

**INFLUENCE OF DIASPORA REMITTANCES ON FINANCIAL DEVELOPMENT IN
KENYA**

BY

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DECLARATION

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

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The research project has been submitted for examination with my approval as Maseno University Supervisor.

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DEDICATION

This research project is dedicated to my wife Mrs. Concepter Sureri Mwita and my children Sharleen Gati Mwita and Maroa Sharneez Mwita for their humble time and continuous motivation while undertaking my studies. It is also dedicated to my father Mr. John Maroa and mother Mrs. Rael Ghati Maroa for establishing a good educational background for my career advancement and prosperity. Lastly, to my brothers and sisters I say thank you.

ABSTRACT

Diaspora remittances have remained substantial and have been seen to increase globally. The same have been seen to be an enabler for growth of most developing economies. In 2015 they were estimated to be more than \$601 billion and developing countries were estimated to have received \$441 billion nearly three times that of Official Development Assistant. In Kenya, remittances have maintained an average growth of \$100 million from January 2013. Therefore, the study sought to examine the influence of Diaspora remittances on financial development in Kenya with specific objectives being to determine influence of Diaspora remittances on credit to private sector, establish the influence of Diaspora remittances on access to financial services and examine the influence of Diaspora remittances on bank deposits. The study adopted purely secondary data through literature reviews while utilizing panel data for 2004-2015 as 2016 data was unavailable. In order to fulfill the above, a general linear model was adopted. The results extracted from the analysis revealed that Diaspora remittances do not have a significant influence on credit given to private sector, Diaspora remittances do not have a significant influence on access to financial services and Diaspora remittances have no significant influence on bank deposits. In conclusion therefore, the main finding of the study was that Diaspora remittances had no significant influence on financial development in Kenya and Diaspora remittances do not necessarily determine the direction financial development in Kenya takes in terms of credit extended to private sector, access to financial services and bank deposits thus prior values of Diaspora remittances may not be used to predict future values of financial development.

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LIST OF ABBREVIATIONS

ODA	Official Development Assistant
DR	Diaspora Remittances
FD	Financial Development
ARDL	Auto Regressive Distribution Lag
SGMM	System Generalized Method of Moments
MENA	Middle East and North America
GDP	Gross Domestic Product
IMF	International Monetary Fund
OLS	Ordinary Least Square
SIDS	Small Island Development States
CVI	Content Valid Index
OECD	Organization for Economic Co-operation and Development
SPSS	Statistical Package for Social Sciences
LAC	Latin American Countries
GMM	Generalized Method of Moments

OPERATIONAL DEFINITION OF TERMS

Diaspora Remittances: Are cross-border, private, voluntary monetary and non-monetary (social or in-kind) transfers made by migrants and Diaspora, individually or collectively, to people or communities not necessarily in their home country.

Financial Development : Refers to either the share of bank deposits or the ratio of banks credit to private sector as a percentage of GDP.

GDP : Represents total value of all goods and services produced in a country over a specific time period.

Financial Depth : Size and liquidity of markets

Credit to Private Sector: Ability to extend credit to private sector by financial corporations such as loans or other related products that establish a claim for repayment as is one of the best methods to gauge financial development of a country.

Access : Ability of both individual persons and corporate and or institutions to access financial products e.g. loans and loan related products.

Bank Deposits : Consists of money placed into financial institutions for safe keeping in savings accounts, current accounts and money market accounts.

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CHAPTER ONE

INTRODUCTION

The section highlights the background of the study and how the variables of; Diaspora remittances and financial development interrelate. Other aspects highlighted are statement of the problem, objectives of the study, research hypothesis, and justification of the study, scope and conceptual framework.

1.1 Background to the Study

The existing literature on the influence of Diaspora remittances on financial development has been given less attention as many researchers have shifted their focus to remittances and economic growth, remittances and poverty reduction, remittances and private sector investment. In Kenya, the influence of Diaspora remittances on financial development with key specifics on influence of remittances on credit to private sector, influence of remittances on access and influence of remittances on bank deposits are still aspects that have not been fully explored given that Kenyans in the Diaspora still face challenges of high remittances costs, lack of awareness on importance of remitting through formal channels and lack of information on existing investment opportunities through continuous learning. All these have contributed to some Kenyans resolving to use illegal means of remitting. This makes it hard to tell if indeed Diaspora remittances have a role to play on financial development in Kenya since financial development is seen to be one of the engines for economic growth. Globally, in 2015, remittances were estimated to be more than \$601 billion and developing countries are estimated to have received \$441 billion nearly three times the amount of ODA, (Migration and Remittances Fact Book, 2016). In Kenya, Kenyans in the Diaspora currently stands at approximately 3 million (Diaspora policy, 2014) and remittance inflows have increased significantly and maintained an average growth averaging 100 million USD since January 2013 (Rotich, 2015) with North America dominating by source region which accounted for 49.6% of the total inflows in December, 2015 thus recording a growth of 10.1 percent and a total of 10,756,086,000 US dollars was remitted through banks from January 2004 to June 2016 (CBK, 2016).

In relation to the above, most available empirical literatures analysed the effects, influence and impacts of Diaspora remittances on economic growth both international and at local level and

few that have researched on the influence of Diaspora remittances on financial development have not addressed the Kenyan perspective despite most Kenyans embracing use of banks and the initiative of the government of Kenya through CBK calling on Kenyans to embrace use of financial institutions as a channel for remitting to weed out remittances through illegal channels which have remained high due to high transaction costs involved with formal channels. This makes it hard to understand the influence that Diaspora remittances have on financial development, specifically on credit to private sector, access to financial services and bank deposits. Therefore, the purpose of this study was to establish the influence of Diaspora remittances on financial development in Kenya. Specifically, the study was to help determine the influence of Diaspora remittances on credit to private sector in Kenya, establish the influence of Diaspora remittances on access to financial services in Kenya and finally examine the influence of remittances on bank deposits in Kenya. Given that this study was specific to Kenya, Diaspora remittances as a percentage of GDP was used for 2004-2015 as 2016 data was not available while Credit to Private sector(financial depth)deposits and access to financial services were used as measures of financial development (Anayiotos & Toroyan, 2009). However, data on credit to private sector was used to indicate level of financial depth. Portfolio and Levine theory due to their relevance in addressing the aspect of financial development were adopted. The study embraced use of only secondary data which was retrieved from journals and other publications from World Bank and Central Bank of Kenya websites. The study is relevant to researchers and policy makers in gaining deeper knowledge on the existing gaps and how best to manage Diaspora remittances. A General Linear Model was utilized due to its advantage of ease analysis and final results coded and entered into SPSS and E-VIEWS for further analysis and interpretations.

Generally, from empirical reviews, the following was documented on Diaspora remittances and economic growth;

Nyeadi and Atiga (2014) while utilizing data for 33 years in the Ghanaian economy to investigate the causal link between remittances and growth of the economy by adopting granger causality and co-integration tests, findings were positive as there existed a unidirectional relationship. Nyeadi, Nuhu & Imoro (2014) conducted a study on 3 leading remittance receiving countries in West Africa for Nigeria, Senegal and Togo using granger causality and co-integration tests under Vector Auto Regressive Regression(VAR) and by adopting time series

data for 1980-2012 their results revealed that there was a unidirectional causal link. This was in contrast with Siddique, Selvanathan & Selvanathan (2012) in Bangladesh, India and Sri Lanka through use of Granger Causality test under Vector Auto regression (VAR) Framework, using time series data, results concluded that remittances did not foster economic development in Bangladesh and in India there was no causal relationship between growth in remittances and economic growth whilst in Sri Lanka, a bi-directional causality was found. Rahman(2009) holds same view that remittance seems to have insignificant and ambiguous effects on Bangladesh's GDP and Ahmed (2010) finds that the flow of remittances to Bangladesh economy have been statistically significant with a negative impact on growth. Feeny, Iamsiraroj & M.Ccgillivray (2014) examined the impact of remittances on economic growth in SIDS and revealed mixed findings in that, from parameters of empirical model used, they pointed that, while averagely there is no association between remittances and growth in developing countries, there is a positive association between these variables in SIDS.

The conclusions reached in a recent study by Mwangi and Mwenda (2015) while conducting a research on the effect of remittances on economic growth in Kenya and by use of granger causality technique and ordinary least square for period 1993-2013 revealed that international remittances form a significant part in influencing the economic growth in Kenya. The study further indicated that economic growth in Kenya is largely driven by Diaspora remittances. A study by Ocharo (2014) using an explanatory design from secondary time series data from 1970 to 2010 through employing OLS method for analysis and time series data to determine the effects of remittances on growth in Kenya indicated a positive and highly significant relationship between workers' remittances and real GDP per capita. Further there was a positive impact on gross capital formation and exchange rate from fixed to floating on economic growth. Findings from Benmamoun and Lehnert (2013) on the effects of international remittances, foreign direct investment and Official Development Assistant by employing panel data from 1990-2006 through System Generalized Method of Moments (SGMM), results indicated all the 3 components of FDI, ODA and remittances associated positively and significantly with economic growth and that the impact of remittances was higher than the rest when FDI dependency is considered.

A recent study (Nyamongo, Misati, Kipyegon, & Ndirangu, 2012) offers a mixed reaction in that most receivers of remittances do not possess the requisite knowledge and or skill on how to invest the money thus leading to ‘information asymmetry’ as consumption was take a higher percentage as it is taken as a labor substitute and fuels laxity at the expense of hard work hence negatively impacting on economic growth. It is unclear, however, what portion of remittances are intended to be invested, and whether those investing the remittances have prerequisite knowledge to that effect (Barajas, Chami & Fullen Kamp, 2009).

In reference to above empirical studies, it was noted that researchers have ignored the aspect of financial development despite being conducted in many countries and Kenya in particular. The above studies did not narrow down on the influence of remittances on credit to private sector, influence of remittances on access to financial services and influence of Diaspora remittances on bank deposits in Kenya in order to address our general objective. However, the following was documented.

On the influence of Diaspora remittances on credit to Private sector in Kenya, Karikari, Mensah and Harvey (2016), examined the association between remittances and how they affect availability of credit to private sector given that this is a good measure of financial development, their results for 1990-2011 covering 50 developing countries while using fixed effect method, random effect estimation and vector error correlation revealed that remittances promote certain aspects of financial development to some extent and the flow of remittances is encouraged by having better financial systems. Cooray, (2010) indicated that by extending credit and banking services to the public in form of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts. Githaiga and Kabiru, (2014) using GMM technique for 1980 to 2012 for 31 countries they argue that remittances and bank deposits are negatively correlated at (-0.217) and there is a significant negative correlation between remittances and credit to private sector of (-1331*).

Fromentin (2017), on analyzing the long- run and short-run impacts on remittances and financial development for emerging and in developing countries for period 1974- 2014 using Pooled Mean Group(PMG) approach, results revealed a positive long-run relationship between remittances and financial development with significant and slightly positive short run relationship except for low income countries. In addition, they indicate further that remittances

support financial development in the long –term in developing countries but effect may be different in short-term. Calderon *et al* 2007; Aggarwal., Demirguc-Kunt and Martinez (2011) and Ajilore and Ikhide, (2012) indicate that remittances can reduce credit demands and it's not automatic that remittances will translate into increase in credit to private sector especially if the flows are channeled to finance government expenditures or if the banks are reluctant to lend to public and prefer to keep the amounts as liquid assets. Brown., Carmignani and Fayad (2013), while examining the relationship between remittances and financial development through adopting cross sectional panel data results indicated that after per capita GDP is taken into account and country of origin in terms of funds, findings indicate that remittances do not increase credit to private sector.

Cherono (2013) whose study was to establish the effect of remittances and financial development on private investments using time series modeling and error correlation model found that unlike other capital flows, remittances tend to raise when recipient economy suffers an economic hitch following major crisis, natural disaster or political turmoil and its seen to be alleviating constraints related to credit and may act as a substitute for financial development as remittances and financial depth are inversely related. Coulibaly (2015) while using credit as a measure of financial development from 1980-2010 for 19 SSA countries, conclusions were reached in that remittances positively influences credit only in Sudan and financial development does not influence remittances in any country. Aggarwal, Demirguc-Kunt and Peria (2011), while using cross country balance of payment data on workers' remittances flow for 99 countries for year 1975-2013 findings indicate that while remittances results into aggregate increase in the amount of deposits and credit to private sector intermediated by local banking sector at the end led to a 0.3 % increase in share of credit to private sector.

On analyzing the above, findings on remittances and credit to private sector, Nana *et al.*, (2016) tested the association between remittances and credit to private sector for 50 developing nations using three methods of fixed effect method, random effect method and vector error correlation from 1990-2011 and results were positive, this was supported by Coulibaly (2015) and Aggarwal *et al.*, (2011). On the contrary, Calderon *et al* (2007); Aggarwal *et al*, (2011) and Ajilore and Ikhide (2012) and Brown. Carmignani and Fayad (2013) found negative association between remittances and credit to private sector to GDP. In support of negative association is a study by

Githaiga and Kabiru (2014) who used a general method of methods to test the same association and found negative correlation of (-0.113*)

Using balance of payment data for 109 developing countries there existed a positive and significant link between remittances and financial development irrespective of different methodology and estimation techniques used. On how remittances affect availability of credit to private sector for period 50 developing countries using fixed effect method, random effect estimation and vector error correlation results revealed that remittances promote certain aspects of financial development. The same researchers allude to the fact that channeling remittances through official channels will enable access to financial products and allow availability of credit to private sector which can be supported by continuous increase in number of interaction with financial institutions thus enabling further financial development. Also remittances do not impact highly on financial development as it only has a 0.13% level of influence on level of credit.

Some indicate that remittances can reduce credit demands and it's not automatic that remittances will translate into increase in credit to private sector especially if the flows are channeled to finance government expenditures or if the banks are reluctant to lend to public and prefer to keep the amounts as liquid assets. On examining the relationship between remittances and financial development through adopting cross sectional panel data results indicated that after per capita GDP is taken into account and country of origin in terms of funds, remittances do not increase credit to private sector. Thus, revealing that Diaspora remittances have a negative relationship with financial development. On analyzing the long-run and short-run impacts on remittances and financial development for emerging and in developing countries using Pooled Mean Group (PMG) approach, results revealed a positive long-run relationship between remittances and financial development with significant and slightly positive short run relationship except for low income countries. In addition, they indicate further that remittances support financial development in the long –term in developing countries but effect may be different in short-term. Additionally, these remittances may not translate into increased deposits in cases when the remittance recipients prefer other means of saving rather than banks because of existing distrust with the financial institutions. From this, the influence of Diaspora remittances on credit to private sector in Kenya was not addressed thus prompting further research.

On the influence of Diaspora remittances on access to financial services in Kenya, Karikari *et al* (2016) allude to the fact that channeling remittances through official channels will enable access to financial products and allow availability of credit to private sector which can be supported by continuous increase in number of interaction with financial institutions thus enabling further financial development. Cooray (2010) indicated that by extending credit and banking services to the public in form of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts.

Gemechu and Martinez (2014) of the World Bank Group in their study using World Bank survey data for 10,000 households for Kenya, Burkina Faso, Nigeria, Senegal and Uganda to investigate the link between Diaspora remittances and financial inclusion of the households they reached a conclusion that international remittances increase probability that households will open bank accounts in all the five countries. Other related studies found that remittances have a positive impact on breadth and financial depth of the banking sector where in a study involving 2000 households through use of municipality data results indicate that municipalities where larger population receive remittance is associated with increase in number of branch opening, number of accounts, Dermigue-Kunt., Martinez & Woodruff (2010). Nana *et al.*, (2016) indicated that once an immigrant settles in another country the probability of opening a bank account in the home country is high an indicator of financial development with Kenya and Uganda posting 18% and 8% respectively in terms of account opening while Burkina Faso, Nigeria and Senegal posting less at 6%. Richard and Fabrizio (2011) employed a regression analysis in their study of migrant remittances and financial development and observed a negative relationship between a household and probability of having a bank account of -0.288 baseline as well as strong negative relationship between community level incidence of remittances and household probability of opening/ holding a bank account. This further suggested that remittances decreased the likelihood of a household holding a bank account especially if they prefer to channel through illegal means thus limiting financial development.

Mogilevsky and Atamanov (2009) and Brown *et al.*, (2013) showed that the probability of opening a bank account does not depend on the volume of remittances received. Aggarwal *et al.*, (2006), finds that remittances promote financial development by enabling beneficiaries raise desire for and gain access to financial products and services. Naceur *et al.*, (2014) their study in

MENA countries findings revealed that remittance transfers allows banks to reach to the unbanked population and recipients with little resources and finally remittances can lead to financial development in developing countries. Some researchers argue that migrant transfers can ease the immediate budget constraints of families by enabling crucial spending needs. Such an unharnessed market in the money transfers is, not only a source of small scale saving, but it is also viewed to be paving way for development of a formalized financial sector which is essential in growth and development of LAC.

To test the association between remittances and bank account opening, Gemechu and Martinez (2014) employing World Bank data found positive results, Nana *et al.*, (2016); Dermigue-Kunt *et al* (2010) and Cooray (2010) both found positive results. However, this contradicts a study by Richard and Fabrizio (2011); Mogilevsky and Atamanov (2009) and Brown, Fabrizio and Fayad (2013) who found negative results. Naceur *et al.*, (2014) found the results to be positive a view similar to Aggarwal, Demirguc-Kunt & Peria (2006).

From above, there is an indication that remittances are associated with bank account opening from some researchers while others found negative association between remittances and financial development needs. Others show that by extending credit and banking services to the public inform of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts thus revealing a positive influence between remittances and financial development. However, the influence of Diaspora remittances on access to financial services in Kenya remains unknown.

On the Influence of Diaspora remittances on bank deposits in Kenya, Mundaca (2009) conducted a research on how remittances can affect growth in Latin America and some Caribbean countries (LAC), for period covering 1970-2002, using panel data and theoretical model, concluded that remittances may affect growth indirectly when these funds are channeled properly through financial institutions which in the long run may enable banks to accept deposits and in turn provide investors with investment needs. Hadeel 2012, using fixed effect method for 2000-2010 in MENA countries indicate that remittances inform of savings can be used as good financial resources that can enhance growth. Rao and Gazi, 2011; Giuliano and Ruiz-Arranz (2009), indicated that remittances impact positively on financial development by enabling banks make good use of deposited cash in terms of savings as good financial resources for growth. Aggarwal

et al (2011), pointed that since remittances are substantial in amounts, recipients might develop an interest in financial products that may allow them to save some funds as well as gain some interest from the savings and boost financial development.

Additionally, using balance of payment data for 109 developing countries for 1975-2007 to study the association between remittances and financial sector development there existed a positive and significant link between the two irrespective of different methodology and estimation techniques used. Further they point out that through use of GMM technique, the level of impact on deposits and credit is less falling at 0.17% and 0.13% respectively. Tarus (2015) using fixed effect method for 23 SSA countries mention that the receipts from Diaspora can play a crucial role in enabling accumulation of savings which can help expand deposit base and in turn enable the outside community access the funds. Barajas *et al*, (2009) indicated that the inflows from remittances are likely to boost the quantity of funds flowing through the banks which at the end may lead to financial development and finally to economic growth through increased economies of scale in financial intermediation.

Brown, *et al.*, (2013) their findings reveal that these it is not certain that Diaspora remittances will translate into increased deposits in cases when the remittance recipients prefer other means of saving rather than banks because of existing distrust with the financial institutions. Gemechu and Martinez (2014) in their study using World Bank survey data for 10,000 households for Kenya, Burkina Faso, Nigeria, Senegal and Uganda to investigate the link between Diaspora remittances and financial inclusion of the households their findings also revealed that revealed value of deposits to GDP is often higher among other findings. Aggarwal *et al.*, (2006), while using cross country balance of payment data on workers' remittances flow for 99 countries for year 1975-2013 findings indicate that while remittances results into aggregate increase in the amount of deposits and credit to private sector intermediated by local banking sector at the end remittances have a positive and significant impact on financial development i.e. 1% increase in share of remittances to GDP is associated with a 0.5-0.6 % increase in share of bank deposits to GDP.

On analyzing the above empirical studies, Tarus (2015) using fixed effect method for 23 SSA counties from 1994-2009 and Hadeel (2012) employing a similar methodology from 2000-2010 for MENA countries results indicated that receipts from remittances helps in accumulating

deposits which can in turn promote financial development, Mundaca (2009) employed panel data for 1970-2002 for LAC countries and similar conclusions were reached in that, in the long run banks accept deposits and in turn provide investors with investment needs hence financial development. However, this contradicts Githaiga and Kabiru (2014) who found negative results of (-0.217) between remittances and bank deposits. Rao and Gazi, 2011; Giuliano and Ruiz-Arranz, (2009); Barajas *et al*, (2009) findings revealed that remittances positively impacts on financial development by enabling banks make good of deposited cash as good financial resources for growth, Aggarwal *et al.*, (2011) utilized balance of payment data for 109 developing countries for 1975-2007 and results between remittances and financial development were positive and significant.

Borrowing from the empirical reviews above, a study conducted in Latin America and some Caribbean countries (LAC), findings indicated that remittances can affect economic growth indirectly when these funds are channeled properly through financial institutions which in the long run may enable banks to accept deposits and in turn provide investors with investment needs. Others indicated that remittances impact positively on financial development by enabling banks make good use of deposited cash in terms of savings as good financial resources for growth. Given the existing variety in terms of conflicting results obtained from reviewed literatures above, there existed inadequate information in regard to influence of Diaspora remittances on bank deposits in Kenya thus leaving a gap that need to be filled through this research.

On testing for existence of causality, Nana *et al* (2016) examined the association between remittances and how they affect availability of credit to private sector given that this is a good measure of financial development results for 1990-2011 covering 50 developing countries to explore traced causality in Africa using fixed effect method, random effect estimation and vector error correlation revealed that remittances promote certain aspects of financial development to some extent and the flow of remittances is encouraged by having better financial systems. Janesh, (2013) on the role of remittances and economic growth in the banking sector development in Fiji using annual data 1980-2010 by employing the Toda Yana Moto granger causality test (1995) and vector auto correlation, empirically findings indicated existence of a causality between economic growth, remittances and banking sector development. Mahedi

(2014) conducted an analysis on the role of Diaspora remittances on economic growth in Bangladesh economy and using a Johansen co-integration test along with vector error correction model and Granger Causality tests using annual secondary data, spanning from 1981 to 2013 to reveal both the short-run and the long-run association between remittance-growth and remittance-financed development, findings indicated a long run positive relationship between Diaspora remittances and gross domestic products (GDP) an indicator that remittances are more likely to contribute to longer-term growth in Bangladesh. It further indicated that remittances had a significant positive effect on financial development.

Coulibaly (2015) while utilizing a system approach and Granger causality testing approach that is based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values for 1980-2010 covering 19 sub-Saharan countries results indicated that liquid liabilities as a proxy for financial development remittances positively influences financial development only in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia. On the contrary, using credit as a measure of financial development remittances positively influences remittances only in Sudan and financial development does not influence remittances in any country and therefore the causality link between remittances and financial development differs across countries in SSA. Motelle (2011) employed a simple model to determine the effect of remittances on financial development and results indicated that there was a long run effect of remittances on financial development in Lesotho however do not cause financial development as in the short run the effect evaporates. By employing Granger (1988) causality it symbolized lack of causality running from remittances to financial development and there is no any bi-directional causality between the two.

In regard to the above cited studies, Nana *et al* (2016) adopted fixed effect method, random effect and vector error correlation for 50 developing states and results were positive , Mahedi (2014) employed a similar model of vector error correlation for 1981-2013 and also utilizing Johansen co-integration technique and results were positive, Janesh (2013) in Fiji using Toda Yana Moto granger causality and vector error correlation model for 1980-2010 results were positive between economic growth, remittances and banking sector development, Coulibaly (2015) adopted a system approach and Granger causality for 1980-2010 in 19 SSA countries and results were mixed as remittances only influenced financial development in Niger, Senegal,

Sierra Leone and Sudan and financial development impacts remittances in Gambia implying a bi-directional causality. These were all in contrary to Motelle (2011) while utilizing a simple model in Lesotho which revealed a long run relationship between remittances and financial development but do not cause financial development. On the contrary also is a study that employed Granger (1988) causality which depicted non-existence of a causality between remittances and financial development nor was there any indicator of bi-directional relationship.

Therefore, there seem to be causality between remittances and financial development in some researchers while none in others. On using fixed effect method, random effect estimation and vector error correlation 50 developing countries to explore traced causality in Africa and study revealed that remittances promote certain aspects of financial development to some extent. Through employing the Toda Yana Moto granger causality test and vector auto correlation, empirically findings indicated existence of causality between economic growth, remittances and banking sector development. By using a Johansen co-integration test along with vector error correction model and Granger Causality tests using annual secondary data, findings indicated a long run positive relationship between Diaspora remittances and gross domestic products (GDP). On employing vector error correlation model, results indicated causality link between remittances and financial sector development. On utilizing a system approach and Granger causality testing approach that was based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values results indicated that liquid liabilities as a proxy for financial development remittances positively influences financial development only in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia. Using credit as a measure of financial development remittances positively influences remittances only in Sudan and financial development does not influence remittances in any country and therefore the causality link between remittances and financial development differs across countries in SSA and is a sensitive indicator of financial development. Through employing a simple model results in Lesotho indicated that there was a long- run effect of remittances on financial development in Lesotho however do not cause financial development as the effect evaporates in the short-run and results depicted lack of a causality running form remittances to financial development nor is there any bi-directional causality between the two. These studies as much as they have indicated existence and non-existence of a causal relationship from one country to another, the same in relation to Kenya had

not been explored and it was hard to tell whether there was a causal relationship or not hence this research.

1.1.1 Diaspora Remittances in Kenya

Remittances are cross-border, private, voluntary monetary and non-monetary (social or in-kind) transfers made by migrants and Diaspora, individually or collectively, to people or communities not necessarily in their home country (European Parliament, 2014).Diaspora remittances have continued to increase maintaining an average of USD 100 million since January2013 (Rotich, 2015).The flow has been on the increase as evidenced in table 1.1 and 1.2 and 1.3.

1.1.2 Financial Development in Kenya.

Financial development refers to either the share of bank deposits or the ratio of banks credit to private sector as a percentage of GDP (Aggarwal *et al*, 2011).For purposes of this paper, various proxies of financial development to include Credit to Private sector (Financial depth), access to financial services and bank deposits were taken into account as indicated in the conceptual framework.

Among the most developed countries in terms of financial systems, Kenya is considered to have one of the broadest and most developed financial systems in sub- Saharan Africa although still below other developed countries. The sector comprises 45 commercial banks, 13 non-bank financial institutions, two mortgage finance companies, 89 foreign exchange bureaus, four building societies, 47 insurance companies, a large post office savings bank with over 874 branches, 57 hire purchase companies, over 2,670 savings and credit cooperatives, and over 86 non-governmental organizations/microfinance institutions (Kagochi, 2013).

1.2 Statement of Problem

Globally, Diaspora remittances have remained substantial to many countries and have been seen to increase as in 2015 they received more than \$601 billion and developing countries received \$441 billion nearly three times that of ODA. In Kenya, the flow through formal channels has increased maintaining an average growth rate of USD 100 million per month since January 2013 and according to Central Bank of Kenya a total of 10,756,086,000 US dollars was remitted through banks from January 2004 to June 2016. Despite this ballooning figure, the available empirical studies have placed a major concentration on Diaspora remittances and economic growth, Diaspora remittances and poverty reduction including studies conducted in Kenya but have not addressed the aspect of remittances and financial development despite the above huge amount flowing through official channels. Few that have addressed the aspect of financial development have not captured the Kenyan case in relation to existing knowledge gaps on the influence of Diaspora remittances on credit to private sector, influence of remittances on access to financial services and influence of Diaspora remittances on bank deposits in order to satisfy our general objective thus leaving these areas unknown. It is in this regard therefore, that the study sought to examine the influence of Diaspora remittances on financial development in Kenya. Further, the study was to determine the influence of Diaspora remittances on credit to private sector, establish the influence of remittances on access to financial services and examine the influence of Diaspora remittances on bank deposits aspects that had not been addressed by previous researchers. Therefore, it is because of the failure by the previous studies to address the above aspects that this study was conducted to examine the influence of Diaspora remittances on financial development in Kenya.

1.3 Objectives of the Study

1.3.1 General Objective

The general objective of the present study was to examine the influence of Diaspora remittances on financial development in Kenya.

1.3.2 Specific Objectives

- i. To determine the influence of Diaspora remittances on credit to private sector in Kenya.
- ii. To establish the influence of Diaspora remittances on access to financial services in Kenya.

iii To examine the influence of Diaspora remittances on bank deposits in Kenya.

1.4 Research Hypotheses

The following three hypotheses were formulated for the purposes of this study

H₀₁: Diaspora remittances have no statistically significant influence on credit to private sector in Kenya.

H₀₂: Diaspora remittances have no statistically significant influence on access to financial services in Kenya.

H₀₃: Diaspora remittances have no statistically significant influence on bank deposits in Kenya.

1.5 Scope of the Study

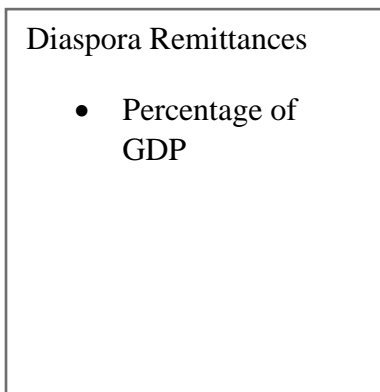
The study was limited to Kenya through a review of literature for panel data from 2004-2015 from Central Bank of Kenya, World Bank, World Development Indicators due to availability of data with other parts of the world used as references.

1.6 Justification of the Study

The contribution of Diaspora remittances on financial development in Kenya has not attracted much attention as previous research focused highly on the contribution of Diaspora remittances on economic growth ignoring the fact that one way to ensure economic growth is through financial development. In Kenya, the contribution has been on the rise and for the period January 2004 and June 2016 a total of ksh10, 756,086,000 US dollars was seen to be sent through official channels. Through this, Kenyans are unable to tell the influence Diaspora remittances have on financial development as there was no literature on the same in Kenya thus prompting this study. This study would enable the Policy makers in developing workable policies that will at the end motivate the immigrants to remit more through official channels in order to minimize on unofficial ones. The study was also to assist those charged with key responsibility of tracking down the flow of remittances like the Central Bank of Kenya and other financial institutions in gaining more knowledge on management of remittances. The study is relevant to the locals with relatives abroad in gaining knowledge on how best Diaspora remittances can be used for long term benefits and importance of embracing use of financial sectors for remitting other than spending it on consumption. For future researchers the study will help them build on the current research by exploring more on areas that may be recommended by the researcher.

1.7 Conceptual Framework

Independent Variable



Dependent variable

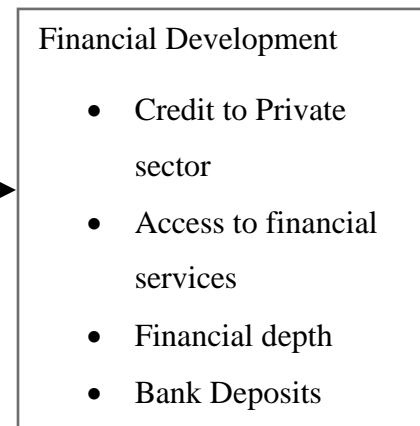


Figure 1.1 Diagram showing the independent, dependent and intervening variables.

Source; Nana, Mensah & Hervey (2016) and Anayiotos and Toroyan, (2009).

From the above diagram Diaspora remittances formed the independent variable measured as a percentage of GDP. Financial development on the other hand was our dependent variable which was measured by Credit to Private Sector (Financial depth) used as a proxy of financial development and bank deposits all as percentage of GDP as they are seen to be good measures of financial development. Access was used with banking account opening per 1000 households being considered to measure level of access to financial services as its percentage to GDP was not readily available.

CHAPTER TWO

LITERATURE REVIEW

This section highlights the theoretical literature, conceptual literature and empirical literature as explained below.

2.1 Theoretical Literature

Most theoretical studies emphasize on the altruistic function as the key drivers behind remittances (Lucas & Stark, 1985; Vargas, Carlos & Huang, 2006; Chandar, Moulton & Ricketts, 2009). However, because the reason to remit may not be purely altruistic the study adopted the following theories;

2.1.1 Portfolio Theory

Elbadawi and Rocha (1992) on their detailed review and thorough analysis of the causes of immigrant remittances, they divide their literature into two main strands: the “endogenous migration” approach and the “portfolio” approach. The endogenous migration theory is based on the economics of the family which as per this study did not apply. The portfolio approach was utilized since according to Elbadawi and Rocha, 1992 which isolates the decision to remit from the decision to migrate and likewise avoids issues of family ties. In their view, the migrant earns income and makes a decision on the allocation of saving between the home country and the host country assets. The theory took an informal theory of remittances that supports the observation that remittances and other capital flows have something in common although no studies have been undertaken in this context. The theory further alludes to the fact that the rates of return on various assets, or return differentials, should influence remittances. It advocates for variables like interest rates differentials on deposit accounts offered in host and home country, incentive interest offered in the home country deposits, black market exchange premium (if any), return on real estate in the home country, inflation rates, political risk and uncertainty.

2.1.2 Levine (2005) Theory

This modern theory has been chosen on the basis that there are other factors influencing financial development in a country and given that the cost of remitting is high. The theory summarizes existing literature on the finance –growth nexus by advocating for five financial system functions

that decreases transaction and information costs through; Providing information about existing investment opportunities and support capital allocation process, monitoring investment opportunities and advancing corporate governance by providing finance, promoting trade, diversification and risk management, increase level of savings supporting the exchange process.

2.2 Conceptual Literature

The study gives an overview on the independent (Diaspora Remittances) and dependent variable (Financial Development) as per the conceptual framework in order to understand their relationship.

2.2.1 Diaspora Remittances

As defined previously, Diaspora remittances are seen to be one of the reliable sources of income for many countries like Kenya as they tend to be more stable than other capital flows. More countries have realized the potentiality of these remittances as they may reduce credit constraints and act as a substitute for financial development as in SSA the flow of remittances has been high with the inflow from North America taking the lead in Kenyan perspective. As illustrated in the appendices, in Kenya the flow has remained high as the government of Kenya through the Central Bank and the Ministry of foreign affairs has continuously urged the banking sector to embrace the Diasporas currently standing at 3 million in order to offer quick mechanism for Kenyans to remit. Diaspora remittances are seen to work well in economies with less developed financial markets as they provide alternative means for financing activities thus working as substitutes. Others argue that it is only in economies with good financial systems that can feel the impact of remittances as they work as compliments in economies with quality and effective financial system (Jepchumba, 2013). In order to understand the influence of Diaspora remittances on financial development in Kenya, this research was conducted and records on Diaspora remittances were obtained from the Central Bank of Kenya and World Bank.

2.2.2 Financial Development

Financial development refers to either the share of bank deposits or the ratio of banks credit to the private sector as a percentage of GDP (Aggarwal *et al.*, 2011). In line with the conceptual framework various proxies of financial development to include Credit to Private Sector, access

(ability of individuals and companies to access financial services) and bank deposits were considered. According to many researchers, the level of financial development was highly measured by the amount of credit to private sector whereby it enabled continuous interaction between the recipients of remittances with financial institutions where the excess of funds over consumption increases propensity to save which would enable the individuals to be attracted in the banking industry thus enabling deepening financial sector development (Nana *et al.*, 2016). Through literature review, records indicated that financial development in SSA is still below the benchmark level compared to other developing countries despite the level of financial depth being on the increase and the region median ratio of credit to private sector increasing from 10% since 1995 to almost 21% in 2014 (IMF, 2016). All the variables were retrieved from the IMF's World Economic Outlook Database, Central Bank of Kenya and World Bank, World Development Indicators.

2.3 Empirical Literature

As per the existing empirical literatures, more research on Diaspora remittances and economic growth has been undertaken and largely documented in many countries with some studies narrowing down to the effects, impacts and influence of Diaspora remittances on inequality, poverty reduction, real estate, health and education while a few that have been conducted have not addressed on the area of financial development in Kenya given that financial development through effective financial system promotes economic growth in the long-run. Therefore, there exists a gap on the influence of Diaspora remittances on credit to private sector, access to financial services, bank deposits and whether the relationship between remittances and financial development is causal in nature hence this research.

Nyeadi and Atiga (2014) while employing data for 33 years in the Ghanaian economy to investigate the causal link between remittances and growth of the economy through use of granger causality and co-integration tests, findings were positive in that there was a unidirectional relationship as remittances does not lead to growth. Nyeadi *et al.*, (2014) conducted a study on 3 leading remittance receiving countries in West Africa i.e. Nigeria, Senegal and Togo using granger causality and co-integration tests under Vector Auto Regressive Regression (VAR) by adopting time series data for 1980-2012 and found out that there is unidirectional causal link. This was in contrast with a study (Siddique *et al.*, 2012) in

Bangladesh, India and Sri Lanka through use of Granger Causality test under Vector Auto regression (VAR) framework and utilizing time series data, results concluded that remittances does not lead to economic development in Bangladesh and in India there is no causal relationship between growth in remittances and growth in economy whilst in Sri Lanka, a bi- directional causality was found; namely economic growth influences growth in remittances and vice versa. Rahman (2009) holds that remittance seems to have insignificant and ambiguous effects on Bangladesh's GDP. Ahmed (2010) finds that the flow of remittances to Bangladesh economy has been statistically significant with a negative impact on growth. Feeny, Iamsiraroj and M.Ccgillivray (2014) examined the impact of remittances on economic growth in SIDS and mixed findings were found in that despite variants of empirical model used suggesting that, while, on average there is no association between remittances and growth in developing countries, there existed a positive association between these variables in SIDS. The finding holds in Sub-Saharan Africa but not in Latin America and Caribbean.

Mwangi and Mwenda (2015) conducted a research on the effect of remittances on economic growth in Kenya and through use of granger causality and ordinary least square method for period 1993-2013 it revealed that international remittances form a significant part in influencing the economic growth in Kenya. It further indicated that economic growth in Kenya was largely dependent on Diaspora remittances. Ocharo (2014) using an explanatory design from secondary time series data from 1970 - 2010 through OLS method for analysis and time series data to determine the effects of remittances on growth in Kenya findings indicated a positive and highly significant relationship between workers' remittances and real GDP per capita. There was also a positive impact on gross capital formation and exchange rate from fixed to floating on economic growth. Benmamoun and Lehnert (2013), on the effects of international remittances, foreign direct investment and Official Development Assistant using panel data 1990-2006 and System Generalized Method of Moments (SGMM), results indicated that all the 3 components of FDI, ODA and remittances were associated positively and significantly with economic growth and the impact of remittances was higher than the rest when FDI dependency is considered. But when the FDI dependency dummy is considered the difference between the international remittances and FDI coefficients on one hand and international remittances and ODA coefficient on the other hand are significant at 0.01 significant levels although the contribution of international remittances to economic growth of developing countries is still higher.

Nyamongo *et al.*, (2012) offers a mixed reaction in that most receivers of remittances do not possess the required knowledge and or skill on how to invest the money thus leading to ‘information asymmetry’ and may end up consuming more money as it is taken as a substitute of labor and attracts laxity at the expense of hard work hence negatively impacting on economic growth. It remains ambiguous, however, what portion of these remittances are intended to be invested, and whether those investing the remittances have prerequisite knowledge to that effect (Barajas *et al.*, 2009).

The above notwithstanding the extent of reviewed literature on Diaspora remittances cannot be said to be exhaustive nor conclusive as all the above empirical studies were not satisfactorily done as far as the objectives of this study were concerned and it is because of their failure to address the financial development aspect in Kenya that this study was extended further to conduct more empirical studies to fill these research gaps as per existing three objectives.

2.3.1 Influence of Diaspora remittances on Credit to Private sector in Kenya

Nana *et al.*,(2016), examined the association between remittances and how they affect availability of credit to private sector given that this is a good measure of financial development, their results for 1990-2011 covering 50 developing countries while using fixed effect method, random effect estimation and vector error correlation revealed that remittances promote certain aspects of financial development to some extent and the flow of remittances is encouraged by having better financial systems. Cooray, (2010) indicated that by extending credit and banking services to the public in form of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts. Githaiga and Kabiru, (2014) using GMM technique for 1980 to 2012 for 31 countries they argue that remittances and bank deposits are negatively correlated at (-0.217) and there is a significant negative correlation between remittances and credit to private sector of (-1331*).

Fromentin (2017), on analyzing the long- run and short-run impacts on remittances and financial development for emerging and in developing countries for period 1974- 2014 using Pooled Mean Group(PMG) approach, results revealed a positive long-run relationship between remittances and financial development with significant and slightly positive short run relationship except for low income countries. In addition, they indicate further that remittances

support financial development in the long –term in developing countries but effect may be different in short-term. Calderon *et al*, (2007); Aggarwal *et al*, (2011) and Ajilore and Ikhide, (2012) indicate that remittances can reduce credit demands and it's not automatic that remittances will translate into increase in credit to private sector especially if the flows are channeled to finance government expenditures or if the banks are reluctant to lend to public and prefer to keep the amounts as liquid assets. Brown, *et al.*, (2013), while examining the relationship between remittances and financial development through adopting cross sectional panel data and results indicated that after per capita GDP is taken into account and country of origin in terms of funds, findings indicate that remittances do not increase credit to private sector

Cherono (2013) whose study was to establish the effect of remittances and financial development on private investments using time series modeling and error correlation model found that unlike other capital flows, remittances tend to raise when recipient economy suffers an economic downturn following crisis, natural disaster or political conflict and its seen to be alleviating credit constraints and may act as a substitute for financial development as remittances and financial depth are inversely related. Coulibaly (2015) while using credit as a measure of financial development from 1980-2010 for 19 SSA countries, conclusions were reached in that remittances positively influences credit only in Sudan and financial development does not influence remittances in any country. Aggarwal, Demirguc-Kunt &Pería (2006), while using cross country balance of payment data on workers' remittances flow for 99 countries for year 1975-2013 findings indicate that while remittances results into aggregate increase in the amount of deposits and credit to private sector intermediated by local banking sector at the end lead to a 0.3 % increase in share of credit to private sector.

On analyzing the above, Nana *et al.*, (2016) tested the association between remittances and credit to private sector for 50 developing nations using three methods of fixed effect method, random effect method and vector error correlation from 1990-2011 and results were positive, Aggarwal *et al.*, (2006) while using cross country balance of payment data found positive results this was supported by Coulibaly (2015). Githaiga and Kabiru (2014) using General method of methods to test the same association and found negative correlation of (-0.113*). On the same contrary, is a study by Calderon *et al* 2007; Aggarwal *et al*, 2011, Ajilore and Ikhide (2012) and Brown *et al.*, (2013) all found negative association between remittances and credit to private sector.

From above empirical reviews, on how remittances affect availability of credit to private sector for period 50 developing countries using fixed effect method, random effect estimation and vector error correlation results revealed that remittances promote certain aspects of financial development. The same researchers allude to the fact that channeling remittances through official channels will enable access to financial products and allow availability of credit to private sector which can be supported by continuous increase in number of interaction with financial institutions thus enabling further financial development. Also remittances do not impact highly on financial development as it only has a 0.13% level of influence on level of credit. Others show that by extending credit and banking services to the public in form of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts thus revealing a positive influence between remittances and financial development. Some indicate that remittances can reduce credit demands and it's not automatic that remittances will translate into increase in credit to private sector especially if the flows are channeled to finance government expenditures or if the banks are reluctant to lend to public and prefer to keep the amounts as liquid assets. On examining the relationship between remittances and financial development through adopting cross sectional panel data, results indicated that after per capita GDP is taken into account and country of origin in terms of funds, remittances do not increase credit to private sector thus revealing negative influence of Diaspora remittances on financial development. On analyzing the long- run and short-run impacts on remittances and financial development for emerging and in developing countries using Pooled Mean Group (PMG) approach, results revealed a positive long-run relationship between remittances and financial development with significant and slightly positive short run relationship except for low income countries. In addition, they indicate further that remittances support financial development in the long –term in developing countries but effect may be different in short-term.

From this literature review, the influence of Diaspora remittances on credit to private sector in Kenya was not addressed thus prompting further research.

2.3.2 Influence of Diaspora Remittances on Access to Financial Services in Kenya

Nana *et al.*, (2016) allude to the fact that channeling remittances through official channels will enable access to financial products and allow availability of credit to private sector which can be

supported by continuous increase in number of interaction with financial institutions thus enabling further financial development. Cooray, (2010) indicated that by extending credit and banking services to the public in form of savings accounts and small scale loans, the unbanked larger population is able to come into contact with financial systems through opening bank accounts.

Gemechu and Martinez (2014) of the World Bank Group in their study using World Bank survey data for 10,000 households for Kenya, Burkina Faso, Nigeria, Senegal and Uganda to investigate the link between Diaspora remittances and financial inclusion of the households they reached a conclusion that international remittances increase probability that households will open bank accounts in all the five countries. Aggarwal *et al.*, (2006), find that remittances promote financial development by enabling beneficiaries raise desire for and gain access to financial products and services. Naceur *et al.*, (2014) their study in MENA countries findings revealed that remittance transfers allows banks to reach to the unbanked population and recipients with little resources and finally remittances can lead to financial development in developing countries. Some researchers argue that migrant transfers can ease the immediate budget constraints of families by enabling crucial spending needs. Such an unharnessed market in the money transfers is, not only a source of small scale saving, but it is also viewed to be paving way for development of a formalized financial sector which is essential in growth and development of LAC.

Dermigue-Kunt., Martinez & Woodruff (2010), found out that remittances have a positive impact on breadth and financial depth of the banking sector where in a study involving 2000 households through use of municipality data results indicate that municipalities where larger population receive remittance is associated with increase in number of branch opening, number of accounts and value of deposits to GDP is often higher, Nana *et al.*, (2016) indicated that once an immigrant settles in another country the probability of opening a bank account in the home country is high an indicator of financial development with Kenya and Uganda posting 18% and 8% respectively in terms of account opening while Burkina Faso, Nigeria and Senegal posting less at 6%. Richard and Fabrizio (2011) employed a regression analysis in their study of migrant remittances and financial development and observed a negative relationship between a household and probability of having a bank account of -0.288 baseline as well as strong negative relationship between community level incidence of remittances and household probability of

opening holding a bank account. This further suggested that remittances decreased the likelihood of a household holding a bank account especially if they prefer to channel through illegal means thus limiting financial development. Mogilevsky and Atamanov (2009) and Brown *et al.*, (2013) showed that the probability of opening a bank account does not depend on the volume of remittances received.

To test the association between remittances and bank account opening, Gemechu and Martinez (2014) employing World Bank data found positive results, Nana *et al.*, (2016); Dermigue-Kunt *et al* (2010) and Cooray (2010) both found positive results. However, this contradicts a study by Richard and Fabrizio (2011); Mogilevsky and Atamanov (2009) and Brown, Fabrizio and Fayad (2013) who found negative results while Naceur *et al.*, (2014) found the results to be positive a view similar to Aggarwal, Demirguc-Kunt & Pería (2006).

This empirical review makes an indication that remittances are associated with bank account opening from some researchers while others found negative association between remittances and financial development needs in terms of access to financial services. Cases of use of illegal channels have also been immensely mentioned which act as a hindrance for some remittances recipients to fail to demand for financial products and services and this is due to high transactions costs or if the recipients have other motives other than saving the remittance receipts through banks. Therefore, it is because of the failure by the above reviews to address the access perspective in relation to remittances and access to financial services in Kenya that this study was conducted further in order to address the existing knowledge gap.

2.3.3 Influence of Diaspora Remittances on Bank Deposits in Kenya.

Aggarwal *et al.*,(2006), while using cross country balance of payment data on workers' remittances flow for 99 countries for year 1975-2013 findings indicate that while remittances results into aggregate increase in the amount of deposits and credit to private sector intermediated by local banking sector at the end remittances it has a positive and significant impact on financial development i.e. 1% increase in share of remittances to GDP is associated with a 0.5-0.6 % increase in share of bank deposits to GDP. Rao and Gazi, 2011; Ruiz-Arranz, 2009, indicated that remittances impact positively on financial development by enabling banks make good use of deposited cash in terms of savings as good financial resources for growth.

Aggarwal *et al.*, (2011), pointed that since remittances are substantial in amounts, recipients might develop an interest in financial products that may allow them to save some funds as well as gain some interest from the savings and boost financial development. Mundaca (2009) conducted a research on how remittances can affect growth in Latin America and some Caribbean countries (LAC), for period covering 1970-2002, using panel data and theoretical model, concluded that remittances may affect growth indirectly when these funds are channeled properly through financial institutions which in the long run may enable banks to accept deposits and in turn provide investors with investment needs. Hadeel (2012) using fixed effect method for 2000-2010 in MENA countries indicate that remittances inform of savings can be used as good financial resources that can enhance growth

Additionally, Aggarwal *et al.*, (2011) while using balance of payment data for 109 developing countries for 1975-2007 to study the association between remittances and financial sector development there existed a positive and significant link between the two irrespective of different methodology and estimation techniques used. Further they point out that through use of GMM technique, the level of impact on deposits and credit is less falling at 0.17% and 0.13% respectively. Tarus (2015) using fixed effect method for 23 SSA countries mention that the receipts from Diaspora can play a crucial role in enabling accumulation of savings which can help expand deposit base and in turn enable the outside community access the funds. Barajas *et al.*, (2009) indicated that the inflows from remittances are likely to boost the quantity of funds flowing through the banks which at the end may lead to financial development and finally to economic growth through increased economies of scale in financial intermediation. Githaiga and Kabiru (2014) using GMM technique for 1980 to 2012 for 31 countries they argument that remittances and bank deposits are negatively correlated at (-0.217).

Brown, *et al.*, (2013) their findings reveal that it is not certain that Diaspora remittances will translate into increased deposits in cases when the remittance recipients prefer other means of saving rather than banks because of existing distrust with the financial institutions. Gemechu and Martinez (2014) in their study using World Bank survey data for 10,000 households for Kenya, Burkina Faso, Nigeria, Senegal and Uganda to investigate the link between Diaspora remittances and financial inclusion of the households their findings also revealed that revealed value of deposits to GDP is often higher among other findings.

On analyzing the above empirical studies, Tarus (2015) using fixed effect method for 23 SSA countries from 1994-2009 and Hadeel (2012) employing a similar methodology from 2000-2010 for MENA countries results indicated that receipts from remittances helps in accumulating deposits which can in turn promote financial development, Mundaca (2009) employed panel data for 1970-2002 for LAC countries and similar conclusions were reached in that, in the long run banks accept deposits and in turn provide investors with investment needs hence financial development. Aggarwal *et al*, (2006), finds results to be positive between remittances and bank deposits. However, this contradicts Githaiga and Kabiru (2014) who found negative results of (-0.217) between remittances and bank deposits. Rao and Gazi, 2011; Ruiz-Arranz, (2009); Barajas *et al*, (2009) findings revealed that remittances positively impacts on financial development by enabling banks make good of deposited cash as good financial resources for growth, Aggarwal *et al*, (2011) utilized balance of payment data for 109 developing countries for 1975-2007 and results between remittances and financial development were positive and significant. However, Brown, *et al*, (2013) finds contradicting results in that their findings reveal that it is not certain that Diaspora remittances will translate into increased deposits in cases when the remittance recipients prefer other means of saving rather than banks because of existing distrust with the financial institutions a view almost similar to Aggarwal *et al* (2011) who found the association between remittances and bank deposits to be less falling.

Borrowing from the empirical reviews above, a study conducted in Latin America and some Caribbean countries (LAC), findings indicated that remittances can affect economic growth indirectly when these funds are channeled properly through financial institutions which in the long run may enable banks to accept deposits and in turn provide investors with investment needs. Others indicated that remittances impact positively on financial development by enabling banks make good use of deposited cash in terms of savings as good financial resources for growth. Using balance of payment data for 109 developing countries there existed a positive and significant link between remittances and financial development irrespective of different methodology and estimation techniques used. Other researchers argue that these remittances may not lead into increased deposits in cases when the remittance recipients prefer other means of saving rather than banks because of existing distrust with the financial institutions. Through this, there exists a knowledge gap between remittances and bank deposits in relation to Kenya that needs to be addressed since the above reviews did not address Kenyan situation.

2.3.4 Causal Relationship between Diaspora Remittances and Financial Development in Kenya

According to Granger (1988), when two variables are co-integrated there must be a causal relationship between them at least in one direction. It's in view of this that the study tested the existence of causality between diaspora remittances and financial development in Kenyan economy.

Nana *et al.*, (2016) examined the association between remittances and how they affect availability of credit to private sector for 1990-2011 covering 50 developing countries to explore traced causality in Africa using fixed effect method, random effect estimation and vector error correlation revealed that remittances promote certain aspects of financial development to some extent and the low of remittances is encouraged by having better financial systems. Janesh, (2013) on the role of remittances and economic growth in the banking sector development in Fiji using annual data 1980-2010 through employing the Toda Yana Moto granger causality test (1995) and vector auto correlation, empirically findings indicated existence of a causality between economic growth, remittances and banking sector development. Mahedi (2014) conducted an analysis on the role of Diaspora remittances on economic growth in Bangladesh economy and using a Johansen co-integration test along with vector error correction model and Granger Causality tests using annual secondary data, spanning from 1981 to 2013 to reveal both the short-run and the long-run association between remittance-growth and remittance-financed development, findings indicated a long run positive relationship between Diaspora remittances and gross domestic products (GDP) an indicator that remittances are more likely to contribute to longer-term growth in Bangladesh. It further indicated that remittances have a significant positive effect on financial development.

Coulibaly (2015) while utilizing a system approach and Granger causality testing approach that is based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values for 1980-2010 covering 19 sub-Saharan countries results indicated that liquid liabilities as a proxy for financial development remittances positively influences financial development only in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia. On the contrary, using credit as a measure of financial development remittances positively influences remittances only in Sudan and financial development does not influence remittances in any country and therefore the causality link

between remittances and financial development differs across countries in SSA and is a sensitive indicator of financial development. Motelle (2011) employed a simple model to determine the effect of remittances on financial development and results indicated that there was a long run effect of remittances on financial development in Lesotho however do not cause financial development as in the short run the effect evaporates. It further revealed that by employing Granger, financial development causes remittances. Granger (1988), depicted lack of causality running from remittances to financial development nor is there any bidirectional causality between the two.

From the empirical findings above, Nana *et al.*, (2016) adopted fixed effect method, random effect and vector error correlation for 50 developing states and results were positive, Mahedi (2014) employed a similar model of vector error correlation for 1981-2013 and also utilizing Johansen co-integration technique and results were positive, Janesh (2013) in Fiji using Toda Yana Moto granger causality and vector error correlation model for 1980-2010 results were positive between economic growth, remittances and banking sector development, Coulibaly (2015) adopted a system approach and Granger causality for 1980-2010 in 19 SSA countries and results were mixed as in remittances only influenced financial development in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia implying a bi-directional causality. These were all in contrary to Motelle (2011) while utilizing a simple model in Lesotho revealed that a long run relationship between remittances and financial development but do not cause financial development. On the contrary also is a study that employed Granger (1988) causality which depicted non-existence of a causality between remittances and financial development nor is there any indicator of bi-directional relationship.

Empirically examining the above empirical reviews, there seem to be causality between remittances and financial development in some researchers while none in others. On using fixed effect method, random effect estimation and vector error correlation 50 developing countries to explore traced causality in Africa and study revealed that remittances promote certain aspects of financial development to some extent. Through employing the Toda Yana Moto granger causality test and vector auto correlation, empirically findings indicated existence of causality between economic growth, remittances and banking sector development. By using a Johansen co-integration test along with vector error correction model and Granger Causality tests using

annual secondary data, findings indicated a long run positive relationship between Diaspora remittances and gross domestic products (GDP). On employing vector error correlation model, results indicated causality link between remittances and financial sector development. On utilizing a system approach and Granger causality testing approach that was based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values results indicated that liquid liabilities as a proxy for financial development remittances positively influences financial development only in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia. Using credit as a measure of financial development remittances positively influences remittances only in Sudan and financial development does not influence remittances in any country and therefore the causality link between remittances and financial development differs across countries in SSA and is a sensitive indicator of financial development. Through employing simple model results in Lesotho results indicated that there was a long run effect of remittances on financial development however do not cause financial development as in the short run the effect diminishes and results depicted lack of a causality running from remittances to financial development nor is there any bi-directional causality between the two. These studies as much as they have indicated the existence of a causal relationship between remittances and financial development in other countries the same in relation to Kenya had not been explored if it Granger causes the specific dependent variables.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the research methodology, research design, study area, model specification, measurement criteria, target population, sample size, data collection procedures, sources of data collection, data analysis and presentation.

3.1 Research Design

A quantitative research design was adopted for this study. The study utilized use of panel data from 2004 to 2015 since in this period the Kenyan government had undertaken many reforms both in financial institutions and other sectors. A general linear Model was used since it is important over multiple and multivariate regression models, both of which are inherently univariate (single dependent variable) and data tested for stationarity. Scrutiny of data was done to ensure completeness, clarity and consistency.

3.2 Study Area

This study was conducted in Central Bank of Kenya and was be limited to Kenya with a total population of 42.7 million with coverage of 582,650 square kilometers (224,962 square miles). The major activities are agriculture, services and industrialization (KNBS, 2015) with latitude of -0.023559 and longitude of 37.90619300000003. Central Bank of Kenya will form the study point of focus.

3.3 Data Collection Methods

This area highlights the sources of data collection, data collection procedures and instruments of data collections as spelt below.

3.3.1 Sources of Data Collection

The study adopted Secondary data from Central Bank of Kenya, World Development Indicators, World Bank and International Monetary Fund (IMF) inform of journals and other publications on remittances and financial development due to availability of data in terms of access.

3.4 Data Analysis

After data collection, all data was cleaned and coded and a General Linear Model was utilized as it suits the study. This is based on assumption that, the observations are independent of one another implying the samples were done at random, each dependent variable is linearly related to independent variable as indicated in Mugenda and Mugenda (2013) in order to establish the relationship between independent variable of Diaspora remittances and dependent variable of financial development in Kenya within keen interest on remittances and credit to private sector, access to financial services and bank deposits. The following model was used after recasting the previous model;

$$Y = \beta X + U$$

Where;

Y was a matrix with series of the multivariate measurements that included; access to financial services, bank deposit and credit to private.

X represented the predictor variable in this case remittances while U represented the matrix containing regression errors.

Unit root test.

In order to test for stationarity to reduce chances of errors as a result of unit roots contained in the variables under study, the researcher adopted Augmented Dickey- Fuller test which assumes that the errors are distributed identically and independently as previously adopted in Mwangi and Mwenda (2015). This is key in that application of non-stationary data in conducting estimation may result into spurious results, Odondo (2017).

Granger Causality and co-integration test

The above tests were adopted through application of Vector Autoregressive regression (VAR) in order to understand the movements between variables as previously adopted by (Odondo, 2017:42; Nyeadi and Atiga, 2014: 145). The co-integration was tested through Johansen (1992) and Johansen and Juselius (1992) framework. The co- integration tests were largely utilized by (Odondo, 2017; Nyeadi and Atiga, 2014).

The Granger –Causality model adopt the format below

$$Y_t = \alpha_0 + \sum_{i=1}^m \beta_i Y_{t-i} + \sum_{i=1}^n \sigma_i X_{t-i} + \mu_t$$

Where if X_t Granger causes Y_t , then, the current values of Y_t are determined by past values of X_{t-1}

3.5 Data Presentation

Final results were presented clearly in tables.

CHAPTER FOUR

DATA FINDINGS, ANALYSIS AND DISCUSSION

4.1 Introduction

In this chapter, the study provides an in depth analysis of the existing objectives collected from primary and secondary data as described below;

4.2 Primary Data

The study did not utilize primary data.

4.3 Secondary Data

Secondary data related to an annual compilation of performance of financial development indicators of access to financial services, credit to private and bank deposits for the years 2004–2016. The study analyzed results from 2004 – 2015 since most of the indicators for 2016 had not been computed. Econometric Views (E-Views) version 8 was used in the analysis of the econometric part of data collection while SPSS (Ver. 22) was used in conducting the GLM analysis.

4.3.1 Descriptive Statistics

Descriptive statistics for remittances and financial development indicators for the period of study are reported in table 4.4.

The mean of all the variables were positive. The variables were not very highly dispersed from the mean except in the case of access to financial services where the dispersion was given by 6.212 percentage points. All of the variables in question appeared to be normally distributed judging by the small scores for skewness and kurtosis in each case. These were further corroborated by the non-significant Jargue–Bera statistics for the variables.

Table 4.4
Descriptive Statistics of the Study Variables (%)

	Access to financial services	Bank deposit	Credit to private	Remittance
Mean	8.331	36.763	128.147	2.160
Median	6.495	36.405	27.258	2.250
Maximum	21.250	42.970	34.684	2.460
Minimum	2.380	32.910	22.888	1.710
Std. Dev.	6.212	3.370	3.992	0.268
Skewness	0.821	0.614	0.326	-0.731
Kurtosis	2.529	1.922	1.922	2.037
Jarque-Bera	1.460	1.085	0.794	1.531
Probability	0.482	0.581	0.672	0.465
Sum	99.970	441.14	337.763	25.920
Sum Sq. Dev.	424.4153	124.94	175.318	0.791
Observations	12	12	12	12

The correlation statistics presented in Table 4.5 show that remittances correlated positively with access to financial services ($r=0.168$, $p>0.05$) and credit to private ($r=0.603$, $p<0.05$). The correlation between remittances and credit to private was significant indicating that the assumption that remittances have no association with credit to private cannot be sustained. The correlation between remittances and bank deposits was negative though not significant ($r=-0.124$, $p>0.05$).

**Table 4.5
Correlations**

	Access to financial services	Bank deposit	Credit to private	Remittances
Access to financial services	1			
Bank deposit	.470	1		
Credit to private	.584*	.330	1	
Remittances	.168	-.124	.603*	1

*. Correlation is significant at the 0.05 level (2-tailed).

4.3.2 Testing for the Assumptions of multiple regression for Time Series Data

Considering that the data represented a time series, it was necessary to test for expected assumptions and then transform the data accordingly. In this regard, data were tested for non-stationarity, co integration, autocorrelation, and heteroskedasticity.

a) Non-Stationarity

Formal investigation for stationarity among the four variables under study was done using the Augmented Dickey Fuller (ADF) test in E-views version 8. The ADF tested the null hypothesis of unit root and hence non-stationarity in each of the four series. Upon performing the test, the test statistics derived were compared with the critical values at 5% level. A significant ADF implied stationarity (i.e. ADF value greater than critical) otherwise the series was differenced once or twice accordingly.

Results presented in Table 4.6 displays statistics for level, first difference and second difference (where necessary). From these results, all the four variables had unit roots at level implying that the original data were non-stationary for all the variables. Credit to private achieved stationarity

after the first differencing but access to financial services, bank deposit, and remittances achieved stationarity after the second differencing.

Table 4.6
Results of Unit Root Tests

Variable	ADF Test	Test Statistic	5% Critical value
Access to financial services	At Level	0.656788	-3.259808
	First Difference	-1.445157	-3.320969
	Second Difference	-3.573272	-3.320969
Bank deposit	At Level	-1.615834	-3.175352
	First Difference	-2.578161	-3.320969
	Second Difference	-2.963656	-2.841819
Credit to private	At Level	0.095689	-3.175352
	First Difference	-4.044661	-3.320969
Remittances	At Level	-1.040189	-3.175352
	First Difference	-2.315657	-3.212696
	Second Difference	-4.087918	-3.259808

The implication of these results is that the data had to be transformed as D (access to financial services 2); D (Bank deposit, 2); D (credit to private); and D (remittances, 2) before being subjected to further use in the analysis.

b) Johansen's Test for Co integration

Co-integration was conducted on the transformed data to determine the long run relationship between remittances and each of financial development indicators of access to financial services, bank deposit and credit to private.

Results presented in Table 4.7 revealed the following. Trace statistics (likelihood ratio) for D (Access to financial services, 2) and D (Bank deposit, 2) did not exceed critical values at 5 levels. This indicates that financial development in terms of access to financial services and bank

deposits respectively don't move together with remittances in the long run. However, the trace value for D (credit to private) exceeded the critical value at 5% level indicating that there was co integration between credit to private and remittances.

Table 4.7
Results of Johansen's Cointegration Test

Variable	Hypothesized No. of CE(s)	Eigen Values	Trace Stat	5% Critical value	Prob....
D(Access to financial services , 2)	None	0.798157	13.98994	15.49471	0.0832
	At most 1	0.137979	1.187806	3.841466	0.2758
D(Bank deposit, 2)	None	0.807398	15.28032	15.49471	0.0737
	At most 1	0.231188	2.103271	3.841466	0.1470
D(credit to private)	None	0.696991	15.66129	15.49471	0.0472
	At most 1	0.534046	6.109341	3.841466	0.0134

Comparable Variable: Remittances

c) Multi-collinearity

Multi-collinearity was assessed by regressing each of the financial development indicators on remittances. Table 4.8 presents the auxiliary R-squared statistics and variance inflation factors (VIF) for each of the three equations. The small proportions of the R-squared values and the VIF for all variables indicated that data had no issues of multi-collinearity.

Table 4.8**Results of Multi collinearity Assessment**

Variable	Auxiliary R²	VIF
D(Access to financial services,	- 0.0142	1.000
2)	0.0143	1.000
D(Bank deposit, 2)	0.0594	1.000
D(credit to private)		

d) Auto correlation

The Durbin–Watson statistics associated with the least squares estimates for each of the regression of the financial development indicators with remittances were used to test for the presence of autocorrelation. For this test, the null hypothesis in each case was that of no autocorrelation. Durbin – Watson statistics in the range 1.5 to 2.5 were deemed to signify lack of auto-correlation. Each variable was regressed against all the other variables in order to determine the Durbin – Watson statistic. Results given in Table 4.9 reveal that there were no issues of auto-correlation.

Table 4.9**Results of the Durbin-Watson Test**

Variable	Durbin-Watson Stat	Conclusion
D(Access to financial services,	1.988	No autocorrelation
2)	2.218	No autocorrelation
D(Bank deposit, 2)	1.689	No autocorrelation
D(Credit to private)	1.914	No autocorrelation
D(Remittances, 2)		

e) Heteroskedasticity

Heteroskedasticity was tested using the White’s test that tested the null hypothesis that there was no presence of heteroskedasticity. Heteroskedasticity was of concern in the present study due to the fact that the sample of secondary data was small. Results presented in Table 4.10 show that

none of the indicators of financial development had significant statistics. Based on these results, the null of homoscedasticity was upheld meaning that error terms needed not be adjusted.

Table 4.10
Test of Presence of Heteroskedasticity

Variable				
D(Access to financial services, 2)	F-statistic	0.357212	Prob. F(2,7)	0.7117
	Obs*R-squared	0.926089	Prob. Chi-square(2)	0.6294
	Scaled explained SS	1.862345	Prob. Chi-square(2)	0.3941
D(Bank deposit, 2)	F-statistic	0.076206	Prob. F(2,7)	0.9274
	Obs*R-squared	0.213093	Prob. Chi-square(2)	0.8989
	Scaled explained SS	0.124994	Prob. Chi-square(2)	0.9394
D(Credit to private)	F-statistic	1.218024	Prob. F(2,7)	0.3516
	Obs*R-squared	2.581640	Prob. Chi-square(2)	0.2750
	Scaled explained SS	1.056047	Prob. Chi-square(2)	0.5898

4.4 Results of Tests of Hypotheses

Four hypotheses were formulated for purposes of the present study. Multivariate analysis using the generalized linear model (GLM) was conducted. The differenced variables of access to financial services, bank deposit and credit to private sector were entered as dependent variables while the transformed variable of remittances was entered as the covariate. Parameters were then estimated. First the Wilk's Lambda test was run at the α -level of 0.05 to examine whether there were significant differences among the remittances, D(remittance, 2) on the linear combination of the three measures of financial development. Results presented in Table 4.11 reveal that the test was not significant, Wilk's $\Lambda = 0.704$, $F(3, 6) = 0.840$, $p > 0.05$.

Table 4.11**Multivariate Tests^a**

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.253	.677 ^b	3.000	6.000	.597
	Wilks' Lambda	.747	.677 ^b	3.000	6.000	.597
	Hotelling's Trace	.339	.677 ^b	3.000	6.000	.597
	Roy's Largest Root	.339	.677 ^b	3.000	6.000	.597
D(Remittances, 2)	Pillai's Trace	.296	.840 ^b	3.000	6.000	.519
	Wilks' Lambda	.704	.840 ^b	3.000	6.000	.519
	Hotelling's Trace	.420	.840 ^b	3.000	6.000	.519
	Roy's Largest Root	.420	.840 ^b	3.000	6.000	.519

a. Design: Intercept + D(Remittances, 2)

b. Exact statistic

The implication of the non-significant F value is that there were no significant differences among remittances with regards to the linear combination of the three measures of financial developments.

The Univariate ANOVA results presented in Table 4.12 confirm that Access to financial services, bank deposits and credit to private were not significantly different across the remittances. The three ANOVA values were not significant at the 0.05 alpha levels. Consequently, regression models pitting the three variables to Diaspora remittance were not statistically adequate.

Table 4.12**Tests of Between-Subjects Effects**

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	D(Access to financial services, 2)	65577.932 ^a	1	65577.932	.407	.541
	D(Bank deposit, 2)	2.634 ^b	1	2.634	.117	.741
	D(Credit to private)	8.176 ^c	1	8.176	2.189	.177
Intercept	D(Access to financial services, 2)	84805.232	1	84805.232	.527	.489
	D(Bank deposit, 2)	.008	1	.008	.000	.986
	D(Credit to private)	5.912	1	5.912	1.583	.244
D(Remittances, 2)	D(Access to financial services, 2)	65577.932	1	65577.932	.407	.541
	D(Bank deposit, 2)	2.634	1	2.634	.117	.741
	D(Credit to private)	8.176	1	8.176	2.189	.177
Error	D(Access to financial services, 2)	1288211.008	8	161026.376		
	D(Bank deposit, 2)	180.447	8	22.556		
	D(Credit to private)	29.877	8	3.735		
Total	D(Access to financial services, 2)	1451004.595	10			
	D(Bank deposit, 2)	183.082	10			
	D(Credit to private)	45.122	10			
Corrected Total	D(Access to financial services, 2)	1353788.939	9			
	D(Bank deposit, 2)	183.080	9			
	D(Credit to private)	38.053	9			

a. R Squared = .048 (Adjusted R Squared = -.071)

b. R Squared = .014 (Adjusted R Squared = -.109)

c. R Squared = .215 (Adjusted R Squared = .117)

4.4.1 Influence of Diaspora Remittances on Credit to Private

The first specific objective of the present study sought to examine the influence of Diaspora remittances on credit to private sector. Consequently, the researcher formulated the null hypothesis that Diaspora remittances have no influence on credit provided to the private sector in Kenya against, the alternative that, Diaspora remittances have an influence on credit provided to the private sector in Kenya. Credit to private was therefore modeled on remittances using the linear model:

$$\text{Credit to private} = \beta_1 \text{Diaspora remittances} + \varepsilon_1$$

Where; β_1 represents the influence Diaspora remittances have on credit provided to the private sector; while ε_1 represents any effects on credit to private that may not be attributable to Diaspora remittances. Results of the parameter estimates presented in Table 4.13 revealed that Diaspora remittances do not have a significant influence on credit given to private sector ($B=4.096$, $p>0.05$). The null hypothesis that Diaspora remittances have no statistically significant influence on credit to private sector in Kenya was therefore up held. The implication here is that not enough evidence exists to suggest that remittances could cause improvements in domestic credit provided to the private sector.

Table 4.13

Parameter Estimates

Dependent Variable	Parameter	B	Std. Error	t	Sig.
D(Access to financial services, 2)	Intercept	-92.362	127.272	-.726	.489
	D(Remittances, 2)	-366.802	574.780	-.638	.541
D(Bank deposit, 2)	Intercept	-.028	1.506	-.018	.986
	D(Remittances, 2)	2.324	6.803	.342	.741
D(Credit to private)	Intercept	.771	.613	1.258	.244
	D(Remittances, 2)	4.096	2.768	1.480	.177

4.4.2 Influence of Diaspora Remittances on Access to Financial Services

The second specific objective of the present study sought to establish the influence of Diaspora remittances on access to financial services in Kenya. Consequently, the researcher posited that Diaspora remittances have no influence on access to financial services in Kenya. Access to financial services was regressed on remittances using the following linear model:

$$\text{Access to financial services} = \beta_2 \text{Diaspora remittances} + \varepsilon_2$$

Where; β_2 represents the influence Diaspora remittances have on access to financial services; while ε_2 represents any effects on access to financial services that may not be attributable to Diaspora remittances. Results of the parameter estimates presented in Table 4.13 show that Diaspora remittances do not have a significant influence on access to financial services ($B = -366.802, p > 0.05$). The implication is that any claim that remittances have no effect on access was sustained.

4.4.3 Influence of Diaspora Remittances on Bank Deposits in Kenya

The third objective sought to establish the influence of Diaspora remittances on bank deposits in Kenya. Consequently, the researcher formulated the null hypothesis that Diaspora remittances have no influence on bank deposits in Kenya against, the alternative that, Diaspora remittances do influence bank deposits in Kenya. The bank deposit variable was therefore regressed on the remittances variable using the linear model:

$$\text{Bank deposit} = \beta_3 \text{Diaspora remittances} + \varepsilon_3$$

Where; β_3 represents the influence Diaspora remittances have on bank deposits; while ε_3 represents any effects on bank deposits that could not be attributed to Diaspora remittances. Results of the parameter estimates presented in Table 4.13 show that Diaspora remittances have no significant influence on bank deposits made ($B=2.324, p > 0.05$). The conclusion here is that no sufficient evidence is presented to warrant rejection of any claim that is made to the effect that; remittances have no effect on bank deposits.

The findings in the present study showing that remittances have no effects on credit to private, access to financial services, and bank deposits, supports several other findings that exist in literature. For instance, Jepchumba (2013) argues that Diaspora remittances may only have

impacts on advanced economies that have good financial systems. Similar views on remittances lacking impacts on financial development are shared by others (Ahmed, 2010, Feeny, Iamsiraroj & Ccgillirray, 2014).

The findings in the present study shed more light with regard to the Diaspora remittances and financial development from a developing economy like Kenya. Controversy still surrounds the utility of Diaspora remittances with several contradicting findings. Whereas some scholars argue that some causality exists between remittances and financial development (Nyeadi & Atiga, 2014; Mwangi & Mwenda, 2015; Ocharo, 2014). Others argue to the contrary (Ahmed, 2010; Rahman, 2009; Siddique et al., 2011).

These mixed findings are consistent with others existing in literature. Fromentin (2017) for instance, applied Pooled Mean Group approach for period 1974-2014 and found positive results on long-run relationship between remittances and financial development. On credit to private sector, Nana *et al.*, (2016) tested the association between remittances and credit to private sector for 50 developing nations using three methods of fixed effect method, random effect method and vector error correlation from 1990-2011 and results were positive, Githaiga and Kabiru (2014) while using General method of methods to test the same association and found negative correlation of (-0.113*). On the contrary, Calderon *et al* 2007; Aggarwal *et al*, 2011 and Ajilore and Ikhide (2012) found negative association between remittances and credit to private sector. To test the association between remittances and bank account opening, Gemechu and Martinez (2014) on employing World Bank data found positive results, Nana *et al.*, (2016); Dermigue-Kunt *et al* (2010) and Cooray (2010) both found positive results. However, this contradicts a study by Richard and Fabrizio (2011); Mogilevsky and Atamanov (2009) and Brown, Fabrizio and Fayad (2013) who found negative results. On whether remittances and financial developments are complements or substitutes, Nyamongo *et al* (2012) found the two being complements, Cheronno (2013) found them to be substitutes.

4.4.4 Testing for Causal Relationship between Diaspora Remittances and Financial Development

The study used E-views version 8, pair wise Granger causality tests involving each of the three measures of financial development and Diaspora remittances to test this.

a) Diaspora Remittances do not Granger cause Access to financial services

Granger causality between remittance and access was tested by using the differenced variables D (Access, 2) and D (Remittances, 2) as the group statistics for Granger causality test. Results presented in Table 4.14 show that the hypothesis that D (Remittance, 2) does not Granger cause D (Access, 2) could not be rejected ($F=0.7658$, $p>0.05$). Similarly, the hypothesis that D (Access to financial services, 2) does not Granger cause D (Remittance, 2) could also not be rejected ($F=0.01567$, $p>0.05$). The implication of this result is that prior values of remittance cannot be used to predict future values of access and vice versa.

Table 4.14

Results for Granger Causality test on Access to financial services

Pairwise Granger Causality Tests

Date: 11/18/17 Time: 14:00

Sample: 2004 2015

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
D (Remittance, 2) does not Granger Cause D (Access to financial services, 2)	8	0.76579	0.5387
D (Access to financial service, 2) does not Granger Cause D (Remittance, 2)		0.01567	0.9845

b) Diaspora Remittances do not Granger cause Bank Deposits

The differenced variables D (Bank deposit, 2) and D (remittance, 2) were used to test Granger Causality between remittances and bank deposits. Results presented in Table 4.15 reveal that the hypothesis that D (remittance, 2) does not Granger cause D (Bank deposits, 2) could not be rejected ($F = 3.855$, $p>0.05$). Similarly, the hypothesis that D (Bank, deposit, 2) does not Granger cause D (remittance, 2) could not be rejected ($F=0.369$, $p>0.05$). Prior values of remittance can therefore not be used to predict future values of bank deposits and vice versa.

Table 4.15

Results for Granger Causality test on bank deposits

Pair wise Granger Causality Tests

Date: 11/18/17 Time: 14:01

Sample: 2004 2015

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
D(Remittance, 2) does not Granger Cause D(Bank Deposit, 2)	8	3.85493	0.1483
D(Bank Deposit, 2) does not Granger Cause D(Remittance, 2)		0.36867	0.7192

c) Diaspora Remittances do not Granger cause Credit to Private sector.

Granger Causality between Diaspora remittances and credit to private was tested by using the first difference values for credit to private, D(credit to private) and the 2nd difference values for remittance, D(remittance, 2). Results shown in Table 4.16 reveal that the hypothesis that Diaspora remittance does not Granger cause credit to private could not be rejected (F=0.0882, p>0.05). In a similar fashion, the hypothesis that credit to private does not Granger cause Diaspora remittances could also not be rejected (F=0.121, p>0.05). Prior values of remittance can therefore not be used to predict credit to private and vice versa.

Table 4.16

Results for Granger Causality test on credit to private sector.

Pairwise Granger Causality Tests

Date: 11/18/17 Time: 14:03

Sample: 2004 2015

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
D(Remittance, 2) does not Granger Cause D(Credit to private)	8	0.08827	0.9178
D(Credit to private)does not Granger Cause D(Remittance, 2)		0.12080	0.8903

The conclusion drawn from these results is that Diaspora remittances do not Granger cause financial development as measured by access to financial services, bank deposit and provision of credit to private sector. Consequently, it would be wise to argue that prior levels of Diasporas remittance cannot be relied upon to predict future levels of financial development. Similarly prior levels of financial development are not a sure way of projecting future trends in Diaspora remittances.

The findings from the present study indicating, that Diaspora remittances lack Granger causality on financial development is perhaps surprising given that it contradicts a number of existing empirical studies (Githaiga & Kabiru, 2014; Mwangi & Mwenda, 2015; Nyeadi& Atiga, 2014; Ocharo, 2014). The reasons for this contradictions though not clear could however possibly be explained by among other factors, the context of the study; the focus of the study and the design used. Githaiga and Kabiru (2014) for instance focused specifically on remittances and bank deposits while using correlations. It is important to note that whereas Githaiga and Kabiru report negative correlations between the two constructs, it cannot be assumed that these correlations imply causality between the two. The present study focused on remittances and financial development from a causal perspective in which case bank deposits were just but a measure of financial development. The contradiction between the findings of the present study and those of Githaiga and Mwangi could therefore be explained by the design used.

Mwangi and Mwenda (2015) focused on Granger Causality between remittances and economic growth. The point of departure between the two scholars' study and the present one is therefore on the focus with the present study being keener on financial development as opposed to economic growth. Nyeadi and Atiga (2014) on the other hand focused on remittance and economic growth from a Ghanaian perspective. The variance between Nyeadi and Atiga's study and the present study is therefore the study context and focus which might explain the

contradictory studies. The argument here is that the causal effect of remittance largely depends on the context and focus of the study undertaken.

Mahedi (2014) his analysis on the role of Diaspora remittances on economic growth in Bangladesh economy and using a Johansen co-integration test along with vector error correction model and Granger Causality tests using annual secondary data for 1981 to 2013 to reveal both the short-run and the long-run association between remittance-growth and remittance-financed development, the outcome indicated a long run positive relationship between Diaspora remittances and gross domestic products (GDP) an indicator that remittances are more likely to contribute to longer-term growth in Bangladesh. It further indicated that remittances have a significant positive effect on financial development.

Coulibaly (2015) while utilizing a system approach and Granger causality testing approach that is based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values for 1980-2010 covering 19 Sub-Saharan countries results indicated that liquid liabilities when used as a proxy for financial development remittances positively influences financial development only in Niger, Senegal, Sierra Leone and Sudan and financial development impacts remittances in Gambia. On the contrary, using credit as a measure of financial development credit positively influences remittances only in Sudan and financial development does not influence remittances in any country and therefore the causality link between remittances and financial development differs across countries in SSA and is a sensitive indicator of financial development.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of the present study was to examine the influence of Diaspora remittances on financial development in Kenya. The study therefore examined CBK records on Diaspora remittances measured via percentage of GDP, and records on financial development measured via credit to private sector, access, and bank deposits. Moreover, the study examined sampled CBK employees' views, on existing frameworks for financial development and how internal factors other than legal factors influences financial development. This chapter therefore presents a summary of the study findings, together with conclusions and recommendations made.

5.2 Summary of Findings

The main finding of the study was that Diaspora remittances had no significant influence on financial development in Kenya and therefore prior values of Diaspora remittances may not predict future values of financial development. The summary of findings focuses on the specific objectives that guided the study.

5.2.1 Influence of Diaspora Remittances on Credit to Private Sector

The first objective of the study sought to determine the influence of Diaspora remittances on credit provided to the private sector. Using the generalized linear model (GLM), the Wilk's lambda test revealed that there were no significant differences among remittances with regards to a linear combination of measures that included credit to private. The Univariate ANOVA results confirmed that the linear regression model pitting credit to private with Diaspora remittances was not statistically viable. Results of the Parameter estimates revealed that Diaspora remittances had no significant influence on credit to private sector.

5.2.2 Influence of Diaspora Remittances on Access to Financial Services

The second objective of the study sought to establish the influence of Diaspora remittances on access to financial services in Kenya. Using the generalized linear model (GLM), the Wilk's lambda test once again revealed that there were no significant differences among remittances

with regards to a linear combination of measures that included access. The Univariate ANOVA results confirmed that the linear regression model pitting access with Diaspora remittances was also not statistically viable. Results of the Parameter estimates further revealed that Diaspora remittances had no significant influence on access to financial services.

5.2.3 Influence of Diaspora Remittances on Bank Deposits in Kenya

The third objective of the study focused on examining the influence of Diaspora remittances on bank deposits in Kenya. The Wilk's lambda test revealed that there were no significant differences among remittances with regards to a linear combination of measures that included bank deposits. The Univariate ANOVA results further confirmed that the linear regression model pitting bank deposits with Diaspora remittances was not statistically suitable. Results of the Parameter estimates revealed that Diaspora remittances had no significant influence on bank deposits in Kenya

5.2.4 Causal Relationship between Diaspora Remittances and Financial Development in Kenya.

This test was conducted on its own in order to give green light on whether there is a causal relationship between Diaspora remittances and financial development by testing the causality of each parameter of credit to private sector, access to financial services and bank deposits. Using E-views version 8, pair wise Granger causality tests involving each of the three measures of financial development and Diaspora remittances were run. The study found out that Granger causality did not exist between Diaspora remittances and access to financial services. Granger causality was also not found between Diaspora remittances and bank deposits, and between Diaspora remittances and credit to private sector. The finding implied that Granger causality does not exist between Diaspora remittances and financial development meaning that prior levels of Diaspora remittances were not predictors of future levels of financial development and vice versa.

5.3 Conclusions

In view of the findings made, the following conclusions were drawn

1. Diaspora remittances do not necessarily determine the direction financial development in Kenya in terms of; credit given to private sector; access to financial services; and bank deposits takes. This does not however, rule out a possibility of future studies finding contrary results considering different contexts and more data.
2. Prior amounts of Diaspora remittances are not ideal to be used as predictors of future values of financial development. Similarly, prior values of financial development should not be pegged upon to predict future values of Diaspora remittances. This however contradicts some findings in extant literature.
3. There is need to examine the contribution of contextual factors such as corporate social responsibility, work environment, management style, technology and politics towards the relationship between Diaspora remittances and financial development.

5.4 Limitation of the Study

The study sought to consider panel data from 2004 -2016 however due to non-availability of data on certain variables 2016 was excluded as previously indicated.

The study did not consider remittances from illegal channels due to lack of data by the Central bank on the same since some Kenyans continue to exploit use of illegal means which tend to be high despite Central Bank increased measures to curb the same.

Financial depth could not be studied on its own as credit to private sector and financial depth are more similar and may be used to refer to the other.

5.5 Recommendations of the Study

In view of the conclusions made above, the following recommendations were made;

5.5.1 Recommendations for Theory and Practice

The government of Kenya through Central Bank should initiate measures of tracking down remittances from illegal channels and update on the same. This could possibly be responsible for the findings that Diaspora remittances have no influence on financial development, which contradicts other existing findings.

Diaspora remittances should be incorporated in financial statements of particular periods only since evidence from the present study tends to suggest that previous amounts of Diaspora remittances may not be ideal for use to predict financial development.

The Central bank of Kenya and Kenya National Bureau of statistics should continuously provide updates on financial development parameters to GDP since some parameters like level of bank deposits to GDP did not capture data for 2016 and the same should seasonally be adjusted.

5.5.2 Recommendations for Future Research

Future researchers should research on the influence of Diaspora remittances on financial development where credit to public sector should be used instead of credit to private sector.

Future researchers should tailor their studies to certain variable like level of bank deposits and access to banking services.

Future researchers should study on why in some years, Diaspora remittances is higher while credit to private sector, level of bank deposits is low as this could add value to their studies and Kenya at large as this could have contributed to understanding why the non-stationarity of data in this study exists.

Future researchers should consider the moderating influence of contextual factors on the relationship between Diaspora remittances and financial development, which would factor in the contribution of other key factors.

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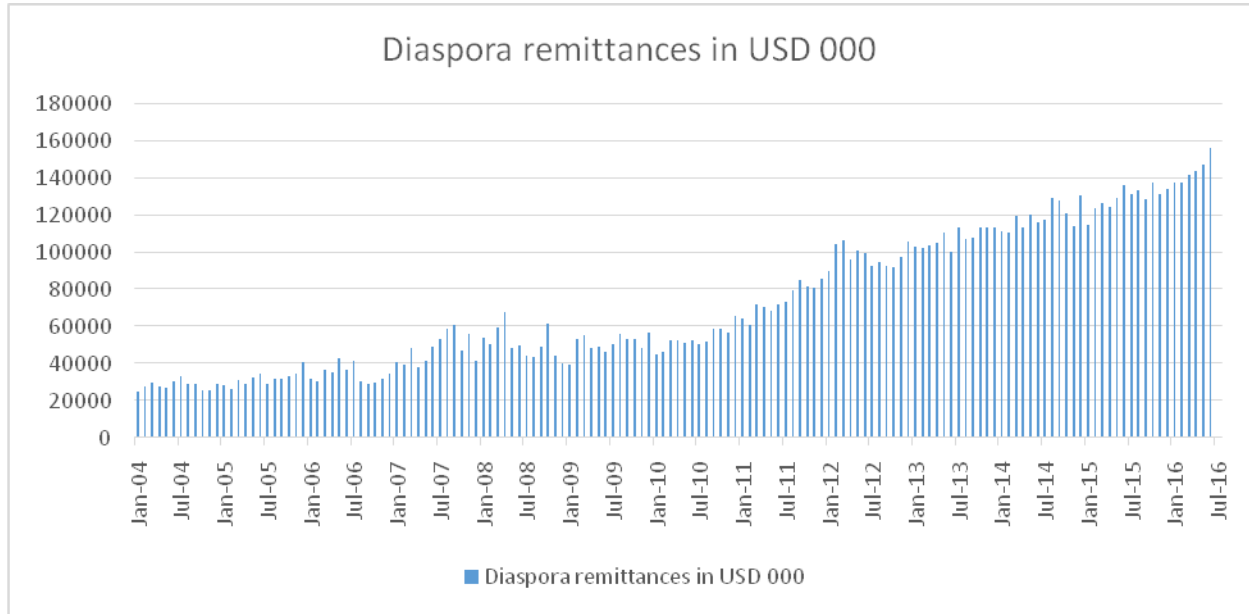
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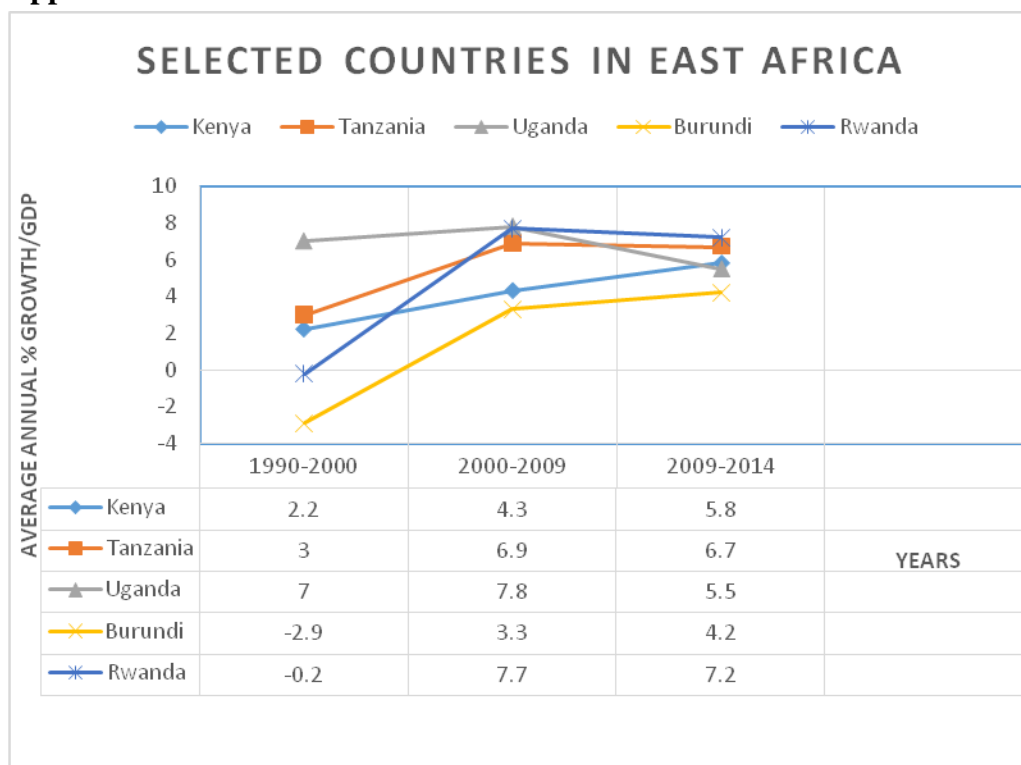
APPENDICES

Appendix 1: Central Bank of Kenya Diagram on Remittances Data from 2004-2016



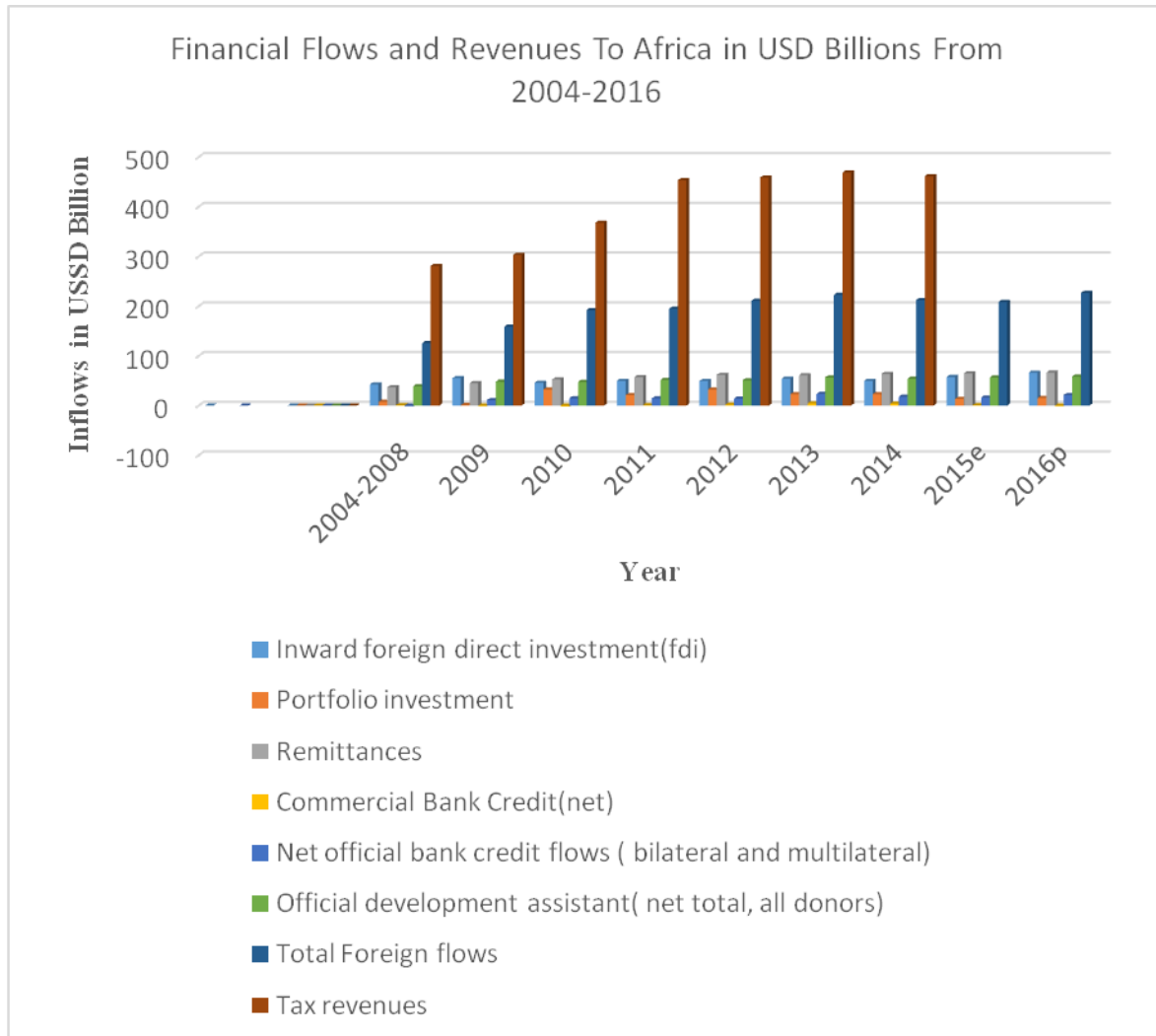
Source: Central Bank of Kenya Data from 2004 to 2016.

Appendix 2: Data on Remittances to East African Countries



Source: Adopted from World Development Indicators 2016 from World Bank and Researcher's input.

Appendix 3: Data on Financial Flows and Revenue to Africa in USD Millions



Note; e- represent ODA estimates while P represent projections.

Source; African economic outlook @ AFDB, OECD, UNDP 2016; External Financial Flows and Tax Revenue for Africa and researchers input.

Appendix 4

Central Bank of Kenya data on Diaspora remittances-monthly

month /year	Diaspora remittances in USD 000
Jan-04	25154
Feb-04	27676
Mar-04	29944
Apr-04	27773
May-04	26931
Jun-04	30047
Jul-04	33187
Aug-04	28894
Sep-04	28894
Oct-04	25223
Nov-04	25473
Dec-04	29130
Jan-05	28564
Feb-05	26056
Mar-05	31219
Apr-05	29216
May-05	32358
Jun-05	34360
Jul-05	29133
Aug-05	31759
Sep-05	31616
Oct-05	33037
Nov-05	34282
Dec-05	40557
Jan-06	31506
Feb-06	30283
Mar-06	36354
Apr-06	35369
May-06	42427
Jun-06	36667
Jul-06	41065
Aug-06	30587
Sep-06	28841
Oct-06	29633

Nov-06	31403	
Dec-06	34459	
Jan-07	40930	
Feb-07	39533	
Mar-07	48562	
Apr-07	38251	
May-07	41163	
Jun-07	48643	
Jul-07	53350	
Aug-07	58803	
Sep-07	60575	
Oct-07	46848	
Nov-07	55564	
Dec-07	41421	
Jan-08	53925	
Feb-08	50382	
Mar-08	59344	
Apr-08	67872	
May-08	48538	
Jun-08	49490	
Jul-08	44137	
Aug-08	43388	
Sep-08	48953	
Oct-08	61113	
Nov-08	43970	
Dec-08	40129	
Jan-09	39535	
Feb-09	53353	
Mar-09	55361	
Apr-09	48117	
May-09	49180	
Jun-09	46347	
Jul-09	50372	
Aug-09	55947	
Sep-09	53347	
Oct-09	53037	
Nov-09	48231	
Dec-09	56329	
Jan-10	45117	

Feb-10	46423	
Mar-10	52309	
Apr-10	52679	
May-10	51172	
Jun-10	52541	
Jul-10	50652	
Aug-10	51993	
Sep-10	58557	
Oct-10	58503	
Nov-10	56380	
Dec-10	65617	
Jan-11	64139	
Feb-11	60759	
Mar-11	71577	
Apr-11	70071	
May-11	68124	
Jun-11	71888	
Jul-11	72797	
Aug-11	79563	
Sep-11	84854	
Oct-11	81311	
Nov-11	80802	
Dec-11	85244	
Jan-12	89755	
Feb-12	103970	
Mar-12	106198	
Apr-12	95625	
May-12	100995	
Jun-12	99488	
Jul-12	92736	
Aug-12	94819	
Sep-12	92519	
Oct-12	91627	
Nov-12	97504	
Dec-12	105656	
Jan-13	102970	
Feb-13	102372	
Mar-13	103393	
Apr-13	104993	

May-13	110150	
Jun-13	99809	
Jul-13	112834	
Aug-13	107049	
Sep-13	107452	
Oct-13	112919	
Nov-13	113420	
Dec-13	113216	
Jan-14	110969	
Feb-14	110421	
Mar-14	119585	
Apr-14	113409	
May-14	119657	
Jun-14	116064	
Jul-14	117101	
Aug-14	128826	
Sep-14	127399	
Oct-14	120907	
Nov-14	113972	
Dec-14	130172	
Jan-15	114642	
Feb-15	123236	
Mar-15	126259	
Apr-15	124473	
May-15	129101	
Jun-15	135963	
Jul-15	131055	
Aug-15	132949	
Sep-15	128484	
Oct-15	137146	
Nov-15	130718	
Dec-15	134005	
Jan-16	137494	
Feb-16	136979	
Mar-16	141107	
Apr-16	143526	
May-16	146760	
Jun-16	156049	

Appendix 5

REMITTANCES INFLOW AS PERCENTAGE OF GDP IN KENYA-FREQUENCY-ANNUAL

SOURCE

World Bank.

Kenya remittances, percentage of GDP –data, chart/The global economy.com/remittances_remittances_percentage_GDP.

Series information: DD0I11KEA156NWDB-FRED

YEAR	% TO GDP
2004	2.33
2005	2.27
2006	2.21
2007	2.02
2008	1.86
2009	1.71
2010	1.71
2011	2.23
2012	2.4
2013	2.37
2014	2.35
2015	2.46
2016	2.45

Appendix 6

BANK DEPOSITS PERCENTAGE OF GDP IN KENYA- ANNUAL

YEAR	% TO GDP
2004	33.1
2005	32.91
2006	33.55
2007	33.94
2008	37.19
2009	36.87
2010	40.46
2011	41.71
2012	42.97
2013	35.64
2014	36.44
2015	36.37
2016	

SOURCE: World Bank

Fred.stiouis.org

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Appendix7

CREDIT TO PRIVATE SECTOR AS PERCENTAGE OF GDP-ANNUAL

YEAR	% TO GDP
2004	27.29
2005	26.28
2006	22.89
2007	23.04
2008	25.80
2009	25.02
2010	27.23
2011	30.57
2012	29.54
2013	31.71
2014	34.14
2015	34.68
2016	33.06

Source: World Development Indicators as at 18/09/2017.

Appendix 8

ACCESS: No.of bank branches for Kenya per 100,000 adults

YEAR	Units per 100,000 adults
2004	2.98
2005	2.87
2006	2.99
2007	3.68
2008	4.25
2009	4.63
2010	4.78
2011	5.06
2012	5.37
2013	5.5
2014	5.73
2015	5.85
2016	

Appendix 9

ACCESS: No.of bank accounts opening in Kenya per 1,000 households

YEAR	Units per 1000 adults
2004	122.69
2005	149.03
2006	160.46
2007	193.34
2008	376.64
2009	513.34
2010	513.34
2011	598.61
2012	647.54
2013	867.81
2014	1095.27
2015	1315.63
2016	

SOURCE: IMF Financial Access Survey.

Release: Global Financial Development.

Appendix 10

DATA COLLECTION SCHEDULE FOR SECONDARY DATA.

Source Document	Data to be collected
Journals	Method used, year of publication, Author(s), Method, findings and conclusion and area research was conducted
Magazines	Method used, year of publication, Author(s), Method, findings and conclusion and area research was conducted
IMF Data base	Remittances figures and area research was conducted
World Bank database	Data on remittances, access, bank deposits etc.
Central Bank data base	Data on remittances, access, bank deposits etc.
World Development indicators	Data on remittances, access, bank deposits etc.
Internet	Journals, periodicals and other publications
Working paper	Method used, year of publication, Author(s), Method, findings and conclusion and area research was conducted