

**EXCHANGE RATE, DIASPORA REMITTANCE AND
BANKING SECTOR DEVELOPMENT IN KENYA**

BY

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DECLARATION

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DEDICATION

I wish to dedicate this project to my Mother Esther .C. Chebet, My wife Irene Kogo, my children Fancy, Fidelma, and Lawrence, and my sisters Carol Koech, and Phyllis Rutto for the support they gave me throughout the study. I can't thank you enough. God bless you.

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ABSTRACT

Banking sector development portends numerous benefits to a nation in as far as harnessing diaspora remittance is concerned. Kenya is considered a developing economy and diaspora remittance has turned out to be one key capital inflow contributing to 4% of the total GDP. However, the banking sector in Kenya is not well developed enough due to the exchange rate regime that is prone to enormous exchange rate variability. This makes it hard to harness diaspora remittance which has turned out to be one of Kenya's foreign capital inflows. Stakeholders concur with the decisiveness and urgency to have the banking sector developed to help it tap diaspora remittance, which is a vital foreign cash inflow. The objectives of the study included; to assess the effect of exchange rate on banking sector development in Kenya, to determine the effect of exchange rate on diaspora remittance in Kenya, to assess the effect of diaspora remittance on banking sector development in Kenya, and to establish the mediating effect of diaspora remittance on the effect of the exchange rate and banking sector development in Kenya. The theories that guided the study were; The Financial Liberalization Theory, Pure Altruism Theory, and Pure Self-Interest. The explanatory research design was used in this study. Secondary data was sourced from the World Bank between 1983 and 2018. The Augmented Dickey-Fuller (ADF) and Philip Perron tests were utilized to test the stationarity of the variables. The results established that exchange rates ($p - value 0.00 < 0.05$) have a significant effect on banking sector development. Similarly, the exchange rate ($p - value 0.021 < 0.05$) has a significant effect on diaspora remittance. Further, diaspora remittance ($p - value 0.001 < 0.05$) has a significant effect on banking sector development. The Sobel test was used to test for mediation and the results ($p - value 0.0304 < 0.05$, $Z 2.1637 > 1.96$) showed that diaspora remittance partially mediates the effect of exchange rates on banking sector development. The study has crucial implications to both theory and practice of finance and macroeconomics. The study contributes to the understanding that exchange rates affect the banking sector through the interplay of diaspora remittance. In addition the study promotes the understanding that exchange rate as a microeconomic variable, and diaspora remittance are important in trying to understand how to develop the banking sector. The study contributes to the theory of financial liberalization that foreign capital inflows, primarily, diaspora remittance is quite significant in influencing banking sector development. The study recommends the need for the government to develop policies that curtail transaction costs, that encourage diversification of economic activities and that provide incentives for value addition, especially for agricultural exports.

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OPERATIONAL DEFINITION OF TERMS

Banking Sector Development: This is the ability of a bank to mobilize resources, identify viable and profitable investment ventures, manage risk, and consequently improve its earnings (Kayode & Adeleye (2016).

Diaspora Remittances: Refers to the transfer of money by a foreign worker, migrants, or migrant groups to his or her home country and is a source of foreign capital. In finance and Economics, Remittances are viewed as Money sent home from immigrants working in counties far away from their home countries and are a source of foreign capital (Kanu et al., 2017).

Exchange Rate: Refers to the rate at which a currency is exchanged for another. It is the nominal exchange rate adjusted for relative purchase power. This refers to the rate at which one currency will be exchanged for another. This factor is a distortion, which affects the value of the total amount received as remittance (Yang & Zeng, 2014)

Inflation: This refers to a persistent increase in the price level of goods and services. Inflation deters or destructs financial intermediation (Nyoni, 2018).

Domestic credit to the private sector Refers to the credit that deposit-taking institutions (Other than the Central Bank) provide to the private sector (Kayode & Adeleye (2016)).

LIST OF ACRONYMS

CBK:	Central Bank of Kenya (CBK)
EMP:	Exchange Market Pressure
GDP:	Gross Domestic Product
IMF:	International Monetary Fund
ODA:	Overseas Development Assistance
RER:	Real Exchange Rate
USA:	United States of America
FDI:	Foreign Direct Investment
REER:	Real Effective Exchange Rate
SDG:	Sustainable Development Goals

CHAPTER ONE: INTRODUCTION

1.0 Introduction

This chapter presents the background to the study, the statement of the problem, the purpose of the study, specific objectives, hypotheses, significance, and scope of the study.

1.1 Background of the Study

The financial system in most African countries is by a larger extent bank-based (Gries et al., 2014). It is for this very reason that ever since the onset of the 1980s, most African countries have been working very hard to develop a strong banking sector by privatizing banks, by recapitalizing banks, and by a larger extent, strengthening the powers of agencies that control the monetary system. According to Rajan and Zingales (2003), strengthening monetary regulatory policies without opening finance is not adequate in fostering the financial system development in its entirety, and banking sector development in particular. The importance of the positive impact of banking sector development on economic growth has been widely acknowledged. Further, aside from the importance of banking sector development in promoting economic growth, a well-developed banking sector highly promotes equality through the provision of opportunities to low incomes earners by permitting them to save and obtain loans. To enhance the banking roles in Africa, most African governments have implemented various reforms in a bid to promoting the effectiveness of their respective banking sectors. For instance, in 2005, the Central Bank of Nigeria offered N25 billion for bank capitalization in a bid of developing the banking sector. Similarly, in 2013, the Bank of Ghana injected GH120

million bank capitalization. In the same breath, Kenya set a minimum of Ksh. 1 billion as bank capital requirement in the year 2008, whereas the Bank of Zambia set K104 billion and K520 billion as minimum capital requirements in 2012. All these efforts were done by the above African countries in a bid to develop their respective banking sectors.

Numerous researchers have attempted inquiries into the reason why there are variations in the level of banking sector development across nations. The argument presented is that the variations, *inter alia*, are occasioned by economic institutions (Le et al, 2016); legal systems (Beck, Demirgüç-Kunt, & Levine (2003a); legal traditions (Beck, Demirgüç-Kunt, & Levine, 2003b); openness to trade and capital (Mahawiya, 2015); economic growth (Le et al., 2016); macroeconomic stability (Boyd, Levine, & Smith, 2001); geographical endowments (Beck et al., 2003a, 2003b); income level (Falahaty & Hook, 2010); culture (Dutta & Mukherjee, 2011); and human capital (Ozkok, 2015). The identification of what contributes to the development of the banking sector is significant because well-developed banking sectors can alleviate poverty, can help in the reduction of both household and firm financial constraints, can promote competition among competing firms, and can promote economic growth, things that less developed banking sectors cannot promote.

In most sub-Saharan countries, the banking sector is underdeveloped despite numerous reforms (David, Mlachila, & Moheput, 2014). According to Standley (2010), compared to other parts of the world, the indicators of banking depth in Sub-Saharan African are low, and perhaps the low levels of institutional quality in the majority of Sub-Saharan countries explain the low levels of the banking sector development. Infact, a 2016 ranking by Krause (2016) depicted that most Sub-Saharan African countries rank very

low as far as institutional quality is concerned. The underdevelopment witnessed in the banking sector in the majority of Sub-Saharan countries partly explains the economic backwardness experienced in the region. Consequently, most of these countries have undertaken numerous actions to reform their respective financial sectors, and in the recent past, some progress has been made. However, much remains undone and needs to be done. The necessity and the urgency of the countries to do more are triggered by the increased level of globalization of the global economy. Aside from posing threat to Africa's further marginalization, globalization offers an opportunity to fasten economic growth and development. In the long run, if macroeconomic stability is achieved, globalization fosters the betterment of living standards. However, the bottom line of such achievements is dependent on the development of the financial sector, and particularly the banking sector, to attract foreign capital inflow and capital investments.

In Kenya, the banking sector, being a segment of the financial sector, plays a vital role in the development of both the financial sector and the economy as a whole. The Kenyan banking system permits the efficient allocation of resources in the economy through individual, business lending, and the use of credit scoring systems. Similarly, banks facilitate the occurrence of business through funds settlement and provision of credit to customers. According to a CBK report, banks provide 24-hour funds access to both individuals and institutions and permit them to safely save and invest. Although the Kenyan financial sector is considered one of the most developed in Africa, the financial development in Kenya, just like in many countries, is by and large bank-based. Therefore, despite the crucial role Kenyan banks play in as far as economic development is concerned, the banking sector in Kenya has not received adequate research coverage to

permit it to exploit its full potential. Particularly, little has been documented on the bank-based part of the financial sector in Kenya. Much emphasis needs to be placed on the banking sector because banks play an intermediation role to channel foreign capital inflow from the diaspora. Similarly, banks have the potential capability of harnessing what is received as foreign capital inflow, in this case, diaspora remittance and redistribute the capital in form of credit.

In finance and Economics, diaspora remittances a transfer of money by a foreign worker to his or her home country and is a source of foreign capital. The North-South Centre of the Council of Europe (2016) defines diaspora's social remittances as ideas, practices, mindsets, world views, values and attitudes, norms of behavior, and social capital (knowledge, experience, and expertise) that the diasporas mediate and either consciously or unconsciously transfer from host to home communities. Diaspora remittances are experiencing growth and due to huge sums involved, it is now being recognized as an important contributor to the recipient country's growth and development.

It is worth noting that diaspora remittance channeled through the banking increases the overall bank deposits which in turn impacts the credit intermediated by the banking sector. Fajnzylber and Lopez (2007) presented an argument that capital inflows to an economy channeled in form of diaspora remittances have an effect of increasing banks' loanable funds. Furthermore, there is the probability that recipients of remittance that are not channeled through the bank will demand services of the banking sector for safe custody (Aggarwal *et al.*, 2011, 2006), which in turn boosts the level of banking activity.

Diaspora remittance transferred across countries has overgrown in the last three decades. For example in the year 1980, total remittances transferred across the globe amounted to \$47 billion, \$102 billion in the year 2013, \$321 billion in the year 2014, \$529 billion in the year 2015, and \$550 billion in the year 2016. Primarily, it is worth taking into account that a sizeable percentage of these capital inflows were channeled to developing countries. In 2014, the developing countries received billion \$372, billion \$401 in 2015, billion \$414 in 2016, and a projected \$436 billion in 2017.

These figures demonstrate the expanded significance of diaspora remittance as an alternative wellspring of finance for development. This economic importance of diaspora remittance is helpful to both the private and the public sectors. Diaspora remittance supplements family units' income in the private sector, which invigorates utilization or consumption thus setting off the interest for extra investments. Similarly, diaspora remittance is likewise a wellspring of seed capital for business people who cannot get regular bank loans. Since a gigantic volume of remittance is sent through financial institutions, the investigation of remittance is of significance to financial institutions. Remittance is a wellspring of income as well as deposits for commercial banks that encourage the transmission of these capital streams.

On a sample of 109 developing countries between the years 1975-2007, Aggarwal, et al. (2011) undertook an examination and found that a 1% increase in diaspora remittance animates 0.36% expansion in bank deposits and 0.29% increment in credit to the private sector. The private sector includes a lot of capital and this is not the situation for developing nations that depend on foreign aid and FDIs for infrastructural advancement.

Through either private direct investments or private-public partnerships, the private sector can outfit global transients' remittance for financial improvement.

Diaspora remittance to Kenya from all source markets have developed generously in the ongoing years and have turned into the fourth-biggest wellspring of foreign trade in East Africa's greatest economy after income from tea, horticulture, and the tourism industry. The Central Bank of Kenya (CBK) conducts an overview or survey on diaspora remittance inflows monthly through the formal channels that incorporate commercial banks and other approved universal remittance service providers in Kenya. Data from CBK shows that Kenyans abroad sent \$1.17 billion in 2012, a 31% increase in 2011. The remittance inflow in March 2013 was US\$ 1.021 million (or 1.0 %) higher than the February 2013 inflow of US\$ 102.4million. In the 12 months to March 2013, average remittance inflows increased to USD98.3 million from USD 82.9 million average remittance inflows for the year to March 2012.

Further, remittances have in the recent past increased at an average annual rate of 14.3%, increasing from US\$ 934 million in the year 2011 to US\$1.73 billion in the year 2016, constituting 2.5% of the Country's GDP. Particularly, Diaspora remittance to Kenya increased by 16.9% to US\$ 254 million in May 2018 as compared to US\$ 217 million in April. Diaspora inflow recorded in May 2018 was 57% higher than the amount recorded during the same period in the year 2017 (CBK Report, 2018). The report attributes the upsurge to increased uptake of financial products by Kenyans in the diaspora and most importantly, new partnerships between Kenyan commercial banks and other international providers of remittance services. Statistics indicate that remittances to Kenya have overtaken FDI and other portfolio equity flows, yet statistics only reflect remittances

channeled through formal means and are believed to be underestimated because there are migrants who send money through informal channels and even in-kind transfers which often go unrecorded.

Macroeconomic studies indicate that diaspora remittance impacts, in the end, the macroeconomic indicators in the receiving country. However, Rapoport and Docquier (2005) points out that the magnitude of these transfers depends on whether remittances are used either for investment or consumption purposes. Githaiga & Kabiru (2014) notes that for commercial banks, diaspora remittance is a source of deposits and revenue that consequently facilitates transmissions of capital flows. For instance, Tarus (2015) conducted a study on whether diaspora remittance affects banking sector development in sub-Saharan Africa, and the empirical findings document that indeed diaspora remittance affects banking sector development in Sub-Saharan Africa. Githaiga and Kabiru (2014) also conducted a study on remittances as a determinant of financial sector development and the results indicate that diaspora remittance negatively affects domestic credit to the private sector. However, the study further concluded that the impact diaspora remittance has on bank deposits was positive but statistically insignificant. The study concludes that remittances can support financial sector development if financial institutions are effective in converting deposits to credit.

Mwangi & Mwenda (2015) established that remittances indicators are significant factors influencing the economic growth in Kenya. Other outstanding results from previous studies document that human capital that is well developed and endowed coupled with political stability promote banking sector development. On average, the cost of remitting money to Africa is the most expensive in the whole world, and particularly Kenya is in

the category of the most expensive countries to remit to because the cost of remitting to Kenya is estimated at 9.2% of the value of remittance, relatively higher than the global average of 8.6% of the funds being transferred (CBK, 2018). Infact, the agenda for Sustainable Development Goals (SDG) of the United Nations is to lower the cost of remittance to less than 3% by 2030 and eliminate remittance corridors with costs higher than 5% by 2030. Kenya's average transaction cost is still high and perhaps the primary cause of the high transaction cost is the exchange rate which is rooted in the exchange regime adopted. This lays the basis of this study that there could be a link between exchange rate and banking sector development but through diaspora remittance as a capital inflow. The basis of choosing diaspora remittance to mediate the relationship is because of the recent importance of diaspora remittance as a capital inflow, whose significance has been discussed above. It is based on this background that the study will investigate the exchange rate, diaspora remittance, and banking sector development in Kenya.

1.2 Statement of the Problem

A country's economic prosperity is highly dependent on the efficiency of its financial system in harnessing savings and channeling them into investments. The contribution banking sector development has on socio-economic development; job creation, poverty eradication, and even education are enormous. Banking sector development has been regarded as one of the most vital economic driving forces in macroeconomics. This is because the banking sector promotes economic growth through the accumulation of capital. Similarly, it promotes technological advancement through the efficient allocation

of resources. Additionally, a well-developed banking sector aids in the reduction of information and transaction costs as far as economic activities are concerned.

However, the banking sector in Kenya is not well developed enough due to the exchange rate regime that is prone to enormous exchange rate variability. This makes it hard to harness diaspora remittance which has turned out to be one of Kenya's foreign capital inflows. Infact, going by statistics, diaspora remittance has increased over the years from Ksh 280 billion in 2018 to Ksh 307.7 billion in 2019, and Ksh 340.5 billion in 2020. Further, diaspora remittance as a foreign capital inflow contributes to 3.5% of GDP. Infact, statistics indicate that remittances to Kenya have overtaken FDI and other portfolio equity flows, yet statistics only reflect remittances channeled through formal means and are believed to be underestimated because there are migrants who send money through informal channels due to transaction costs and even in-kind transfers which often go unrecorded. Despite the enormous upward growth in remittances, still, much of the money remitted by Kenyan migrants in diaspora directly to their relatives for purposes of investment has been lost due to the imperfections present in the banking sector. The Kenya Diaspora Policy which was unveiled in the year 2014 indicated that one of the challenges the Kenyan government face as far as diaspora remittance is concerned is the inability of the Kenyan government to source and properly manage data of Kenyans who are abroad and is a significant hindrance in tapping and actualizing the untapped potential of diaspora remittance which, if channeled through the banking sector, will lead to the development of the banking sector.

In emerging economies, like Kenya, one of the major challenges has been the ability to sustain macroeconomic stability. Emerging economies such as India have adopted market

mechanisms in a bid to stabilize services offered by the banking sector. According to Rajan and Zingales (2003), reducing, if not eliminating government interventions leads to increased foreign capital inflows, which in turn enhances economic growth. In the last two decades, most emerging regimes had decided to relax their exchange rate regimes in a bid to take advantage of integration in the financial system and increased international trade. The volatility in exchange rates negatively affects foreign capital inflows. Similarly, it further worsens the country's ability to service its debt and consequently increases the import bill. Therefore, exchange rates and banking sector development have gained popularity among economists particularly in developing countries where the financial sector is less developed.

Various studies have been done locally, regionally, and internationally on remittances and banking sector development using different methodologies and some studies have shown that there is a relationship between diaspora remittances and banking development, and others have indicated no relationship on the same. Irungu (2014) conducted a study on the effects of Diaspora Remittances on the Kenyan Economy and the study findings indicated that the amounts of diaspora remittances had increased consistently over the period of study, with further findings indicating that the real exchange rate consistently inclined over the period under study. Correlation results revealed that there was a positive and significant relationship between remittance flows and GDP, US Dollar exchange rate, and the Euro exchange rate.

Githaiga and Kabiru (2014) conducted a study on remittances as a determinant of financial sector development and the results show that remittances have an adverse effect on domestic credit to the private sector. Tarus (2015) conducted a study on whether

diaspora remittance affects banking sector development in sub-Saharan Africa and the empirical findings document that indeed diaspora remittance affects banking sector development in Sub-Saharan Africa. In the exploration of the banking sector development, the expansive empirical literature has investigated how the volatility in macroeconomic indicators like exchange rates affects the financial sector in general, particularly the stock market. Many studies have not paid attention to the effect the volatility in exchange rates has on the banking sector. Indeed, of all the markets in the financial system like the stock market, the insurance market, the banking market, and the real estate market, the banking sector plays a vital role in the direct allocation of capital to foster economic growth. However, few studies, if none, have focused on how exchange rates, through diaspora remittance, affect banking sector development in Kenya hence the need to conduct this study and this will be the gap that the study seeks to fill by finding out the exchange rate, diaspora remittance and banking sector development in Kenya.

1.3 Objectives of the Study

The general objective of the study sought to investigate the exchange rate, diaspora remittance, and banking sector development in Kenya.

1.4 Specific Objectives of the Study

The specific research objectives of the study are;

- i. To assess the effect of the exchange rate on banking sector development in Kenya.
- ii. To determine the effect of the exchange rate on diaspora remittance in Kenya.

- iii. To assess the effect of diaspora remittance on banking sector development in Kenya.
- iv. To establish the mediating effect of diaspora remittance on the effect of the exchange rate and banking sector development in Kenya.

1.5 Research Hypotheses

H₀₁: Exchange rate has no significant effect on banking sector development in Kenya.

H₀₂: Exchange rate has no significant effect on diaspora remittance in Kenya.

H₀₃: Diaspora remittance has no significant effect on banking sector development in Kenya.

H₀₄: Diaspora remittance has no significant effect on the effect of the exchange rate on banking sector development in Kenya.

1.6 Significance of the Study

This study will be of great significance for banks and other financial institutions in providing evidence on the exchange rate, diaspora remittance, and banking sector development. The study will be of help to the government in establishing proper institutions to tap diaspora remittance whose impact has been linked to economic growth in the long run. To policymakers, the study will provide recommendations on how to develop and implement policies that favor and encourage more remittances to enhance banking sector development. Lastly, to scholars, the study will be of help in expanding and adding value to existing boundaries of knowledge, besides suggesting areas of further research for future researchers to investigate.

1.7 Scope of the Study

Whilst many studies have been undertaken on the financial sector, few studies have been undertaken on the banking sector as a player in the financial sector. Primarily, the impact of the volatility in the exchange rate on the banking sector through the interplay of diaspora remittance is worth uncovering. In a bid to investigate this, the study adopted an explanatory design focusing on the exchange rate, diaspora remittance, and banking sector development in Kenya. Kenya was chosen as the unit of analysis focusing on periods between the years 1983 -2018, giving a sample of 35 annual observations, and fulfilling the time series minimum observations requirement of 30 observations. The period was chosen because of data availability, and particularly, 1983 was chosen because this was the year that the crawling peg regime was introduced before fully transiting to a fully floating exchange rate regime in 1993. Secondary data was used and was drawn from the World Bank.

In conducting the study, some difficulties were encountered. However, the most pressing challenge was that of data inadequacy and inconsistency. Like any other third-world country, Kenya has the challenge of maintaining a clear and consistent database, particularly concerning macro-economic variables. This is the reason data was obtained from a different source (World Bank) for the interest of a comprehensive analysis. Although the reliability of the data cannot be guaranteed, the results are valid for any analytical purposes, in the best of circumstances because this was overcome by sourcing data and verifying with IFS maintained by the World Bank.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

This chapter reviews the concepts of banking sector development, diaspora remittance, and macroeconomic factors; and extends empirical literature along with relevant theories and concerning the objectives of the study. It also covers the conceptual framework for the study and the relationships among the variables.

2.1 Concept of Banking Sector Development

A nation's monetary success or economic success relies upon the productivity of its framework or system in tackling reserve funds and directing them into investments. Banking sector development adds to financial improvement explicitly, job creation, economic growth, destitution annihilation, and education. This attestation is reverberated by Miller (1998) who says “financial markets contribute to economic growth is a proposition too obvious for a serious discussion”. The financial sector moves resources from savers to speculators or investors (Mundaca, 2005); advance speculators 'certainty through the provision of information, management of risk, transparency and proper management; upgrade liquidity of financial resources and encourage the valuation of securities. Attributable to its criticalness numerous studies have been done to uncover the determinants of banking sector development.

According to Demiurgic-Kunt et al (2011), the nature of foundations for the security of banks and contract authorization is integral to private sector development. Ayadi et al (2013) found that income and capital streams are vital to banking sector development. Ayadi contends that capital streams have an income impact that invigorates savings

inform of bank deposits and inevitably accessibility of credit. Easy accessibility to bank credit is basic for supported financial development explicitly in developing nations and along these lines, the need for recognizing the key determinants of bank credit is a significant subject for researchers.

An observation made by Imran and Nishat (2013) is that a solid financial system or framework is fundamental for economic growth and financial market blemishes or imperfections create borrowing constraints and subsequently, lower economic and credit growth is a regular wonder in developing nations where potential speculators cannot access credit because of stringent loaning conditions. An examination by Harald and Heiko (2009) in Lebanon found that a logjam in deposits inflow fixes financing conditions for the legislature and this at some point or another prompts moderate or no economic growth. Concentrates by Mundaca (2005), Giuliano and Ruiz-Arranz (2009) demonstrate that diaspora remittances and banking sector development are correlative to economic growth suggesting that a well-developed financial system duplicates the financial effect of diaspora remittances and the other way around. Gupta et al (2009) contend that diaspora remittances bolster banking sector development in the beneficiary nation. In opposition to the reciprocal view is the finding of an examination done by Giuliano and Ruiz (2009) in nations considered to have underdeveloped banking systems. The finding was that diaspora remittances goad or trigger economic growth proposing that diaspora remittances substitute banking sector development.

Another contention set forward in writing clarifying the impact of diaspora remittances on the development of the stock market by Billmeier and Massa (2009) indicates that the

effect of diaspora remittance on the stock market development is noteworthy or significant in nations without a sizeable natural resource endowment. Therefore, this finding infers that diaspora remittances are compensatory. Most of these investigations interface or link diaspora remittances and the financial sector and economic growth and none of them have attempted to build up a direct connection between diaspora remittance and banking sector development.

According to Chirwa (2001), the banking sector assumes a significant role in undertaking intermediation works in the economy, for example, accepting cash from the general population as deposits and utilizing such cash, in entire or to some degree, to concede advances and other credit facilities. On the same note, Acosta et al., (2008) assert that studies have demonstrated that the banking sector cultivates economic growth, addresses poverty and death rates, and upgrades personal satisfaction. It additionally enables family units to gather savings and gives business people access to short-and long haul credit for investment ventures. In this sense, the cash got from diaspora remittance assumes an essential job in extending the deposit base of the banking sector, and such assets are then made accessible to the general population. It might be difficult to gauge financial development since it is a wide topic with various measurements and dimensions. Pragmatic work done is based on research quantitative indicators available for prolonged periods of various countries. For example, the ratio of banking sector assets to GDP, number of bank accounts per person, the ratio of banking sector liquid liabilities to GDP, the ratio of banking sector deposits to GDP, the ratio of domestic credit to the private sector as a percentage of GDP, cost efficiency, liquid liabilities, and bank assets.

2.2 Concept of Diaspora Remittance

Diaspora Remittances are the transfers of money, goods, and diverse traits by migrants or migrant groups back to their countries of origin or citizenship (Oucho, 2009). Migrants' Kenyans living in the diaspora are constantly remitting or rather sending money back home either for purposes of investment or for supporting their families and friends left behind. The Kenyan Diaspora remittance is steadily rising and In 2013 according to World Bank Reports, the figure was at USD 1,290.6 (About Ksh. 113 Billion accounting for 2.98% of GDP) but registered an 11% increase when it rose by a whopping US\$ 137 million in 2014 to stand at US\$ 1,428.5 million. This figure accounts for about 3% of the country's GDP, an amount far much higher than what is raised from mining, which contributes to only 1.08% of GDP.

Under the financial sector, diaspora remittance is one of Kenya's vision 2030 projects. According to Fayissa and Nsiah (2010), Kenyans in diaspora keep on assuming a very pertinent role in the development of the nation through diaspora remittance and the government fully appreciates and recognizes the immense role these remittances play in both economic growth and banking sector development. However, Fayissa and Nsiah (2010) point out that regulatory structures and instruments are absent for Government to tap straightforwardly into these foreign inflows from the Diaspora as an advantage for investment and general national development and in this manner, keeps on urging approaches and policies to completely exploit diaspora potential needs. This has therefore seen commercial banks making moves to boost the equivalent.

Omonzejie and Omonzejie (2015) indicate that there are varied mechanisms available to immigrants for transferring diaspora remittance back to the home countries, namely: banks, Western Union, Money Gram, hand delivery by the sender through a third party, and other varied informal mechanisms. However, regulatory structures and instruments are absent for Government to tap straightforwardly into these foreign inflows from the Diaspora as an advantage for investors. Conclusively, diaspora remittance flow channeled through both formal and informal means is believed to be larger. Masduzzaman (2014) points out that diaspora remittance has other significant features beyond their volume and intensity.

The 2017 World Bank report pointed that diaspora remittance are relatively more stable as compared to other foreign capital inflows, and indeed seem to be countercyclical. In this regard, Singh *et al.*, (2010), state that there are two vital features of diaspora remittance to note: Firstly, they are largely not affected by political crises because they tend to increase in hardship times and secondly, compared to other foreign capital inflows, diaspora remittance are evenly or equally spread among developing countries. In times of either man-made or natural crises, migrants tend to send more money to their families to help them survive or recover, whereas foreign investment and lending tend to dry up (World Bank, 2017).

Diaspora remittances are experiencing growth and due to huge sums involved, it is now being recognized as an important contributor to the recipient country's growth and development. Diaspora remittance is a significant wellspring or source of external financing to the beneficiary nation and may mitigate credit imperatives or constraints and

go about as a substitute for financial development. In contrast to private capital streams, diaspora remittance will in general ascent when the beneficiary economy endures an economic downturn following crisis, cataclysmic event, or political clash or conflict since migrants send money during tough occasions to support their families and companions. The development of an economy is not only thought of as an expansion in productive limit or capacity but also as an improvement in the personal satisfaction of the general population of that economy. There is a general accord on the immediate commitment or rather contribution of diaspora remittance to monetary development or economic growth in the beneficiary nations. Diaspora remittance improves the livelihood and survival of families left behind by migrants back home. To the recipient county, diaspora remittance, particularly those invested in government stocks and securities, give colossal external financing and help in economic growth and general improvement of infrastructure in Kenya. It likewise adds to expanded foreign exchange income to the beneficiary nation.

2.3 Concept of Exchange Rate

The exchange rate refers to the rate at which a currency is exchanged for another. It is the nominal exchange rate adjusted for relative purchase power (Yang & Zeng, 2014) and it measures how much the currency can purchase in real terms, or the purchasing power of the currency abroad relative to that at home. It is the price of a nation's currency in terms of another currency. It has two components, the domestic currency, and foreign currency, and can be quoted either directly or indirectly. The floated exchange rate is the one that is determined by forces of demand and supply while the pegged exchange rate is set by the Central Bank. Kenya maintains a floating exchange rate. The exchange rate determines

the level of trade between countries. This, in turn, affects economic growth as the volumes of trade vary.

Exchange rates can be either hard pegs or fixed regimes, soft pegs or intermediate regimes, floating regimes, and residuals. When the local currency is pegged to another or a basket of other currencies, it is said to be a fixed exchange rate. This tends to improve its stability, providing a predictable business climate, improving economic growth. Appropriate exchange rate policy helps sustain economic growth. Conversely, volatile exchange rates disrupt investment and exports as investors are more confident in investing in a country with a stable currency.

A flexible exchange rate allows the currency to fluctuate depending on the demand and or supply of the currency in the exchange market. This creates an automatic adjustment of the balance of payments. The currency depreciates or appreciates subject to its deficit or surplus (Ihnatov and Capraru, 2012). This system, however, is disadvantageous in that fluctuation of the currency disrupts trade therefore many countries opt for the managed floating regime or combination of floating and fixed regimes (Jakob, 2016). Fixing the exchange rate to the USD led to improved long-term growth in the 1990s, this was called the East Asian miracle (Jakob, 2016). Developing economies might not sufficiently absorb the shock from exchange rate fluctuations, therefore a fixed regime is preferred (Jakob, 2016). Levy-Yeyati and Sturzenegger (2003) found that there is a correlation between the exchange rate and output growth. Malhorta (2005) observed that the choice of exchange rate did not have much significance on growth although more flexible regimes resulted in higher growth. Developing Asian countries registered more growth by

employing managed float regimes (Levy-Yeyati & Sturzenegger 2003). Therefore, the regime adopted affects economic growth, though this is subject to the level of development in the economy. There is a moderately weak connection between exchange rate regimes and economic growth, though countries with pegged regimes attained higher investment and low productivity than those that adopted floating regimes (Jakob, 2016). He further states that fixed exchange rates spurred economic growth because of lower interest rates as there was certainty in the currency and elimination of exchange rate risk, which improved international trade.

2.4 Theoretical Framework

This study will be guided by the financial liberalization theory by McKinnon & Shaw (1973), Pure Altruism theory, Pure Self-Interest theory, Tempered Altruism theory, also known as Enlightened Self Interest theory.

2.4.1 Financial Liberalization Theory

McKinnon & Shaw (1973) put the financial liberalization theory otherwise referred to as the McKinnon-Shaw hypothesis forth. It suggests that financial liberalization is a prerequisite for financial sector development, which resultantly leads to economic growth. The theory points out that high and positive real interest rates would increase domestic savings which in turn increases the number of loanable funds available for investment. McKinnon & Shaw (1973) view that financial repression (administrative control of the financial sector) inhibits financial sector development. Financial repression causes market disequilibrium and limits the allocative efficiency function of the financial market. In a financially repressed economy, firms are likely to face financing constraints due to limited access to external finance and credit controls. Laeven (2003) observes that

financing constraints faced by small firms during the financial repression regime reduced following financial liberalization while large firms experienced higher financing constraints because of financial liberalization.

This theory is important to the study since the stimulating effect of financial liberalization on banking sector development is conditioned by economic, trade openness, and financial openness. Financial liberalization spurs financial sector development provided a threshold level of legal development has been reached. The financial sector develops due to the liberalization of the financial sector and financial repressive policies hinder financial sector development. Concerning the McKinnon-Shaw hypothesis, this theory is important to the study of economic factors on diaspora remittance and banking sector development since financial liberalization fosters banking sector development in Kenya.

2.4.2 Pure Altruism Theory

Lucas and Stark proposed pure Altruism theory in (1985). The highlight of pure altruism theory is that the main reason migrants remit money back home is the concern for the welfare of family members back at home. According to Lucas and Stark (1985), migrants are motivated to remit because of the care they have for household consumption. Bettin and Zazzaro (2018) also note that migrants are most likely to remit money back home to their relatives and friends to offer them support in the process of reconstruction. Remittances tend to increase in cases where the income of the remitter also increases unless the income of the potential remitter is low (Henry, Moulton, & Ricketts, 2009). Other scholars have advanced arguments that it is only permanent migrants who remit for

altruistic reasons because temporary migrants are likely to remit because of investment purposes and to smoothen future consumption (Henry, Moulton, & Ricketts, 2009).

The strength portrayed by family ties together with the net earnings of recipients is important in the altruistic model. In fact, according to the altruistic model presented by Rapoport & Docquier (2005), the higher the amount earned by migrants, the more the amount anticipated by the recipients. Diverse studies have investigated the validity of altruistic motive, but a number of these studies have concluded that in explaining the inflows of remittances, altruism as a motive to remit is insufficient. According to Alleyne (2006), there is a substantial investment motive behind remitting, other than altruistic motive. There is concurrence by Lucas and Stark (1985) because they believed that it is not correct to believe that the primary motive migrants remit is because of altruistic motives.

The theory is important to the study since the probability of migrants remitting back home will be increased by strong family ties between the migrant and the remaining households back at home. However, remittance would tend to decline with an increase in the wealth of the recipient household and the duration of the migrant's stay in the host country.

2.4.3 Pure Self-Interest Theory

Pure self-interest theory was proposed and developed by Lucas and Stark (1985). The pure self-interest theory believes that migrants remit money to their home countries because personal gains drive them. A speculated possible reason for the self-interest motive of migrants to remit is the intention to return home. According to Vargas-Silva &

Huang (2006), some migrants remit back home because eventually, they expect to return home and therefore can enjoy the benefits of the households' gratitude because they remitted. Lucas and Stark (1985) asserted that when migrants intend to return to their home countries, they will send more remittances to ensure that their social assets are intact. Therefore, the pure self-interest theory is modeled around the argument that remittances are not countercyclical. Family qualities just as the attributes of the immigrants, which incorporate altruistic, and self-interest thought processes may similarly assume an increasingly critical role in the assurance of diaspora remittance inflows (Lucas and Stark 1985).

This theory is important to the study since the intention or rather motive predicts huge remittances the larger the potential inheritance. The subsequent second motive is to develop resources at home, for example, land, houses, and domesticated animals (livestock), which would require that a family member go about as an operator or agent to buy the assets and keep up them in great condition. The third motive may emerge from an expectation to return home at a later stage, which would require an interest in fixed assets, in a business, or in-network ventures, or rather a community project if the immigrant has political ambitions. The last objective, however, delineates the trouble of isolating altruistic and self-interest motives.

2.5 Empirical Review

The empirical literature discusses studies on Exchange rate, diaspora remittance, and banking sector development, the mediating effect of diaspora remittance on the effect of exchange rate on banking sector development, and their results thereof.

2.5.1 Exchange Rate and Banking Sector Development in Kenya

The exchange rate is a measure of competitiveness amongst countries all around the world. It is commonly known as the real exchange rate. Furthermore, it is the index of competitiveness of the currency of any country and an inverse relationship between this index and competitiveness exists.

Overseeing the exposure of exchange rate risk has picked up noticeable quality in the most recent decade because of the bizarre event of countless currency crises. From the corporate administration point of view, management of currency risk is progressively seen as an item approach of diminishing a bank or association's vulnerabilities from the significant movement of the exchange rate. The exchange rate assumes an inexorably critical role in any economy as it straightforwardly influences prices at the domestic level, the profitability of exchanged products and services, resource allocation, and investment choice. The strength of the exchange rate is today a considerable bedrock of every single financial action.

The Lower the value of this index in any country, the higher the competitiveness of the currency of that country. It is commonly thought that the inconsistency and volatility of the exchange rate greatly affect expected cash flows. This has an adverse effect on the profitability experienced by banks and therefore affects their performance and development because of changes in the home-currency-denominated revenues and costs. It also affects the terms of competition for firms with international activities.

Maigua and Mouni (2016) investigated the profitability of commercial banks in Kenya and observed that the exchange rate has a positive significant effect influence on the

performance of commercial banks. Manyo et al (2016) also investigated the effect of foreign exchange transactions on the performance of Nigerian banks for the period of 2010 to 2014. The results revealed that foreign exchange income has a negative and insignificant effect on the profitability of Nigerian banks for the period. Kiganda (2014) as well studied the profitability of commercial banks in Kenya for the year 2008-2012 and concluded that the exchange rate has an insignificant effect on profitability.

Babazadeh and Farrokhnejad (2012) examined the effects of foreign exchange changes on commercial banks' profitability in Iran for a period of five years from 2006 to 2010. The results explained that the exchange rate had a significant impact in determining the profitability of commercial banks in Iran. Casey et al (2014) investigated the effect of foreign exchange fluctuations on 22 large U.S. commercial banks performance over a 40-year period and found out that financial institutions are impacted by foreign currency movements where banks are exposed to foreign exchange risk and that specific bank performance is related to the value of the dollar relative to market baskets of other currencies.

Varied studies have cross-examined the impacts exchange rates have on the financial sector particularly through the performance of the stock markets. However, there is still a lack of consensus regarding the relationship that exists between the exchange rate and the performance of the stock market (Bhunja, 2012). Even though several empirical studies haven't established the existence of any significant relationship existing between the variables (For instance Carruth *et al*, (2000); Aydemir & Demirhan (2009) and many other studies confirm the existence of a significant effect of exchange rate on stock

exchange performance particularly in developing economies. A very good example is the argument presented by Maku and Atanda (2010) that the instability of the exchange rate is expected to greatly affect the performance of stock markets through the way the exchange rate impacts the competitiveness of the exchange rate between trade partners in Nigeria. Similarly, Coudert et al. (2011) establish that general global distress is increased by volatility in the exchange rate in developing economies. Hajilee and Al Nasser (2014) conclude that stock market development in developing economies is affected by exchange rate volatility in both the short and the long run.

Concerning banking sector development, as Levine (2004) summarizes it, varied empirical studies have investigated the role political factors, geographical factors and regulation have in shaping banking sector development without a clear definition of development. Barth et al. (2002) caution on government policies that regulate bank activities. Because of this, more recent empirical studies in banking sector development make use of ratio proxies such as private credit, cost efficiency, liquid liabilities, and bank assets among others, to measure banking sector development (e.g. Saci et al., 2009; Fang et al., 2011; Liang and Reichert, 2012; Tarus, 2015; Misati & Kamau, 2018). Most of the proxies that measure banking sector development are applied to confirm the contradiction in crisis literature in both growth and banking activities in the relationship between banking sector development and economic growth. For instance, Loayza and Ranciere (2005), using time series, conducted a cross-country investigation and concluded that there exists a positive long-run relationship between financial intermediation and economic growth and which exists with a negative short-run

relationship. The most precise measure of banking sector development is considered vital determinants of economic growth.

Generally, there are a limited number of empirical studies that have investigated the relationship that exists between macro-economic indicators and banking sector development. Further, fewer studies examine the direct effect the exchange rate has on banking sector development particularly in singled-out developing countries, with mixed results. For instance, Hasan and Marton (2003) point out that liberal policies including market-oriented exchange rate have contributed to building a sound and efficient banking system in Hungary. In Turkey, Solakoglu and Demir (2009) analyzed how sensitive firm value is to fluctuations in the exchange rate and conclude that it is only banks and insurance corporations that react to fluctuations in exchange rate with a positive impact on their equity. In Nigeria, Taiwo and Adesola (2013) examined the relationship that exists between exchange rate and banking sector performance using loan loss ratio and capital deposit ratio as their proxies and concluded that exchange rate has an effect of raising bad loans whereas capital deposit ratio does not significantly relate with the exchange rate. Aghion et al. (2009), using private domestic credit to measure banking sector development conducted a study to establish that a country will grow faster with a flexible exchange rate owing to the stability in the financial sector. However, there still a lack of studies that explore the direct impact the exchange rate has on banking sector development.

2.5.2 Exchange Rate and Diaspora Remittance in Kenya

Varied empirical studies were undertaken by, for example, Adenutsi (2014) and Singh *et al.*, (2010) conclude that the income gap between the host country and the recipient country, interest rate, exchange rate, political risk, and the level of financial sector development affects the frequency and volume of diaspora remittance.

Ochieng (2013) in his study on the exchange rate on Diaspora Remittances in Kenya found out and indicated that the exchange rate has a positive impact on Diaspora remittances to Kenya. The study findings further concluded that the exchange rate was not the only macroeconomic factor affecting diaspora remittance and therefore the study concluded that indeed exchange rate impact on diaspora remittance besides other macroeconomic factors like inflation and interest rates.

According to a study done by Sakka & McNabb (1999), exchange rate and interest rate differential jointly affect diaspora remittance in Egypt. The study further indicated that most of the remittances sent are channeled to investment in real assets and are not meant to improve the living standards of those left behind. Shahbaz & Aamir (2009) and Gupta (2005) on Pakistan and India respectively conclude a negative relationship between exchange rate, diaspora remittance, and economic growth in the country of origin

Tabit and Moussir (2016) conducted a study on the macroeconomic determinants of migrants' remittances evidence from a panel of developing countries and found out that migrant stock, the official exchange rate, and the real interest rate in the country of origin do not have a significant influence on remittances received by the panel considered. Makhoulf (2015) showed that an increase in worker's remittances of 1 percentage point

of GDP is associated with an appreciation of Tunisia's real exchange rate by 0.39 percent.

According to Barro et al., (2007), exchange rate vitality may influence the decision of migrants to remit money back home. Similarly, Faini (2007), concludes that exchange rate changes have two main effects: income and substitution effects. In a study undertaken in India, Sirkeci et al., (2012) found out that each time the Indian currency depreciates; there is an increase in diaspora remittance in the short run but leads to a decrease in diaspora remittance in the long run. On the same note, Yang (2008) notes that depreciation in peso leads to an increase in remittances in the Philippines.

2.5.3 Diaspora Remittance and Banking Sector Development in Kenya

One channel through which the economy develops is the improvement of the financial sector. Ratha (2013) contends that diaspora remittance is a significant wellspring of development funds channeled through commercial banks. In this manner, diaspora remittance appears to improve banking sector development and, thusly, influence economic growth (Aggarwal et al., 2011). Diaspora remittance can boost banking sector development, particularly in developing nations where financial services are restricted. According to Orozco and Fedewa (2007), remittance money move utilizing financial institutions from one nation to another nation, which enables beneficiaries to request or access other related financial products and services. Guiliano and Ruiz-Arranz (2009) record that diaspora remittances invigorate the development of economies with an underdeveloped banking sector by giving choices to finance investment and easing liquidity requirements. Similarly, Aggarwal et al., (2011) indicate that diaspora remittance increases the volume of bank deposits and credit in developing economies.

Cooray (2012) finds that diaspora remittances extend or rather deepen the banking sector but blocks the proficiency of the banking sector. Settlements advance financial division improvement in African nations (Andrianaivo and Yartey, 2010; Gupta et al., 2009; Gwama, 2014).

Prompted by the altruism model, diaspora remittance recipients are most likely to have their money channeled through the bank. These funds increase will lead to an increase in bank deposits besides exposing the beneficiary of the funds to the banking sector, consequently contributing to financial deepening or monetary extending. The underlying theory that diaspora remittances can prompt banking sector development rests on the fact that money sends through the banking system makes it easy for the recipients to access bank products and services, along these lines expanding demand (Orozco and Fedewa, 2007). The access to banking products and the services offered by the bank would not have been acknowledged were it not for remittances. In a similar vein, diaspora remittances enable banks to associate with and connect with unbanked populaces (Aggarwal et al., 2006) who, all the while, profit themselves from the items offered by the financial sector. Additionally, diaspora remittances lead to the expansion of loanable funds because of deposits triggered by remittances (Aggarwal et al., 2011).

Diaspora remittances may likewise improve the credit value of household speculators (Barajas et al., 2009), and voluminous remittances may bring down the expense of capital in the local economy. This decrease in the borrowing cost builds interest for credits. Despite the expanding significance of diaspora settlements to foreign capital streams, the connection between diaspora remittances and banking sector advancement has not been sufficiently examined, especially in Sub-Saharan Africa. The few investigations

completed on different economies have until now created ambiguous outcomes, and there is a requirement for more research, especially on those developing economies which have been found to get a lot of diaspora remittances (Acosta et al., 2008; Adams and Page, 2003; Billmeier and Massa, 2009; Gupta et al., 2009; Mundaca, 2009; Motelle, 2011; Arezki and Brückner, 2012).

In an investigation on how the local financial sector impacts a nation's ability to exploit diaspora remittances to improve long haul development, Giuliano and Ruiz-Arranz (2009) Utilizing ordinary least squares (OLS) and System GMMs, they discovered solid proof of cooperation impacts, with the end goal that diaspora remittances support development in nations where the financial sector is less developed. Based on these outcomes, they contemplated that diaspora remittances give an elective method for financing speculations for business people who either come up short on the guarantee to take out bank credits or who are encountering the mind-boggling expense of funds in the banking sector. Bettin and Zazzaro (2009) expanded Giuliano and Ruiz-Arranz's (2009) contemplate, presenting a quality-based proportion of bank development (inefficiency in the banking sector). They found that a productive or efficient banking system supplements the beneficial outcome of diaspora remittance on economic growth. They contended that diaspora remittances address liquidity limitations, yet that they likewise assure access to credit when banking frameworks or systems are efficient and productive. Such interceded impacts or mediated effects of an effective banking system or framework improve economic growth. The effect of diaspora remittances on banking sector development is as yet an open inquiry.

According to Billmeier and Massa (2009), Banks and different operators that operate cash transfer systems are probably going to develop with the measure of cash moved, and are likewise prone to add to the commercialization of cash transfers in the beneficiary nation. Additionally, diaspora remittances transferred through the banking system or framework increase total bank deposits, and this thus influences credit intermediated by the banking sector. Fajnzylber and Lopez (2007) contend that foreign capital streams from diaspora remittances to the economy may build banks' loanable funds. Indeed, even beneficiaries of diaspora remittance that don't go through the banking system or framework are probably going to request banking services for safe care (Aggarwal et al., 2011, 2006), consequently expanding the degree of banking activity.

Utilizing a fixed-effect model and data from 17 Middle East and Central Asia, Billmeier and Massa (2009) considered the connection among diaspora remittances and securities exchange development and found a positive and critical relationship. It is in this regard that I accept that diaspora remittance is probably going to influence banking sector development since remittances piped through commercial banks are imposed handling charges or processing fees that can be a critical source of income (Demirguc-Kunt et al., 2011). Correspondingly, an ascent in the quantity of diaspora remittance beneficiaries improves the probability of banks opening more branches in the nation, trying to find themselves near diaspora remittance beneficiaries. It is additionally conceivable that diaspora remittance leads to an expansion in the bankable populace, thus to an improvement in the general execution of the banking sector. The thinking behind this contention is that a significant segment of diaspora remittances goes to the unbanked populace at the lower end of the income appropriation scale, prompting an expansion in

the number of bankable family units. Demirguc-Kunt et al. (2011) contend that handling diaspora remittance gives banks data concerning beneficiary families, which might help plan credit items or products for groups that would not generally be bankable.

In an investigation on the impact of diaspora remittance on banking sector profundity or depth and expansiveness or breadth in Mexico, Demirguc-Kunt *et al.* (2011) found that diaspora remittances expanded the number of bank offices and accounts and the total amount of bank deposits. Different investigations have discovered that diaspora remittances help families to set up little business endeavors and encourage business activity (Yang, 2008; Woodruff and Zenteno, 2001), which inevitably prompts an expansion in private investment. This commitment to business activity directly affects banking foundations, since banks offer family units a sheltered spot to store their liquidity (Demirguc-Kunt et al., 2011).

In any case, different researchers, for example, Aggarwal et al., (2011) are incredulous about the impact of diaspora remittance on the banking sector; they contend that diaspora remittance may loosen up financing imperatives, which infers a decreased interest for bank credit that influences the development of the banking sector. Thus, they additionally contend that the impact of diaspora remittance may not convert into an improved banking sector, especially if these inflows are diverted toward the financing of government tasks or if banks are hesitant to loan.

2.5.4 Mediating effect of diaspora remittance on the effect of the exchange rate and banking Sector Development in Kenya.

Diaspora remittance has become a key driver in economic growth in Kenya and is a major source of foreign exchange in the Kenyan economy only rivaled by tourism,

horticulture, and tea export. Remittances have led to an economic boom and have resulted in the improvement of both the economic and social welfare of direct and indirect beneficiaries. Remittances are influenced by several factors key among them being the exchange rate between the resident country and the home country of the remitter.

Diaspora remittance can have effects on the long-term growth of the economy through many channels of which one of such channels is exchange rates. Differentials in exchange rates can affect the distributional impact of diaspora remittance inflows. The effect is by both altering the financial and non-financial returns to factors employed in both traded and non-traded goods and services sectors and by also affecting the prices of traded and non-traded goods meant for consumption. However, there is a mixed bag on the empirical evidence exchange rates have on diaspora remittance and vice versa.

A study that was undertaken by Bourdet, Yves and Hans Falck (2003) regarding diaspora remittance inflow into Cape Verde between the years 1980-2000 indicated that diaspora remittance in Cape Verde during the period had an association with an appreciation of exchange rate. Similarly, Hyder and Mahboob (2005); Saadi-Sedik, Tahsin and Petri (2006) undertook a similar study in Pakistan and Jordan and found similar results. Further, Amuedo-Dorantes and Pozo (2004) also concluded that diaspora remittance inflows result in the appreciation of the exchange rate

A study conducted by Adejumo and Ikhida (2019) on The effects of remittance inflows on exchange rates in Nigeria found out that remittance inflows have been associated with a rise in the real exchange rate in Nigeria. In this way, high diaspora remittance inflows

have been related to an increase in the real exchange rate in Nigeria. This, therefore, suggests high diaspora inflows have applied depreciating pressure on the nation's currency. Consequently, in opposition to the Dutch disease recommendation, high diaspora remittance inflows into Nigeria have not brought about an exaggerated exchange rate but rather a low-valued exchange rate (Adejumo and Ikhide, 2019).

2.6 The Conceptual Framework

The conceptual framework provides an explicit connection between theory, previous research attempts, and the purpose of the study. It shows what the study sought to achieve and how it was to be achieved and identifies and demonstrates the relationships between the variables and how their relationships provide new knowledge. In this study, the independent variable is exchange rates whereas the dependent variable is banking sector development whose measurement is bank domestic credit to the private sector. The mediating variable is diaspora remittance. The conceptual framework in figure 2.1 is conceptualized as shown below.

Independent Variable **Mediating Variable** **Dependent Variable**

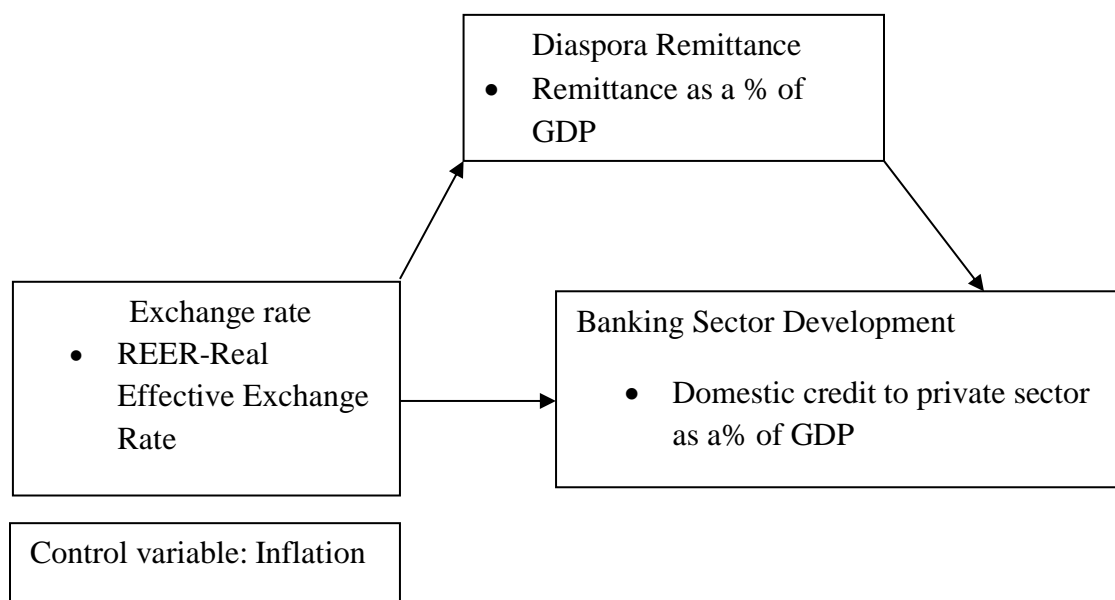


Figure 2.1 Conceptual framework

Source: Adopted from Hayes (2013)

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Overview

This chapter discusses the methodology used in the study. It covers the study area, research design, target population, sampling design, Target population, data collection instruments and source of data, stationary tests, measurement of study variables, and analytical model. It also justifies each step.

3.1 Study Area

The study was conducted in Kenya and focused on the banking sector. The sector contributes totwo-thirds of the country's financial sector and 7.3 % of the country's GDP. The Kenyan Banking Sector is made up of the Central Bank of Kenya (CBK), as the regulator and the managed or rather regulated; Commercial Banks, Non-Bank Financial Institutions, and Forex Bureaus (CBK, 2014).

3.2 Research Design

According to Blumberg, Cooper, & Schindler (2008), the research design is the arrangement and structure of examination so considered as to acquire answers to research questions, communicating the research issue framework, association, or design of the connections among factors of the investigation. Similarly, Creswell (2014) simply describes a research design as a procedure of inquiry and helps the researcher in resource allocation by presenting crucial choices in the methodology. An explanatory research design will be used in this study, as it will be found ideal to describe the characteristics of the variables and at the same time investigate the cause-effect relationship between variables. Cooper and Schindler (2014), further states that the explanatory research

design seeks to establish the relationship between variables. The study will be explanatory in finding out what will be happening and seeks new insights (Cooper &Schindler, 2014) into relationships that exist between research variables. The explanatory research design will make use of a descriptive time series correlation to analyze the data under the study period. Therefore explanatory research design will be used to examine the exchange rate, diaspora remittance, and banking sector development in Kenya.

3.3 Target Population

The population of the data source for this study was made up of all the licensed banks authorized to receive diaspora remittance in the banking sector in Kenya between the period of 1983 and 2018 of which data was obtained from the World Bank (World Bank Economic Indicators).

3.4 Data Collection Instruments

For this study, time series, secondary data was used. The data was obtained from the World Bank as published between 1983 and 2018.

3.5 Data Analysis and Presentation

The research study adopted descriptive and inferential statistics in its analysis. Version 16 of STATA software was used for data analysis. The software was also be used to carry out diagnostic tests. The study employed Jacque–Bera test proposed by Jacque and Bera (1987) to establish normality and skewness. Both the Dickey & Fuller Test (1979) and Phillip & Perron Test (1988) were utilized to determine the presence of stationarity in the variables under study. The study used a simple multiple regression model and the choice

of this analysis tool was to determine whether the relationship between the dependent variable, the independent variables and the mediator variable investigated in this study is linear.

3.6 Model specification

The research followed the model used in Hajilee & Chen (2019) to estimate the effect of the exchange rate on banking sector development in Kenya. The general model that will be used is a simple regression model, which takes the following form:

$$\text{LnDCPS} = \alpha + \beta_1 \text{LnEXR} + \beta_2 \text{LnDR} + \beta_3 \text{LnINF} + \varepsilon_t$$

Where: LnDCPS is the Log-linear of the ratio of domestic credit to the private sector as a percentage of GDP (Measure of banking sector development), with; α is a constant intercept; LnEXR is the Log-linear of Real Exchange rate, Ln INF is the Log-linear of inflation, which is controlled in the study ε_t is the Error term, and β_1 , β_2 , β_3 are regression coefficients.

3.7 Testing for mediation

Hayes (2013) proposed a systematic approach aimed at testing the significance of the coefficients at every step as follows

$$\text{LnDCPS} = \alpha + \beta_1 \text{LnEXR} + \beta_2 \text{LnINF} + \varepsilon_t \dots\dots\dots 1$$

$$\text{LnDR} = \alpha + \beta \text{LnEXR} + \beta_2 \text{LnINF} + \varepsilon_t \dots\dots\dots 2$$

$$\text{LnDCPS} = \alpha + \beta \text{LnDR} + \beta_2 \text{LnINF} \varepsilon_t \dots\dots\dots 3$$

$$\text{LnDCPS} = \alpha + \beta_1 \text{LnEXR} + \beta_2 \text{LnDR} + \beta_2 \text{LnINF} + \varepsilon_t \dots\dots\dots 4$$

Where: α - Constant; LnDCPS- is the Log-linear of the ratio of domestic credit to the private sector as a percentage of GDP (Measure of banking sector development); LnEXR-Log of Exchange rate; LnDR- Log of Diaspora remittance; ε - Error term. Equation 1 tested the first objective, equation 2 tested the second objective, equation 3 tested the third objective, and equation 4 tested the fourth objective.

3.8 Time series properties

Time series data change over time, therefore, making its properties unstable. Therefore there was a need to perform tests on the data to establish the extent of its stability.

3.8.1 Test for stationarity

According to Gujarati & Porter (2003), a stationary variable is the one that exhibits unit root. Similarly, the time series is stationary if they do not have a trend or seasonal effects. It is important to test the univariate variable for the presence of unit root. Testing the stationary of the time series variable is imperative because failure to do so will imply that modeling the variables as a simple linear relationship will only generate a spurious regression (Lütkepohl, 2005). The test for the presence of unit root can be done utilizing Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests:

$$Y_t = \beta_1 Y_{t-1} + \varepsilon_t$$

Ideally, if β is equal to 1, then the model is characterized by a unit root, and the time series contains characteristics of non-stationarity. Generally, β must be less than unity in absolute value ($-1 < \beta < 1$). The stationarity of the variable will be tested using the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP) tests. If there is the presence of unit root, then it is said to be integrated of order 1.

3.8.2 Augmented Dickey-Fuller (ADF) Tests

Dickey and Fuller (1981) suggested the test. The test is based on the following model, to account for all unit root forms:

$$\Delta Y_t = \beta_t + \varphi Y_{t-1} + \Delta Y_{t-1} + \varepsilon_t$$

Where ε_t is a noise term whereas $\Delta Y_{t-1} = Y_{t-1} - Y_{t-2} = \Delta Y_{t-2} + \Delta Y_{t-3}$. This is to make sure that the error term is serially uncorrelated. It is important to note that if there is the presence of unit root, φ will not have a statistical difference from zero, i.e. $\varphi=0$.

3.8.3 Phillips- Perron (PP) test for unit root

Phillips and Perron (1988) suggested this test. It entails fitting the following model:

$$\Delta Y_t = Y_{t-1} + \beta_1 Y_t + \mu_t$$

Where $\beta = \text{Constant}$ and \check{Y}_t is the time trend. PP tests correctly for the presence of any serial correlation by using Newey-West (1987) heteroscedasticity and autocorrelation.

The PP test involves fitting the regression;

$$Y = \alpha + \rho Y_{t-1} + \varepsilon_t$$

3.9 Diagnostic testing

The following diagnostic tests deemed necessary for time series data were carried out by the researcher.

3.9.1 Heteroscedasticity Test

For the linear regression model to hold, there must be constant variance for the linear regression model. There is said to be heteroscedasticity when the error term does not have a constant variance. The Breusch- Godfrey test will be used to test for the presence of heteroscedasticity. There is no general rule for correcting heteroscedasticity since each heteroscedasticity is somehow different. However, the regression can be simply transformed when X_t is related to the variance, For instance, if the variance is inversely related to X_t , and then multiply both sides of the equation by X_t . Similarly, if the variance is related to the time, then the same is done using t

3.9.2 Residual autocorrelation

Residual autocorrelation has the same effect as that of multicollinearity. The implication is that they can make one easily reject the null hypothesis of a lack of relationship between variables and consequently lead to spurious regression. Gujarati and Porter (2003) points out that auto-correlation arises because of either excluded variables or the use of incorrect functional form. The study will employ the Lagrangian Multiplier (LM) test to determine the presence of auto-correlation.

$$\lambda LM^{(h)} \chi^2(hK^2)$$

Where hK^2 refers to the number of auto covariance of residuals, while χ^2 is the chi-square distribution, h is the number of estimated residuals, d is the degrees of freedom and λLM is the general LM statistic.

3.9.3 Normality test

The study relied on the Lomnicki-Jargue-Bera test where the null hypothesis of normality will be tested against the alternative hypothesis of non-normal distribution. The JB statistic is expected to be statistically indifferent from zero.

$JB = 0$ (Normally distributed)

$JB \neq 0$ (Not normally distributed)

Rejection of the null hypothesis for any of the variables would, therefore, imply that the variables are not normally distributed and a logarithmic transformation is necessary.

3.10 Measurement of variables

In this study, banking sector development was measured using a common proxy that is always based on quantity (quantity based), as was used by Giuliano and Ruiz-Arranz (2009). Particularly, the ratio of domestic credit to the private sector to GDP will be used as a measure of banking sector development. This indicator was preferred by Giuliano and Ruiz-Arranz (2009) because it captures the bank's most important function of channeling remittances towards very important investment ventures.

In consistence with other studies previously done on remittances, diaspora remittance was measured as a ratio of remittances to GDP (Tarus, 2015; Giuliano and Ruiz-Arranz, 2009; Aggarwal *et al.*, 2006 :). Inflation, which will be measured using the real rate of inflation, will be controlled in this study. The variable will be controlled because findings from previous studies indicate that inflation affects banking sector development. For example, Tarus *et al.*, (2012) found that inflation increases the cost of loans, which

consequently affects banking sector development. Similarly, a high inflation rate signifies political instability and may therefore affect banking sector development.

The exchange rate was measured using the real effective exchange rate (REER), which is represented as the DEC alternative conversion factor. This is similar to the official exchange rate except that it captures other refinements, which may make the official exchange rate unreliable or unrealistic. Previous studies (Acosta *et al.*, 2009; Hajilee & Chen, 2019) have used a real effective exchange rate to measure exchange rates. The measurement of variables is summarized in the following table.

Table 3.0: Measurement of variables

Variable	Measure	Studies	Formula
Exchange rate	Log of Real Effective Exchange Rate (REER)	(Acosta <i>et al.</i> , 2009; Hajilee & Chen, 2019)	$REER = NEER * P/P^*$ Where: NEER-Nominal Effective Exchange Rate P- Domestic Price/Foreign Price
Diaspora Remittance	Log of Remittance as a % of GDP	(Ikpesuet <i>et al.</i> , 2020; Tarus, 2015)	Remittance/GDP*100
Banking sector development	Log of Domestic credit to the private sector as	(Ikpesu <i>et al.</i> , 2020; Tarus, 2015)	Domestic credit to private sector/GDP*100

Source: Data Analysis Results (2020)

CHAPTER FOUR: RESULTS, INTERPRETATION, AND DISCUSSION

4.0 Overview

This section begins by providing the defining characteristics of the time-series data used in the analysis. It also discusses the characteristics of variables, unit root test results, diagnostic tests result, and the results of the analysis.

4.1 Characteristics of variables

The time-series graphs of the variables presented the characteristics of the variables. Domestic credit to the private sector as a percentage of GDP (a measure of banking sector development) has been taking an increasing trend. It even took a much more increasing trend after the financial crisis in the year 2008. Diaspora remittance showed a continuously increasing trend till the mid-nineties when it significantly increased to the late-nineties and early 2000s. There was then a sharp decline in remittances experienced at the onset of 2000 to the mid-2000s. However; there was a constant growth in the late 2000s possibly because of the financial crisis experienced globally in the year 2008. The exchange rate took a downward trend from the onset of the mid-1980s to the early nineties when it took a continuous upward trend. The exchange rate has maintained a continuous upward trend to date, signifying the increasing trend of transactional cost. Inflation sharply rose from the onset of the late 1980s to the mid-1990s before taking constant growth to date. All the variables exhibited non-stationarity at their levels.

Table 4.2: Unit root tests**Table 4.1: Unit root test at level and first difference -Augmented Dickey-Fuller (ADF)**

Level		At 0.05			Differenced	
Variable	ADF	P (t)	Remarks	ADF	Prob	Remarks
DCPS	-1.085	0.285	Unit root	-4.957	0.000	No unit root
REM	-3.147	0.003	No unit root	-3.147	0.003	No unit root
REER	-0.843	0.405	Unit root	-4.301	0.000	No unit root
INF	-3.232	0.003	No unit root	-6.697	0.000	No unit root

Source: Data Analysis Results (2020)

Banking sector development (DCPS) and Exchange rate (Reer) are non-stationary at level, meaning they have a unit root. On the other hand, diaspora remittance (REM) and Inflation (INF) are stationary at level, meaning they have no unit root. The critical values for Augmented Dicky Fuller are -3.668, -2.966, and -2.616 for 1 percent, 5 percent, and 10 percent respectively at level and -3.675, -2.969, and -2.617 for 1 percent, 5 percent, and 10 percent respectively for differenced data. Diaspora remittance (REM) and Inflation (INF) are stationary at level since their calculated values of -3.147 and -3.232 are greater than the critical value at the 5 percent level of significance. At first difference, all variables exhibit stationarity.

Table 4.2: Unit root test at level and first difference - Phillips-Perron (PP)

Level		At 0.05			Differenced	
Variable	PP	Prob	Remarks	PP	Prob	Remarks
DCPS	-1.227	0.000	Unit Root	-7.161	0.0000	No unit root
REM	-3.026	0.000	No Unit Root	-3.026	0.000	No unit root
REER	-0.769	0.000	Unit Root	-5.695	0.000	No unit root
INF	-3.411	0.002	Unit Root	-7.420	0.000	No unit root

Source: Data Analysis Results (2020)

Banking sector development (DCPS), the Exchange rate (REER), and Inflation (INF) are all non-stationary at level. The critical values for Augmented Philip Perron are -3.662, -2.964, and -2.614 for 1 percent, 5 percent, and 10 percent respectively at level and -3.668, -2.966, and -2.616 for 1 percent, 5 percent, and 10 percent respectively for differenced data. Conclusively, therefore, all the variables under analysis are stationary at first difference as their coefficients are greater than the critical values in both Augmented Dickey-Fuller and Augmented Philip Perron tests.

4.3 Diagnostic testing

The following tests were carried out and their results were discussed

4.3.1 Multicollinearity

The presence of Multicollinearity confirms the presence of perfect linear relationships among the predictor variables. The implication, therefore, is that either of the explanatory variables can be written as a linear combination of another (Gujarati and Porter, 2003). When Multicollinearity is present, estimating variables with precision proves to be difficult. Similarly, the confidence intervals tend to be wider, leading to the acceptance of

the null hypothesis. To test for Multicollinearity, the variance inflation factor (VIF) is employed. The Vif mean of 1.11 is less than 10. The rule of thumb is that if the mean is less than 10, it indicates that there is no Multicollinearity between the variables under study.

Table 4.3: Vif- Variance Inflation Factor

Variable	VIF	1/VIF
INF	.16	0.858669
REER	1.09	0.914080
REM	1.07	0.932673
Mean VIF	1.11	

Source: Data Analysis Results (2020)

4.3.2 Test for Autocorrelation

Autocorrelation is the correlation between members of a series of observations ordered in time. The estimates from analysis exhibiting autocorrelation maybe linearly unbiased but are inefficient. Therefore, in determining regression estimates, it is crucial to establish that there is no autocorrelation.

Table: 4.4: Breusch-Godfrey LM test for autocorrelation

Lags (p)	chi2	DF	Prob > chi2
1	1.008	1	0.3155

H0: no serial correlation

Source: Data Analysis Results (2020)

Breusch- Godfrey LM test for autocorrelation confirms the null hypothesis that there is no serial correlation. 1.008 is greater than 0.05 level of significance prompting acceptance of the null hypothesis. Similarly, The Breusch- Godfrey is 0.3155, which is greater than zero (0), indicating that there is no serial correlation. The establishment of no serial correlation affirms the statistical independence of the variables regressed.

4.3.3 Normality test

Table: 4.5: Jarque-Bera Test

Equation	chi2	DF	Prob > chi2
DCPS	1.281	2	0.52698
REER	0.516	2	0.77251
REM	121.312	2	0.00000
INF	8.279	2	0.01593
ALL	131.389	8	0.00000

Source: Author's Data Analysis Results (2020)

The test for normality indicates that the model has normal distributions given that the probability is less than the 0.05 level of significance. Diaspora remittance and inflation have normal distribution whereas banking sector development and exchange rate do not have a normal distribution.

4.4 Hypotheses analysis

4.4.1 Model 1: H₀₁: Exchange rate on banking sector development

Table 4.6

Log likelihood = 79.558142		Number of obs = 34				
	Coeff.	Std. Err.	Z	P>z	[95% Conf. Interval]	
DCPS						
REER	.602762	.0841242	7.17	0.000	.4378816	.7676424
INF	-.0294348	.0273013	-1.08	0.281	-.0829444	.0240748
Cons	.2313545	.1768472	1.31	0.191	-.1152597	.5779688
Var (e.DCPS)	.0021421	.0005195			.0013317	.0034458
LR test of model vs. saturated: chi2 (0) = 0.00, Prob > chi2 = . Estat eqgof						
Equation-level goodness of fit						
Variance						
Depvars	fitted	predicted	residual	R-squared	mc	mc2
Observed						
DCPS	.0063769	.0042348	.0021421	.6640852	.8149142	.6640852
overall				.6640852		

Mc = correlation between depvars and its prediction

mc2 = mc² is the Bentler-Raykov squared multiple correlation coefficient

(Source: Author's Analysis Results, 2020)

The first hypothesis stated that the exchange rate has no significant effect on banking sector development in Kenya. From the analysis in Table 4.6 above, the effect of the exchange rate on banking sector development is significant at 0.05 level (p 0.000 < 0.05). Similarly, the Z value is greater than 1.96 ($Z = 7.17 > 1.96$), hence rejecting the

null hypothesis. The explanatory power $R^2 = 0.6640$ indicates that 66.40% of changes in the banking sector development are attributable to the exchange rate. A limited number of studies have tested the relationship between exchange rate and banking sector development. Of the few studies, Hajilee & Chen (2019) found that the exchange rate indeed affects the banking sector development.

4.4.2 Model 2: H_{02} Exchange rate on diaspora remittance

The second hypothesis stated that the exchange rate has no significant effect on diaspora remittance in Kenya. From Table 4.7 below, the effect of exchange rate on remittance is significant at 0.05 level of significance ($p\ 0.021 < 0.05$). Similarly, the calculated statistic is greater than the critical value ($Z\ 2.30 > 1.96$), indicating the significant effect of exchange rate on diaspora remittance, prompting the rejection of the null hypothesis. Rsquared value ($R^2 = 0.1425$) shows that the exchange rate explains only 14.25% of the variation in diaspora remittance. Numerous other studies have found that the exchange rate affects diaspora remittance. Ochieng (2013): Gitahiga and Kabiru (2014) found that the exchange rate is a macroeconomic determinant of diaspora remittance. Similarly, Barro et al., (2007) found that exchange rate vitality may influence the decision of migrants to remit money back home. However, there is a mixed bag on the empirical evidence exchange rates have on diaspora remittance and vice versa. Acosta, Baerg & Mandelman (2009) found that diaspora remittance raises the exchange rate, meaning that diaspora remittance and exchange rate affect each other.

Table 4.7

Log likelihood	= -24.023207				Number of obs	= 34	
	Coeff.	Std. Err.	Z	P>z	[95% Conf. Interval]		
REM							
REER	4.0771	1.770123	2.30	0.021	.607722	7.546478	
INF	.7718817	.5744685	1.34	0.179	-.3540558	1.897819	
Cons	-6.79942	3.721182	-1.83	0.068	-14.0928	.4939622	
Var (e.REM)	.9484274	.2300274			.5895999	1.52563	
LR test of model vs. saturated: chi2 (0) = 0.00, Prob > chi2 = Estat eqgof							
Equation-level goodness of fit							
Variance							
Depvars	fitted	predicted	residual	R-squared	mc	mc2	
Observed							
REM	1.104429	.1560012	.9484274	.1412506	.3758332	.1412506	
Overall				.1412506			

Mc = correlation between depvars and its prediction

mc2 = mc² is the Bentler-Raykov squared multiple correlation coefficient

(Source: Author's Analysis Results, 2020)

4.4.3 Model 3: H₀₃: diaspora remittance on banking sector development in Kenya.

The third hypothesis stated that diaspora remittance has no significant effect on banking sector development in Kenya. From table 4.8 below, the effect of diaspora remittance on banking sector development is significant at 0.05 level of significance (p 0.001 < 0.05).

The calculated value of Z is greater than the critical value (3.22 > 1.96) prompting the rejection of the null hypothesis. Diaspora remittance explains 35.41% of changes in banking sector development ($R^2 = 0.35411$). The effect of remittance on banking sector development presents varied hypothetical arguments and mixed research findings. Acosta et al (2008) argue that remittances can only contribute to banking sector development if the recipients of diaspora remittance deposit the same into domestic banks. There is,

however, heightened debate on whether the ability of diaspora remittance to developing the banking sector is high in countries that are more financially developed. Interestingly, whereas Mundaca (2005) depicts that the impact of diaspora remittance on growth increases with financial development, Giuliano and Ruiz-Arranz (2009) opine that diaspora remittance promotes growth particularly in countries whose financial systems are less developed. Many other studies found that indeed diaspora remittances promote banking sector development. Tarus, (2015): Githaiga and Kabiru (2014): Giuliano & Ruiz-Arranz (2009): Misati and Kamau (2018) all concluded that diaspora remittance contributes to banking sector development noting that diaspora remittance is an alternative way of overcoming liquidity constraints.

Table 4.8

Log likelihood	= -13.384544	Number of obs	=	34		
	Coeff.	Std. Err.	Z	P>z	[95% Conf. Interval]	
DCPS						
REM	.0338712	.0105113	3.22	0.001	.0132695 .054473	
INF	-.1109022	.035346	-3.14	0.002	-.180179 -.0416254	
Cons	1.42811	.0397841	35.90	0.000	1.350135 1.506086	
Var (e.DCPS)	.0041187	.0009989			.0025605 .0066254	
LR test of model vs. saturated: chi2 (0) = 0.00, Prob > chi2 = . Estat eqgof						
Equation-level goodness of fit						
Variance						
Depvars	fitted	predicted	residual	R-squared	mc	mc2
Observed						
DCPS	.0063769	.0022582	.0041187	.3541153	.5950759	.3541153
Overall				.3541153		

Mc = correlation between depvars and its prediction

mc2 = mc² is the Bentler-Raykov squared multiple correlation coefficient

(Source: Author's Analysis Results, 2020)

4.4.4 Model 4:H₀₄: mediation effect of diaspora remittance on the effect of the exchange rate and banking sector development in Kenya.

The fourth hypothesis stated that diaspora remittance has no significant effect on the effect of the exchange rate on banking sector development in Kenya. Table 4.9 below shows the results of the effect of the exchange rate on banking sector development mediated by diaspora remittance

Table 4.9

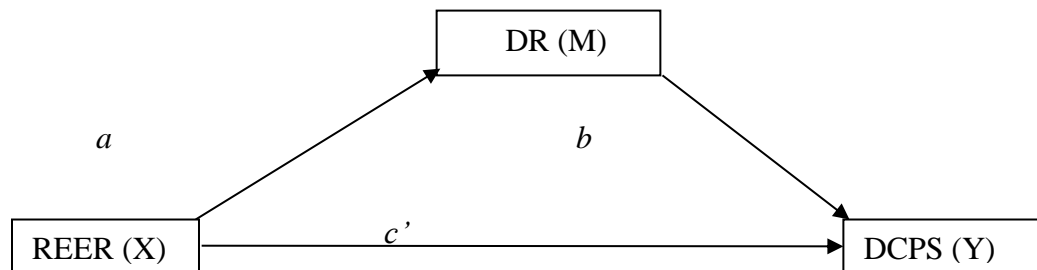
Log likelihood	= 33.403988			Number of obs	=	34
Coeff.	Std. Err.	Z	P>z	[95% Conf. Interval]		
DCPS						
REM	.0160882	.0076692	2.10	0.036	.0010569	.0311195
REER	.5371688	.0851091	6.31	0.000	.370358	.7039796
INF	-.041853	.0263626	-1.59	0.112	-.0935227	.0098168
Cons	.340745	.1743848	1.95	0.051	-.001043	.682533
Var (e.REM)	.9987884	.2422418			.6209073	1.606646
Var (e.DCPS)	.0018966	.00046			.0011791	.0030509
LR test of model vs. saturated: chi2 (1) = 1.76, Prob > chi2 = 0.1847 estat eqgof						
Equation-level goodness of fit						
Variance						
Depvars	fitted	predicted	residual	R-squared	mc	mc2
Observed						
REM	1.104429	.1056402	.9987884	.0956515	.3092757	.0956515
DCPS	.0064648	.0045682	.0018966	.7066229	.8406087	.7066229
Overall				.6715933		

Mc = correlation between depvars and its prediction

mc2 = mc² is the Bentler-Raykov squared multiple correlation coefficient

(Source: Author's Analysis Results, 2020)

The above mediation can be demonstrated in the diagram below



(Source: Adopted from Hayes, 2013)

In the model, a represents the coefficient for X in a model predicting M (The mediator, Diaspora remittance), from X (Exchange rates), and b and c' are coefficients in a model predicting Y (Banking sector development) from both M and X , respectively. It, therefore, follows that $ab = c - c'$. Therefore, $0.602762 - 0.5371688 = 0.0655932$. From the analysis, the coefficient of 0.602762 reduced from 0.602762 to 0.5371688, by 0.0655932, indicating that diaspora remittance mediates the relationship of the effect of exchange rate on banking sector development, prompting the rejection of the null hypothesis. 0.0655932 was tested using the Sobel test (1986) to test for significance and the results are as demonstrated in the below table.

Table 5.0: Sobel Test results

	Test Statistic	Std. Error	p -values
Sobel test	2.16371082	1.01219206	0.03048655
Aroian test	2.14013543	1.02334221	0.03234382
Goodman test	2.18808288	1.00091771	0.02866357

Source: Data Analysis Results (2020)

From the analysis, a (the coefficient for Exchange rates in the model predicting Diaspora remittance from Exchange rates), and b (the coefficient predicting Banking sector development from both exchange rates and diaspora remittance) and their respective standard errors are subjected to the Sobel test (1986) to test for significance. The results of the Sobel test indicate that diaspora remittance mediates the relationship on the effect of exchange rates on banking sector development ($p = 0.0304, < 0.05$), as shown in Table 5.0

Table 5.1: Summary table

Hypothesis	How it was tested	Results	Conclusion
The exchange rate has no significant effect on banking sector development in Kenyan	Regressing exchange rates on banking sector development	$p = 0.0000,$ < 0.05	Significant (Null rejected)
The exchange rate has no significant effect on diaspora remittance in Kenya.	Regressing exchange rate on diaspora remittance	$p = 0.021,$ < 0.05	Significant (Null rejected)
Diaspora remittance has no significant effect on banking sector development in Kenya.	Regressing diaspora remittance on banking sector development	$p = 0.001,$ < 0.05	Significant (Null rejected)
Diaspora remittance has no significant effect on the effect of the exchange rate on banking	Regression of both exchange rate and diaspora remittance on banking sector development	$p = 0.0304,$ < 0.05	Significant, Mediation exists (Null rejected)

Source: Data Analysis Results (2020)

CHAPTER FIVE: SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Overview

This chapter presents a summary of findings, conclusions, and recommendations. The chapter has been structured in such a way that firstly, a summary of the main findings of the study is presented. Secondly, there is a discussion of the emerging issues based on the findings, with in-depth observation of policy recommendations. Lastly; the suggestions for further research are indicated.

5.1 Summary of findings

The study endeavored to examine the effects of exchange rates on banking sector development mediated by diaspora remittance, as the main objective. The other objectives included the assessment of the effect of exchange rate on banking sector development in Kenya, the determination of the effect of exchange rate on diaspora remittance in Kenya, the assessment of the effect of diaspora remittance on banking sector development in Kenya, and the establishment of the mediating effect of diaspora remittance on the effect of the exchange rate and banking sector development in Kenya. Inflation was controlled in the study. The model analyzed was tested for heteroscedasticity, Multicollinearity, and normality to confirm that the regression model met all the assumptions of the OLS regression model. Results indicate that exchange rate affects banking sector development ($p = 0.000, < 0.05$), exchange rate affects diaspora remittance ($p = 0.021, < 0.05$), diaspora remittance affects banking sector development ($p = 0.001, < 0.05$), and diaspora remittance mediates the effect of exchange rate on banking sector development in Kenya ($p = 0.0304, < 0.05$).

5.2 Conclusion

The study established that the exchange rate had a positive significant effect on banking sector development. The findings are similar to the findings of Hajilee & Chen (2019) who determined that banking sector development responds positively to changes in exchange rates. The appreciation of the exchange rate affects the banking sector development, consequently translating to the effect on the entire financial market. Kenya, being a developing economy is bound to experience pronounced effects than it would be in developed economies where the banking system is more developed.

The study found that the effect of the exchange rate on diaspora remittance is insignificant but was in compliance with expectations of economic apriori because it indicates a direct positive relationship with the dependent variable (banking sector development). This is perhaps because irrespective of the cost of a transaction, people in the diaspora can still decide to remit particularly if they remit to cushion their beloved ones in times of economic hardship. Most studies that have been previously carried out concluded that the exchange rate is a significant explanatory variable of the exchange rate on migrant diaspora remittance. This assertion, despite its controversy, was supported by Orozco and Fedewa (2005) who concluded that migrants accordingly adjust their remittance to exchange rate changes for them to send home the same value in terms of their currency. Similarly, El-Sakka and McNabb (1999) concluded that migrants might opt to remit more back home particularly in periods of economic inflation, perhaps to help them secure real assets like land which might be increasing in value because of inflation.

The study found that diaspora remittance significantly affects banking sector development. The results are in line with other studies such as Tarus (2015), Misati and Kamau (2018), Akinpelu et al (2013), and Giuliano, & Ruiz-Arranz, 2009 among others. However, the findings contradict with findings of Charles & Ezike (2017). The study further concluded that diaspora remittance partially mediates the effect of the exchange rate on banking sector development, since diaspora remittance is a foreign capital inflow.

5.3 Implications on theory

In Kenya, financial liberalization plays a vital role in the development of the banking sector as a player in the financial sector. The financial liberalization theory holds that limiting capital inflows impacts the financial sector. One of the factors that limit capital inflow is transaction cost, particularly for diaspora remittance as a capital inflow that may flow into the country due to altruistic reasons. The exchange rate is a primary component of transaction cost, which, if curtailed at reasonable levels, would trigger more remittance which is channeled primarily through the banking sector. One way of liberalizing the financial sector in its entirety is by considering the exchange rate regime and finding ways to better it since a country adopts an exchange rate regime that suits its interests. Infact, the agenda for Sustainable Development Goals (SDG) of the United Nations is to lower the cost of remittance to less than 3% by 2030 and eliminate remittance corridors with costs higher than 5% by 2030. The study contributes to the theory that foreign capital inflows, primarily, diaspora remittance is quite significant.

5.4 Implications on Policy

The findings of this study set forth fundamental implications for policymakers particularly in Kenya, and other developing countries possessing similar features and the same stage of development. The findings indicate that the exchange rate as a microeconomic variable affects banking sector development, which by extension forms part of the economy. Infact, studies indicate that the banking sector contributes totwo-thirds of the country's financial sector and 7.3 % of the country's GDP. The Kenyan government should therefore put policies in place that promote the establishment of the banking sector to harness more remittance and consequently translate to economic growth.

5.5 Contributions of the study

The study makes some crucial implications to both theory and practice of finance and macroeconomics. Particularly, it significantly responds to calls by academic and policy researchers for studies that focus on macro-economic factors and the development of the banking sector and the financial sector by extension. The exchange rate as a microeconomic variable and banking sector development is important to policymakers in trying to understand how to develop the banking sector, which is a key component of the GDP. This would further help the country in adopting a comprehensive policy mix that will ensure that the exchange rate is monitored, and diaspora remittance is well harnessed for the betterment of the banking sector and the whole economy in the long run.

5.6 Recommendations

The outcome of this study provides useful insights into improving exchange rate regimes. The Kenyan government needs to develop exchange rate regimes that foster economic growth. Particularly, a floating exchange rate regime promotes economic growth, which is the interest of every nation. Keeping in mind that the banking sector contributes to a sizeable proportion of the GDP, exchange rate regimes must favor the development of the banking sector, besides also promoting remittance harnessing. Now that the study found that remittance mediates the effect of the exchange rate on banking sector development, it calls for the government to develop policies that curtail transaction costs, which may impede the inflow of remittance as a foreign capital inflow. The study recommends that the government should diversify its economic activities to enjoy the benefits of a stable exchange rate. Particularly, the government should provide incentives for value addition, especially for agricultural exports to significantly contribute to the bulk of receipts of foreign exchange. Transaction costs should be kept at affordable realms to promote the inflow of more remittance which in turn develops the banking sector, and in the end, translates to economic growth.

5.7 Suggestions for further research

Drawing from the scope and limitations of the current study, the following areas are suggested for further research. First, a similar study should be done utilizing panel data techniques to cover many countries like the regional economic trading blocks and even Sub-Saharan Africa. Second, a study could also be undertaken to incorporate all the necessary variables that theoretically ought to influence banking sector development utilizing different indicators.

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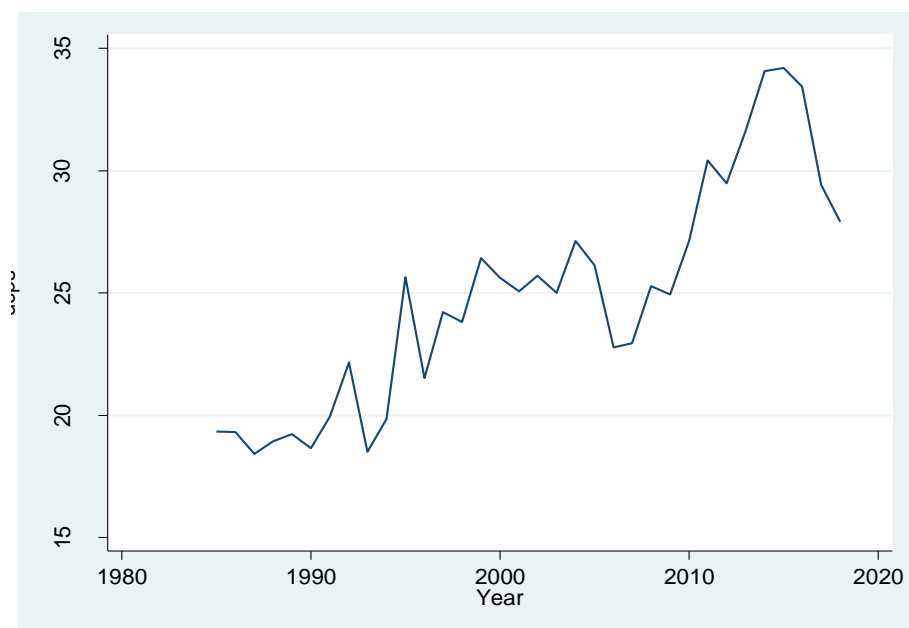
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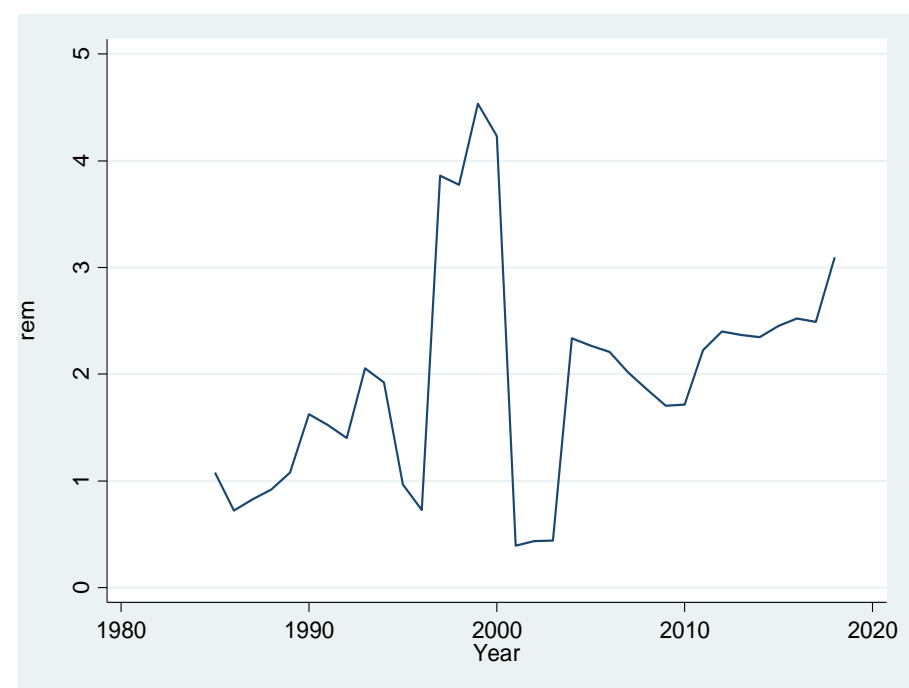
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APPENDIX I: Graphical Representation of Data

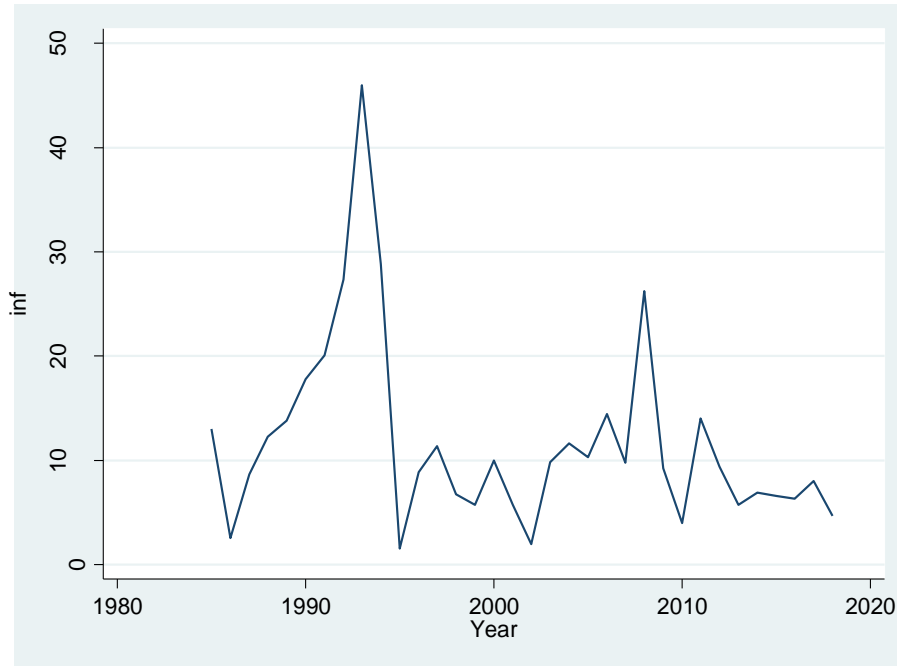
Banking sector development



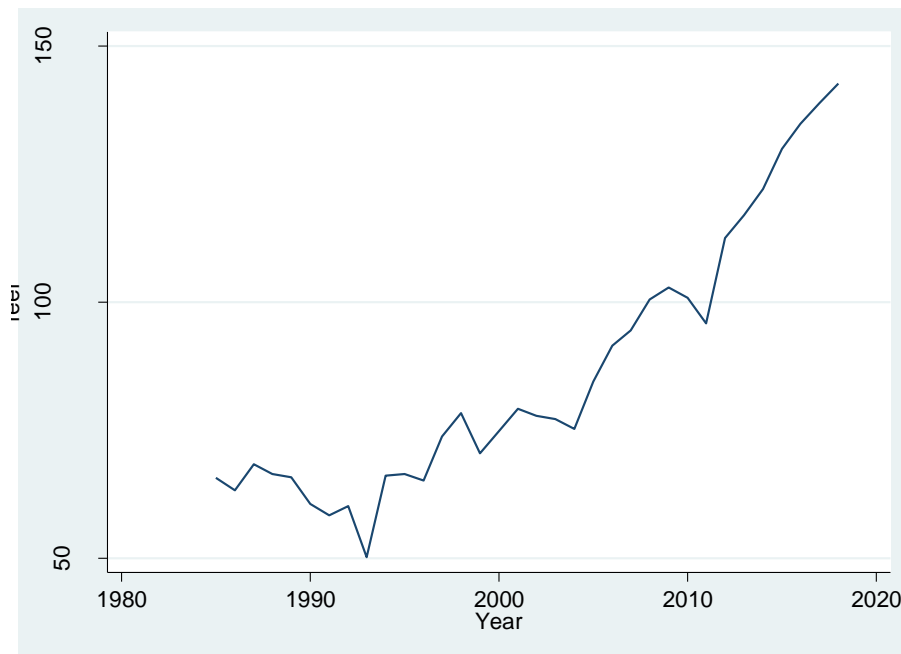
Remittance



Inflation



Exchange rate



APPENDIX II: Raw Data

YEAR	Log DCPS	Log REM	Log REER	Log INF
1985	1.286323614	1.0757886	1.968109201	1.114163
1986	1.285826988	0.720252614	1.910143961	0.403854
1987	1.265205157	0.828020149	1.8831502	0.936397
1988	1.277062113	0.916295722	1.871456174	1.088666
1989	1.283854573	1.075682304	1.865932668	1.139543
1990	1.270830926	1.624523563	1.842047289	1.249976
1991	1.300118598	1.522177776	1.828402078	1.302861
1992	1.34542177	1.398930312	1.842359573	1.436677
1993	1.267082429	2.053969306	1.767823498	1.662558
1994	1.297413722	1.920498137	1.875697762	1.459609
1995	1.408812831	0.967219758	1.884795364	0.191543
1996	1.332727063	0.726746723	1.879153246	0.947634
1997	1.384146417	3.862640107	1.934700402	1.055449
1998	1.376790625	3.774037439	1.963126441	0.827527
1999	1.421888079	4.535155716	1.913389944	0.759063
2000	1.408496696	4.233647429	1.930745328	0.999132
2001	1.399169991	0.39207144	1.955206538	0.758806
2002	1.409962737	0.434625745	1.952453396	0.292546
2003	1.397848167	0.441780787	1.936312634	0.991921
2004	1.43347805	2.334908129	1.914131513	1.065357
2005	1.417161356	2.268082854	1.952889265	1.013376
2006	1.357308788	2.20889712	1.986368594	1.15998
2007	1.360464482	2.018912106	2	0.9894
2008	1.402806632	1.859073641	2.024567757	1.418961
2009	1.39671641	1.705659354	2.034668556	0.965396
2010	1.433507104	1.714389395	2.02489596	0.597847
2011	1.483179733	2.226633491	2.001041058	1.146825
2012	1.46956908	2.402212382	2.069889997	0.972099
2013	1.500141516	2.367249884	2.086359831	0.757206
2014	1.53232291	2.344820258	2.105646413	0.837472
2015	1.533898825	2.451684119	2.130140706	0.818369
2016	1.524262154	2.52156462	2.147738141	0.799145
2017	1.468657272	2.491519543	2.161158292	0.903401
2018	1.445929429	3.093777972	2.174321527	0.671156