of foreign exchange leading to economic growth.

Infrastructure is the transport and communication network, water and sewerage system, electricity connectivity in a country that enables efficient production and movement of goods and services. It entails heavy financial investments which makes it costly but a vital necessity for any country if its economy is to grow. Capital investment in transport network enables products to reach the market in the shortest time possible thereby

reducing wastages through perish-ability and physical damage. Capital formation is the acquisition of valuables and fixed assets of the economy.

Human capital includes skilled and unskilled workforce. Skilled workers produce high value goods and services whereas more workers produce more goods and services. Adam Smith (1776) emphasized economies of scale and specialization. Endogenous Growth Theory (Romer and Lucas, 1987) argued that highly skilled workers, well trained and educated help accelerate advancement in technology thereby increasing economic growth.

2.4 Empirical studies

Researchers have carried out studies to establish the effect of remittances on growth of the economy and many have shown that countries with high cash inflows in terms of remittances recorded impressive growth in its economy.

Chami, Fullenkamp & Jahjah, (2005) looked at remittances as family income with no profit motive but a means of financially supporting a family and as such should have no impact on the country's GDP implying negative correlation between remittances and GDP growth. Their finding after using panel data in their model contrasted the positively correlated capital that is profit driven and GDP growth. Generally, policy makers and literature on remittances assume that remittances impact economic growth in the same way as FDI and other cash inflows. Chami et al concluded that it may not be the intention of remittances to serve as capital for economic growth.

Adeyi (2015) researched on remittances in Nigeria and Sri Lanka and how it impacted economic growth. He acknowledged that remittance payments/inflows from migrants' workers was increasingly becoming significant contributor of capital in the world in general and in developing countries in particular. The bone of contention was whether

or not remittances created avenue or leads to improvement in the economy. He then sought to establish whether remittances cause economic growth. He chose one country each from Africa and Asia continents, Nigeria and Sri Lanka. The study employed Granger-Causality using annual time series data from 1985 to 2014 regressed under VAR. The results revealed that there was a uni-directional relationship in Nigeria where remittances caused the economy to grow but economic growth did not cause remittance inflow to increase, whereas in Sri Lanka, a dual-directional relationship was found. Remittances influenced increase in economic growth and increased economic growth led to increased remittances inflow. Since the influence of the remittance on growth depends on the sustainability of the inflows and appropriate channelling structure, the study concluded by recommending the need to leverage remittances for small and medium enterprise development and microfinance as well as creating enabling macroeconomic environment.

A group of researchers, Beatonet al., (2017) were interested in finding out whether migration and remittances were engines of growth and macroeconomic stabilizers. They carried out their study in Latin America and the Caribbean (LAC). They examined migrants from LAC and how they remitted money back home. They also looked into costs and benefits of their migration. Their findings were emigration negatively impacted the labour market and productivity in the Caribbean outweighing benefits from remittances back home. In Central America, remittances provided finance for smooth consumption and stabilized the financial sector by providing revenue and alleviating poverty and inequality. There was no strong evidence of unhealthy competitiveness caused by movement in exchange rates.

Yasser et al., (2012) did a research paper wondering if remittances were a curse as their finding was that when remittances were high in relation to the GDP, corruption got out

of control, government became ineffective and rule of law disregarded. 111 countries were evaluated in a cross section study. Their model showed how increase in remittances eroded quality of institutions in the recipient country. Government would divert funds for its own use. To them, remittances did not grow the economy.

Wolde-Mariam & Yiheyis (2015) carried out a study on the remittances and its association with accumulation of capital in African countries. The expectation is that remittances should induce savings and ease financial burden on households thereby promote investment. Using bound testing approach to co-integration analysis, they sampled four African countries to investigate the short-run and long-run effect of remittances on investment. Their findings were that relationship between remittances and economic growth depends on other factors as results varied from country to country. It was not clear whether capital formation was as a result of remittances.

Efobi et al, (2016) did a research paper where they assessed relationship between remittances and industrialization. They sampled 49 African countries between 1980 and 2014. They assessed direct as well as indirect effects through financial development channels. Three estimation techniques applied were Instrumental Fixed Effects (FE), GMM and Instrumental QR. Their findings were that in the initially stages remittances could enhance industrialization through financial development mechanism.

Sibindi, (2014) was interested in Lesotho. He studied financial development, growth in the economy and remittances. He appreciated remittances provide foreign exchange, savings and liquidity. He sampled the period 1975 to 2010 to research on the association between growth in the economy, financial development and remittances in Lesotho measured by real per capita GDP, real per capita broad money supply a real per capita remittance respectively. Johansen procedure and Granger causality based on VECM

were employed to test for co-integration among variables. His findings suggested causal relationship between growth in economy and financial development as well as remittances. Remittances complement development in the financial sector and enhances growth in the economy in turn.

Kiio et al (2015) studied association between workers' remittances and growth in the Kenyan economy. They noted an increase in remittances inflows. They carried out a study relying purely on secondary annual time series data sampled between 1970 to 2010. They employed explanatory design. They analysed the data using Time series Regression. This was seasoned using OLS method. Their finding was strong positive correlation between remittances and economic growth. Higher remittances led to higher GDP. Higher remittances also impacted positively on capital formation. By bringing down transaction cost, government could reap maximum benefit from remittances.

Njoroge, (2015) desired to establish how diaspora remittances impacted stock market performance on the Nairobi Securities Exchange(NSE) given that it is the major channel through which surplus in the economy is allocated into medium and long term projects in the deficit sectors of the economy. He felt that relationship between Diaspora remittances and stock market performance had been highly neglected by scholars with minimal empirical evidence available. He used secondary data from the CBK and the NSE. Stock market performance was measured by Nairobi Securities Exchange All Share Price Index (NASI). Inflation, interest rates and exchange rates were used as control variables. Descriptive analysis design was applied by the study and data analysed on monthly basis. His finding was that Diaspora remittance had strong and significant positive effect on stock market performance whereas inflation, lending interest rates and exchange rates had significant negative effect on stock market

performance. Increase in diaspora remittance would significantly improve the performance of stock market.

Ombaba & Muriuki (2018) empirically analysed remittances and how it relates to financial development with keen interest in Kenya's economy, specifically on domestic credit and money supply. They used exploratory design, employed regression, both panel and pooled. Their sample size was 40 quarters for the period of 2007-2016. Their finding was that remittances is positively and significantly related with domestic credit ($\beta = 1.342$; $p < 0.05$) as well to money supply in Kenya in the period of study ($\beta = 1.174$; $p < 0.01$).

Aboulezz, (2014) a researcher from Cairo carried out a research whose objective was to determine how international remittances impacted Kenya's economy. He was interested in establishing whether remittances caused growth in Kenya's economy. He used secondary data from the World Bank report for the period 1993 to 2014. Granger Causality and ARDL were employed for causality and estimation respectively. His conclusion was that international remittances caused economic growth in Kenya.

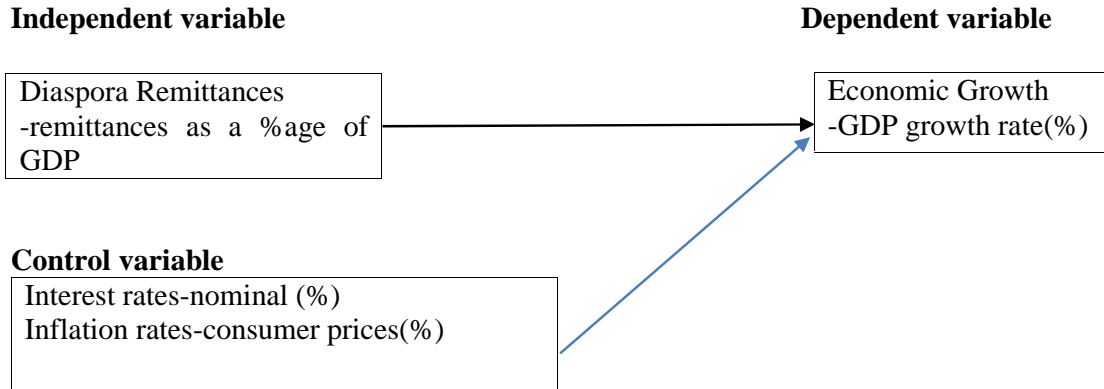
Ocharo (2014) analysed data between 1970 and 2010 seeking to understand the connection between remittances and growth in the economy of Kenya. He used secondary data from various Economic Surveys and the World Bank reports together with OLS estimation method. He found a significant positive coefficient of remittances to GDP implying that remittances positively related with economic growth.

2.5 Conceptual Framework

It is expected that diaspora remittances will influence economic growth. Growth of remittances is expected to determine the direction that economic growth will assume

whether positively or negatively. This study is based on the conceptual frameworks as illustrated in figure 2.1 below.

Figure 2.1 Conceptual Framework



2.6 Summary of Literature Review

Chapter two delved into theoretical framework and empirical evidence on remittances and economic growth. The theories identified look at the human aspect of economic development. Emigrants remit funds back into their home economies and this has been found to be a vital source of external funding. Researchers need to further look into sustainability and reliability of remittances as an external funding.

From the literature reviewed in this chapter, consensus on how remittances impact the economy is not reached. Recent studies confirm significant positive association between remittances and growth in the economy. (Aboulizz, 2014; Kiiro, 2015; Sibindi, 2014). Njoroge, (2015) and Terrazas, (2011) argues that other macroeconomic factors come to play and have to be factored in. Adeyi (2015) contends that remittances and economic growth affect each other in both directions and economic growth triggers remittances into an economy as was the case in Sri Lanka. Researchers should find clarity on whether remittances enhance economic growth or economic growth pulls remittances into the economy.

The literature reviewed therefore has not answered the research question on the effect of remittances on economic growth of home country conclusively. Some scholars support remittances with reasons that it enables capital accumulation and human capital investment whereas others feel remittances leads to brain drain, dependency and inflation in an economy, Beatonet al., (2017), yet there are those who are indifferent that remittances have no effect on the economy (Chami et al.,2005). Further empirical studies need to be carried out to establish how remittances and economic growth impact each other if at all they do.

Remittances are private transfers between family members and individuals. Some of these transactions take place in informal settings and government has no formal record of such transactions. Due to the magnitude of remittances, their role should be critically examination. Quality and coverage of data should be enhanced and protected. With large stable remittance flows, strengthening macroeconomic policies could promote economic growth through broad-based taxation of consumption. Chapter three will highlight research methodology to be employed in this research.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that will be used in the study. It gives some background information on the research design, population and sample size, data collection method and data analysis to be carried out.

3.2 Research Design

This is an exploratory study as it tries to discover relationship between remittances and economic growth. This study will attempt to describe what happens to economic growth as diaspora remittances vary. Being a statistical study, the results obtained from the sample period will generally infer what happens to the economy when remittances vary. Data will be analysed on quarterly basis thus; a cross-sectional study will be used.

I will employ quantitative research method because volume of remittances is measured in US dollars received as a percentage of Real GDP whereas the economic growth will be measured in Real GDP growth rate. Remittances will form the independent variable whereas GDP growth rate will be the dependent variable. I will use secondary data to be obtained from Central Bank of Kenya website and the World Bank statistics which is quantitative in nature.

3.3 Population

The study will focus on the Kenyan Economy. Remittances received into Kenyan economy will be regressed against Kenya's GDP growth rate. Data on Kenya's economic growth is available on Kenya National Bureau of Statistics website as well as World Bank's development indicators and the Central Bank of Kenya websites.

3.5 Data Collection

The sample of the study will constitute 10-year period between January 2008 and December 2017-time series data analysed quarterly making a sample size of 40. A 10-year sample period was selected due to availability of data. The secondary data will be obtained from the World Bank's development indicators, the Kenya National Bureau of Statistics and the Central Bank of Kenya website.

The Central Bank of Kenya surveys on remittance inflows every month through formal channels that include commercial banks and other authorised international remittances service providers in Kenya and will be analysed on quarterly basis. Data for GDP growth rate will be accessed from the KNBS website.

3.6 Data Analysis

The study will investigate the effect of diaspora remittances on economic growth using Ordinary Least Squares(OLS). Time series data will be sourced from the World Bank's development indicators, the Kenya National Bureau of Statistics and the Central Bank of Kenya for the period 2008 to 2017. Time series modelling and analysis will give an indication of possible relationship between remittances and economic growth given that data points taken over time may have an internal structure such as autocorrelation, trend or seasonal variation.

Time series data will assist in establishing whether there exists any statistical association or co variation between remittances and economic growth. It will help obtain an understanding of the underlying forces and structure that produce the observed data. It will also enable to fit a model and proceed to forecasting, monitoring or even feedback and feed-forward control. This data will be analysed using Statistical

Package for Social Sciences (SPSS). Regression analysis will be carried out to estimate the relationships between diaspora remittances and economic growth.

3.6.1 Analytical Method

ARDL method will be employed in specifying the OLS model which is in the form

$$y = b_0 + b_1 \text{rem} + b_2 \text{int} + b_3 \text{inf} + e$$

Where y: depicts the dependent variable, Economic Growth, measured by GDP growth rate.

rem: is the independent variable, diaspora remittances, measured by remittances as a percentage of GDP.

int, inf: are the control variables depicting interest rates and inflation rates respectively.

e: is the error term, the regression residual which will address the various forms of bias that may occur in the research aiming to evaluate the accuracy of diagnostic tests

b₀: is the constant.

b₁, b₂, b₃: are regression coefficients which determine the contribution of the independent variables.

3.6.2 Diagnostic Test

This study will employ simple linear regression whose assumptions are:

1. Linearity - Y-variable, Economic growth values, can be expressed as a linear function of the X-variable, diaspora remittances.
2. Normal distribution of errors
3. Homoscedasticity - there is constant variations of errors (residuals) around the regression line.
4. Independence of observations - Each observation is independent of each other.

If these assumptions are true, then the observed residuals should behave in similar fashion. There will be constant variance for all observations and the sum of errors will be zero.

Using SPSS, the study will come up with residuals plots, fit line of regression and check for validity of the above assumptions before applying the regression model. To use the regression model, the above assumptions should hold.

3.6.3 Test of Significance

Using SPSS, the study will compute p-values at the various levels of significance to establish whether there exists a significant relationship between remittances and economic growth in Kenya. Pearson correlation (r) will indicate whether the relationship is positive or negative.

The Hypotheses for this study are:

Ho: There is no relationship between diaspora remittances and economic growth in Kenya.

Ha: There is a relationship between diaspora remittances and economic growth in Kenya.

P-value will be compared to the α -value (Level of significance) and if calculated P-value is less than or equal to α -value, the test is significant, meaning, there is a significant relationship between remittances and economic growth and thus, reject the null hypothesis.

If calculated P-value is greater than α -value, the test is not significant, meaning, there is not a significant relationship between remittances and economic growth and so fail to reject the null hypothesis.

CHAPTER FOUR

DATA ANALYSIS, EMPIRICAL RESULTS AND INTERPRETATION

4.1 Introduction

This chapter describes the analysis of data and its results followed by the discussion of the research findings. A quantitative study whose purpose was to explore the effect of remittances on economic growth in Kenya was carried out with an objective to establish the effect of Diaspora remittances on the economic growth in Kenya. The study focussed on Kenyan economy for a period of 10 years. National statistics on diaspora remittances to Kenya as obtained from World Bank development indicators website and the GDP growth rate of Kenya was employed to explore if there exists any relationship between remittances and economic growth and to answer the research question, “what is the effect of diaspora remittances on economic growth in Kenya?”

4.2 Methods of data analysis and presentation of data

An exploratory study was undertaken to establish existence of relationship between remittances and economic growth, to describe what happens to economic growth as diaspora remittances vary. Being a statistical study, the results obtained from the sample period is expected to generally infer what happens to the economy when remittances vary. Data was analysed to identify, describe and explore the relationship between diaspora remittances and economic growth in Kenya.

4.2.1 Data collection

Secondary, quantitative, time series data was obtained from the Central Bank of Kenya website, the Kenya National Bureau of Statistics and the World Bank Economic indicators for the period of study 2008 to 2017 and analysed quarterly giving a sample size of 40, a cross-sectional study was employed. (See Appendix 1: Raw data on GDP growth rate, Remittances, Interest rates and Inflation rates).

Remittances, interest rates and inflation rates formed the independent variables whereas GDP growth rate the dependent variable. Remittances received into Kenyan economy as a percentage of GDP were regressed against Kenya's GDP growth rate over 10-year period. CBK and the KNBS are government agencies which collect data for their personal use and the data is publicly available on their website for use by interested parties. World Bank is an International organisation which mines data from all over the world for their personal use and is available on their website. Given that these institutions are government and international institutions respectively, data obtained from their website is fairly accurate and reliable. Data validity is assured. Data is readily available, relatively cheap to access and less time consuming. Most recent 10-year period sample was selected because earlier studies were undertaken for earlier periods and results from current period study can be compared to earlier studies to see if they are consistent.

4.2.2 Data analysis

The study was to investigate the effect of diaspora remittances on economic growth using Ordinary Least Squares(OLS). Time series data assisted in establishing whether there exists any statistical association or co variation between remittances and economic growth. Data captured on excel spreadsheet was imported into SPSS as input for data

analysis process to achieve the study objectives. Data verification was undertaken to ensure the imported data was complete, accurate and without missing entries.

Four variables were used in this study. GDP growth rate was the outcome variable while remittances as a percentage of GDP the predictor variable after controlling for interest rates and inflation rates which formed the control variables. GDP growth rate is the rate at which Gross Domestic Product changes from one year to another. It is measured in percentage. Remittances as used in this study is the personal transfers and compensation of employees remitted into Kenya's economy as a percentage of GDP. Lending interest rates and inflation rates were used as control variables. All the four variables were continuous variables. The descriptive statistics was as in the table 4.1 below:

Table 4.1: Descriptive statistics for all variables in the study

	Mean	Std Deviation	Variance	Minimum	Maximum	Count
<i>GDP growth rate</i>	1.28	0.47	0.22	0.33	2.369	40
<i>Remittances</i>	0.56	0.10	0.01	0.38	0.87	40
<i>Interest rates</i>	15.81	1.95	3.82	13.65	20.21	40
<i>Inflation rates</i>	8.67	4.61	21.23	3.33	19.19	40

The average GDP growth rate was 1.28 (SD 0.47) and Remittances 0.56(SD 0.10).

Interest rates averaged 15.81 (SD 1.95) while inflation stood at 8.67 (SD 4.61) during the period of study.

4.2.2.1 Diagnostic tests

Parametric statistical tests such as Analysis of variance (ANOVA test), Linear regression, Pearson correlation, f-test, t-test among others require that the population of study be approximately normally distributed for each category of the independent

variables. Other conditions such as linearity, homoscedasticity, multi-collinearity and correlation must be satisfied for a given set of data to be used in regression analysis. Tests have to be performed on the data to assure that the data is fit for linear regression procedure.

4.2.2.1.1 Normality

Normality check on the data sampled within the 10- year sample period selected will help assure that the population is normally distributed and results from the sample can be used to infer on the population. Normal plots and frequency histogram were used to check for normality and the results were that the sampled data was normally distributed implying that the population is normally distributed. (See Appendix 2: Histograms)

Visual inspection of the histogram shows bars approximately take the shape of a normal distribution curve .From the observed bell-shape of the normal curve, all variables are symmetrically distributed for GDP growth rate with a skewness -0.30(SE 0.37), Remittances 0.34 (SE 0.37), Interest rates 0.71 (SE0.37) and inflation rates 1.12 (SE 0.37) and kurtosis of 0.32 (SE 0.73) for GDP growth rate, 0.79 (SE 0.73) for Remittances , -0.45 (SE 0.73) for interest rates and 0.10 (SE 0.73) for inflation rates (See Table 3 below). We can therefore assume that the dependent variable is approximately normally distributed for each of the independent variable under study.

Table 4.2: Descriptive statistics for the Normal distribution curves

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
GDP growth rate	40	-.30	.37	.32	.73
Remittances	40	.34	.37	.79	.73
Interest rates	40	.71	.37	-.45	.73
Inflation rates	40	1.12	.37	.10	.73
Valid N (listwise)	40				

4.2.2.1.2 Correlation Analysis

Correlation analysis was used in this study to determine the nature of relationship between variables. Correlation coefficient determines the strength of a linear association between two variables and is denoted by R which can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. A value greater than 0 indicates a positive association, meaning, as one variable increases the other variable increases too and a value less than 0 indicates a negative association, where, as the value of one variable increases the value of the other variable decreases.

The correlation analysis report from the data in this study is as below:

Table 4.3: Correlation statistics for variables under study

	<i>GDP growth rate</i>	<i>Remittances</i>	<i>Interest rates</i>	<i>Inflation rates</i>
<i>GDP growth rate</i>	1			
<i>Remittances</i>	0.206	1		
<i>Interest rates</i>	0.121	0.208	1	
<i>Inflation rates</i>	-0.526	-0.137	-0.073	1

From the table, the results of Pearson correlation analysis revealed that there was a positive correlation between diaspora remittances and GDP growth after controlling for interest rates and inflation rates, GDP growth rate and interest rates but negative relationship between GDP growth and inflation rates. This implies increasing diaspora remittances and interest rates increases economic growth but when inflation rates increase, GDP growth rate decreases. This finding contradicts Chami et al (2005) who found no effect of remittances on the economic growth.

4.2.2.1.3 Multi-collinearity

Multi-collinearity implies high correlation between or among two or more independent variables in a multiple regression model meaning one can be linearly predicted from the other with a substantial degree of accuracy. It helps assess effect of independent variables used in a linear regression on each other. Data was input into SPSS and from the output below, the model does not have collinearity problems. Tolerance values and Variance Inflation Factors (VIF) are measures for collinearity. High VIF values indicate high collinearity and the general rule is that, VIF factors of 10 and above coupled with high significance values should be excluded from a model in order to reduce collinearity problems unless the variable is critical in the regression model, (Myers,1990). The average VIF according to Myers should not be substantially greater than 1.0. Tolerances should be greater than 0.2 (Menard, 1995). Tolerances of below 0.2 are indicators of potential collinearity problems.

In this study, all tolerance values are greater than 0.2 implying there are no collinearity issues. Tolerances are reciprocals of VIF values. For this study, Remittances had the highest average VIF of 1.065 which is less than 10 and not substantially greater than 1.0. The assumption therefore was that model does not have collinearity problems among independent variables.

Table 4.4: Tolerance and Variance Inflation Factor (VIF) summary

Dependent Variable: GDP growth rate

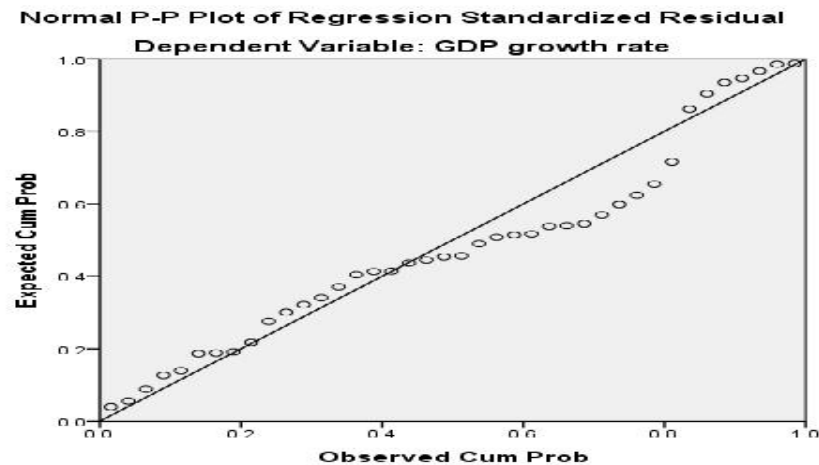
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Remittances	.939	1.065
	Interest rates	.952	1.050
	Inflation rates	.979	1.022

4.2.2.1.4 Linearity

Linear regression model requires that variables sampled from the population should relate in a linear way. SPSS uses scatter plot testing methods to test for linearity. Residual analysis was carried out to validate assumptions of linear regression. Residuals were plotted on a graph and regression line fitted. Variations of observations around the regression line were observed and no outliers were identified.

From the scatter plot, this assumption has been met and the data is therefore fit for linear regression implying that diaspora remittances, interest rates and inflation rates are linearly related to GDP growth rate and relationship can be established through linear regression. (See figure 4.5 below)

Figure 4.5: Normal P-P Plot of Regression Standardized Residuals

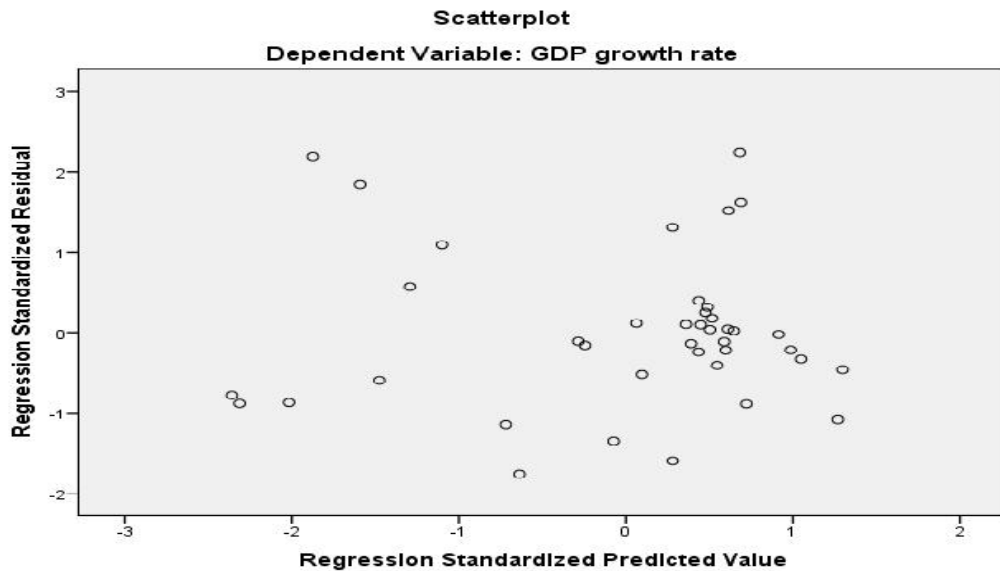


4.2.2.1.5 Homoscedasticity

Homoscedasticity is where variance around the regression line is the same for all values of the predictor/independent variables. Scatter plot between residuals and predicted or

independent variables is used to check the homoscedasticity assumption. No obvious pattern is observed as variables were randomly selected.

Figure 4.6: Scatter plot for standardized residuals



4.2.2.2 Regression Analysis

Multiple regression analysis was employed to determine the effect of Diaspora remittance on economic growth in Kenya. Interest rates and inflation rates were used as control variables. As shown in table 4.8 below, there is a strong positive relationship between independent (Diaspora remittance, interest rates and inflation) and dependent variable (Economic growth) with a coefficient of correlation of 0.546. According to Pearson, a rank (r) of 0.4 and above connotes strong association, 0.2 - 0.4 is moderate while 0.2 and below is weak association. 29.90 % of variations in economic growth, as obtained by R-square, were explained by variations in the diaspora remittances, interest rates and inflation rates. This is an indication that the model was effective in predicting relationship between remittances and economic growth. Pearson correlation (R) indicates a strong positive relationship ($R=0.546$) between diaspora remittances and economic growth.

Table 4.8: Summary of the regression model

<i>Regression Statistics</i>	
Multiple R	0.546
R Square	0.298
Adjusted R Square	0.240
Standard Error	0.406
Observations	40

Model Analysis of Variances

The Hypotheses for this study were:

Ho: There is no relationship between diaspora remittances and economic growth in Kenya.

Ha: There is a relationship between diaspora remittances and economic growth in Kenya.

The null hypothesis implies that all coefficients on the independent variables are zero and none of the independent variables helped predict the dependent variable deeming the model useless. This would be true if the calculated p-value (significance value) is greater than 0.05. In this study, the level of significant is 0.005 which is less than P-value of 0.05 ($p=0.005$, $p<0.05$) and so we reject the null hypothesis (see table 4.9: ANOVA below).

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Sig. F</i>
Regression	3	2.528	0.843	5.106	0.005
Residual	36	5.941	0.165		
Total	39	8.468			

Table 4.9: ANOVA table

By rejecting the null hypothesis, the study confirms that there exists a linear relationship between diaspora remittances and economic growth in Kenya.

Interpretation of the Findings

From the table 5.0 below, the following regression model for predictions was established:

$$\text{Economic Growth Rate} = 1.181 + 0.565 \text{ Rem} + 0.014 \text{ Int} - 0.051 \text{ Infl}$$

The regression coefficient shows that diaspora remittance positively impacts on economic growth in Kenya. A unit increase in diaspora remittance will lead to 0.565% increase in economic growth. At 5% level of significance, all variables are not statistically significant except for inflation rates with $p = .001$. A unit change in interest rates causes economic growth to increase by 0.014% although this is not significant at 95% confidence level. ($p=0.68$, $p<0.05$). Inflation rate negatively impacts on economic growth and one-unit increase in inflation rate will result to 0.05% decreases in economic growth in Kenya. This has a significant negative effect on the economy ($p=.001$, $p<0.05$).

Table 5.0: Coefficients of Variables

	<i>Coefficients</i>	<i>Std. Error</i>	<i>t. Stat</i>	<i>P-value</i>
Intercept	1.181	0.618	1.912	0.064
Remittances	0.565	0.650	0.870	0.390
Interest rates	0.014	0.034	0.409	0.685
Inflation rates	-0.051	0.014	-3.578	0.001

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

This chapter presents the summary of findings, conclusion, recommendations and suggestions for further research derived from the findings together with limitations encountered with suggestions for further research.

5.2 Summary of the Findings

Statistical analysis in chapter four above provided various results which can be summarized in terms of descriptive statistics and inferential statistics. On the average economic growth had a mean of 1.28% with standard deviation of 0.47% with maximum and minimum values of 2.36% and 0.33% respectively. Average Diaspora Remittances received registered a mean of 0.56% with a standard deviation of 0.10%. Interest rates had a mean of 15.81% between 2008 and 2010 with a standard deviation of 1.95%. Inflation recorded a mean of 8.67% with standard deviation of 4.61%.

The study established R-square of 0.299 which illustrated that 29.90 % of the total variation in economic growth was attributed to changes in independent variables (Diaspora remittances, interest rates and inflation rates). Other factors held constant, the average GDP growth rate was established to be 1.28. The regression coefficient showed that diaspora remittance positively impacts on the economic growth in Kenya. A unit increase in diaspora remittance will lead to an increase of 0.56% in GDP growth rate. At 5% level of significance, diaspora remittance was found to be not statistically significant in affecting economic growth in Kenya ($p=.39$, $p<.05$). Interest rates positively impacts on economic growth and 1% increase in interest rate will result to

0.014% increase in GDP growth rate in Kenya. The effect is not significant at 5% level of significance ($p=0.685$, $p<0.05$), Inflation rates negative effect on GDP growth rate in Kenya ($p=.001$, $p<0.05$) and 1% increase in inflation rate will lead to 0.051% decrease in GDP growth rate.

The results of this study that diaspora remittances positively affect growth differ from studies by Yasser et al., (2012), who found a negative and statistically significant relationship between remittances and economic growth but collaborates findings by Ocharo (2014) who found that international remittances inflows had a positive impact on economic growth. Findings by Aboulez, (2014) also revealed that the diaspora remittances significantly influenced the economic growth in Kenya.

5.3 Conclusions

The regression coefficient findings show that diaspora remittance positively impacts on the economic growth in Kenya and the study concludes that at 5%,10% or 1% level of significance, diaspora remittance is not statistically significant in affecting economic growth in Kenya. Interest rates positively impacts on economic growth and the effect is not statistically significant at 95% ,90% nor 99% confidence levels. Inflation rate has a negative effect on economic growth in Kenya and the effect is statistically significant at 1%,5% and 10% significance level.

5.4 Policy Recommendations

The government of Kenya should formulate strategies and policies that engage the population in the diaspora depending on their needs. Tax reliefs and exemptions (incentives) to entice investments in the home country would encourage investors abroad to repatriate their money back into Kenyan economy for investment. Know Your Customer (KYC) requirements will make relationship with diaspora population strong

and beneficial to the country's economy because the country will be able to establish formal records of the population in the diaspora and tap into remittances that get into the country through informal channels. Financial sector should be further developed to make formal transfer less cumbersome and cheaper through use of modern technology like mobile money transfers between states. Policies to safeguard property of immigrants living away from home should be put in place so that workers are able to develop confidence in the Kenyan economy knowing that even in their absence their property is protected and in case of violation the legal system should be able to amicably compensate or resolve the violation.

From the study, 29.90% of the GDP growth rate was explained by diaspora remittances. The magnitude of these remittances in the recent past is something that the Central Bank of Kenya is keen on as if left unregulated could encourage money laundering which could be detrimental to Kenya's economy by increasing inflation to unmanageable levels. This study recommends that the CBK and other regulatory authorities of macroeconomic variables should take keen interest and regulate remittances flow in such a way that they lead the economy towards the growth.

5.5 Limitations of the Study

Secondary data was employed in this study. Secondary data was obtained from the Central Bank of Kenya website, KNBS and the World Bank development indicators. Secondary data is prone to errors, obsolescence, dependability, accuracy credibility as well as validity issues. A ten-year period of study from 2008-2017 is not fully adequate to make conclusions about the effect of Diaspora remittances on economic growth as factors could have changed drastically over the period. A longer period sample could be more reliable.

Time taken for data collection was not adequate as interrogating the data was not exhaustive. With more time, more control variables would have been included in the study. Internet cost, printing costs, internet connection reliability was also a challenge. This made it costly to do this study and should be put into consideration. In future, before undertaking such a study the researchers should plan for the costs and time especially with the internet, technological advances should enable real time access to current information at high speed. Speed of data processing and iterations should also improve with technological advancement.

5.6 Suggestions for Further Research

Scholars in future should do a similar study with data for different periods to see if there's consistency in findings with this research. They could also look at effects of diaspora remittances on specific sectors of the economy like real estate, finance sector, agriculture sector, education sector among others as remittances are basically personal finance used by households to build shelter for the family, educate family members, buy land and engage in agricultural activities among others. The study will still be on economic growth but at specific levels.

Future researchers could also look at longer period like 40 years as opposed to 40 quarters as was the case in this study. With a larger sample period, findings can be compared to seek for consistency. More variables can be regressed against economic growth and measure of economic growth can be changed to GNI growth rate as opposed to GDP growth rate as use in this study.

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APPENDICES

Appendix 1: Raw data on GDP growth rate, Remittances, Interest rates and Inflation rates

period	GDP growth rate (%)	Remittances (% of GDP)	Interest rates (%)	Inflation rates (%)
2008-Q1	0.40	0.50	13.89	10.63
2008-Q2	0.41	0.50	13.99	17.53
2008-Q3	0.33	0.42	13.74	18.06
2008-Q4	0.36	0.44	14.44	18.70
2009-Q1	0.66	0.42	14.77	14.17
2009-Q2	0.63	0.40	14.88	10.21
2009-Q3	0.71	0.45	14.76	7.51
2009-Q4	0.70	0.44	14.80	5.65
2010-Q1	1.88	0.38	14.92	5.03
2010-Q2	2.05	0.42	14.48	3.68
2010-Q3	2.11	0.43	14.15	3.33
2010-Q4	2.36	0.48	13.89	3.84
2011-Q1	1.34	0.49	13.96	7.05
2011-Q2	1.44	0.52	13.90	13.16
2011-Q3	1.62	0.59	14.42	16.51
2011-Q4	1.69	0.62	17.92	19.19
2012-Q1	1.18	0.62	20.05	16.87
2012-Q2	1.16	0.61	20.21	11.78
2012-Q3	1.10	0.58	20.00	6.38
2012-Q4	1.16	0.61	18.32	3.53
2013-Q1	1.41	0.57	17.90	4.08

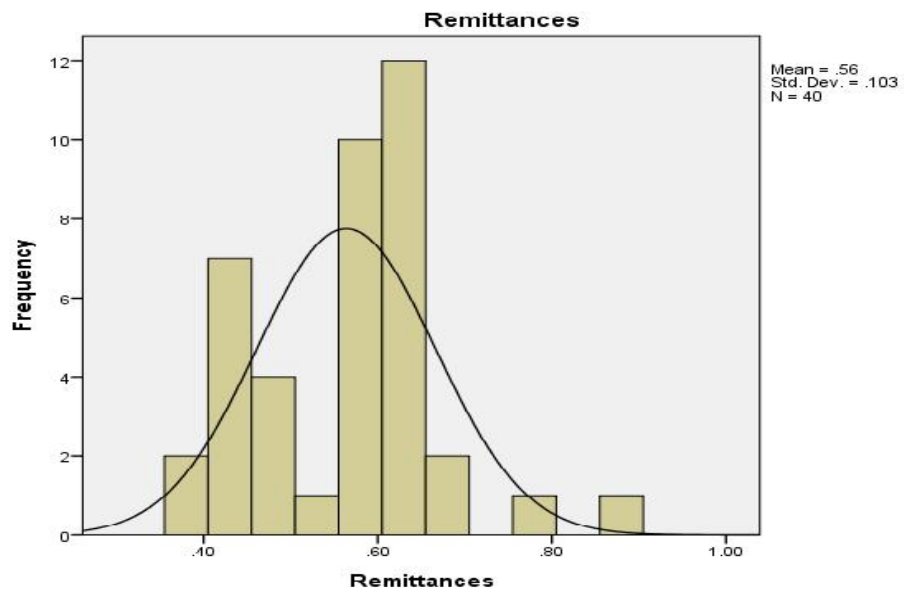
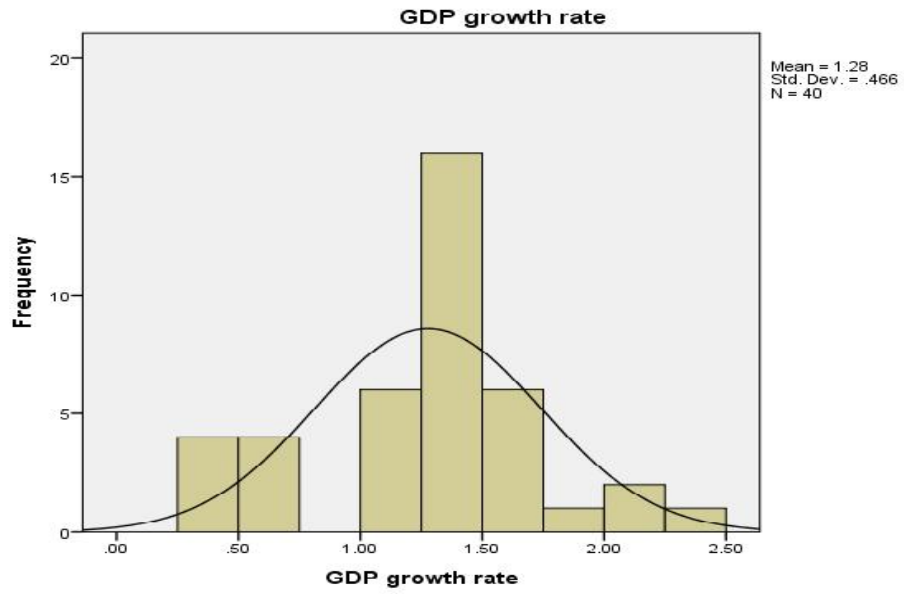
2013-Q2	1.44	0.58	17.43	4.37
2013-Q3	1.50	0.60	16.95	7.00
2013-Q4	1.55	0.62	16.96	7.42
2014-Q1	1.29	0.56	17.00	6.78
2014-Q2	1.32	0.57	16.68	7.03
2014-Q3	1.41	0.61	16.40	7.54
2014-Q4	1.38	0.60	15.98	6.18
2015-Q1	1.34	0.58	15.62	5.82
2015-Q2	1.43	0.62	15.57	6.99
2015-Q3	1.45	0.62	16.08	6.14
2015-Q4	1.48	0.64	17.35	7.35
2016-Q1	1.42	0.59	17.93	7.02
2016-Q2	1.50	0.62	18.15	5.36
2016-Q3	1.45	0.61	16.54	6.33
2016-Q4	1.53	0.64	13.69	6.50
2017-Q1	1.09	0.67	13.65	8.77
2017-Q2	1.15	0.70	13.66	10.80
2017-Q3	1.25	0.76	13.68	7.52
2017-Q4	1.42	0.87	13.68	4.98

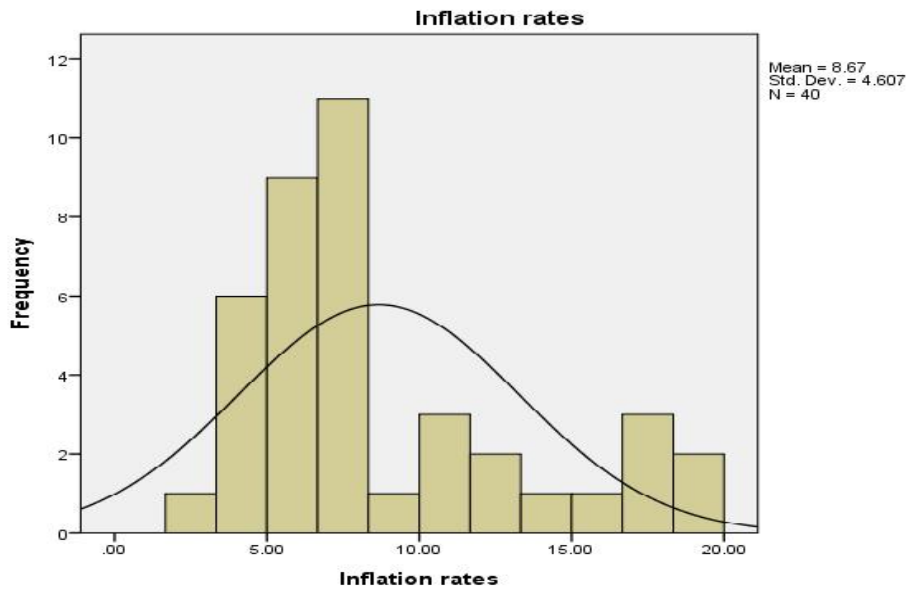
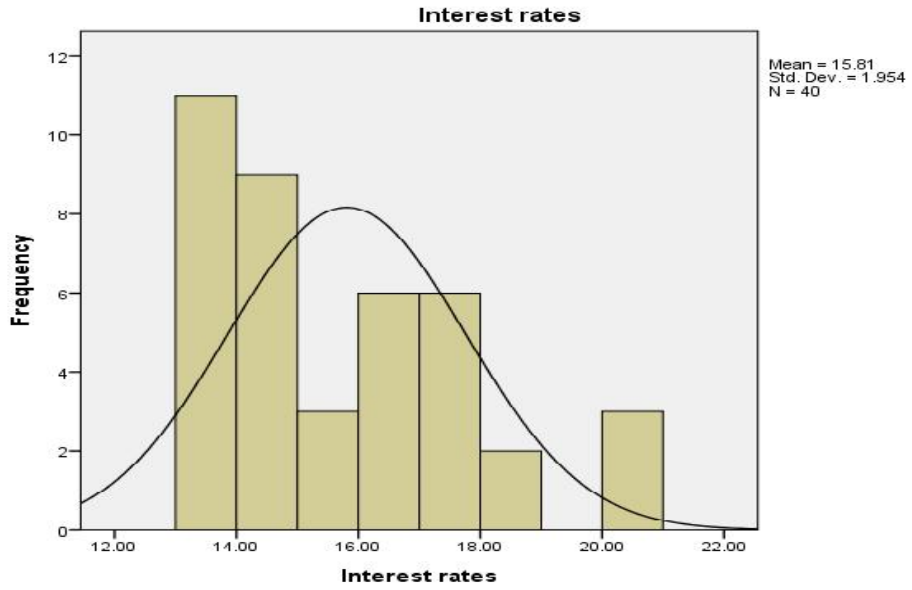
Source: GDP growth rate - KNBS website

Remittances as a percentage of GDP - World Bank economic indicators website

Interest rates and Inflation rates - CBK website

Appendix 2: Histograms





Source: own plots using SPSS