

**ASSESSING THE IMPACT OF REMITTANCES ON THE MACROECONOMIC
PERFORMANCE OF GHANA FROM 1990 TO 2010**

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DECLARATION

I, Adams Owusu hereby declare that this thesis is my own work toward the award of the Executive Masters in Business Administration Degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgments has been made in the text.

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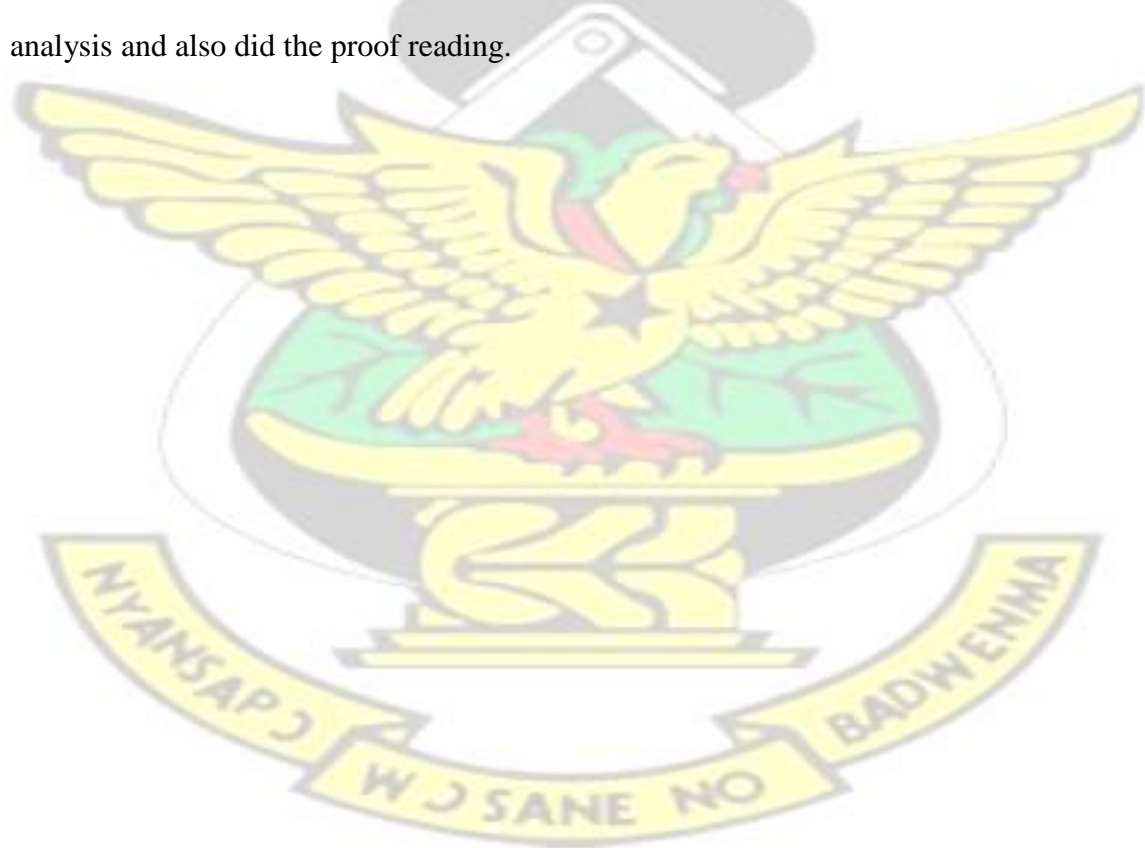
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DEDICATION

This thesis is dedicated to my wife Anita and to our children Maame Yaa and Nana Kwabena.

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LIST OF ABBREVIATIONS

GDP – Gross Domestic Product

INSTRAW – International Research and Training Institute for the Advancement of Women

BOP – Balance of Payments

IMF – International Monetary Fund

OECD – Organisation for Economic Co-operation and Development

UK – United Kingdom

FDI – Foreign Direct Investments

IOM – International Organization for Migration

UPU – Universal Postal Union

US – United States of America

USD – United States Dollar

BOG – Bank of Ghana

GSS – Ghana Statistical Service

GOG – Government of Ghana



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ABSTRACT

Remittances have had a significant effect on the economy of Ghana. Remittances in Ghana equalled about USD 12.5 billion in 2010 which is about 11% of the country's total Gross Domestic Product (GDP). This explanatory study looked at the relationship between remittances and some macro-economic variables or indicators such as Gross Domestic Product (GDP), Balance of Payment, inflation, unemployment and national debt. Using the Ordinary Least Squares (OLS) method, remittances interacted positively with Gross Domestic Product (GDP), but had an inverse relationship with inflation, unemployment, Balance of Payments (BOP) and national debt. As a result, the study provides some recommendations as increasing remittances inflow, creating appropriate savings for international migrants, licensing of more money transfer organizations, improvement in education, communication and awareness of remittance channels.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Remittances create an impact on a country's economy through various ways (Addisson, 2004). Among economists, however, the question remains as to whether remittances create and promote a positive impact on a country's economic growth (Guiliano & RuizArranz 2006). Those that believe remittances do not contribute to economic growth point to their expenditure on conspicuous consumption (Rahman, 2009) and that any savings are being spent on consumption rather than for the accumulation of productive assets (Stahl and Arnold, 1986), and the theoretically low marginal propensity to consume out of transitory income. Those that argue for the positive effects of remittances focus on the increased consumption levels in the economy and its multiplier effects (Stahl and Arnold 1986), development of the payment systems and financial bodies that handle and deal in remittance payments (Aggarwal *et al.* 2011), use of remittances as foreign exchange (Ratha 2005), and the role remittances play in developing economies as a substitute to debt that helps decrease individuals' credit constraints in such developing economies where micro-financing is not developed and widely accessible (Guilamo and Ruiz-Arranz 2006). These arguments may be separated into the classical opposing camps of development economists; those who believe in a top-down approach to poverty alleviation placing primary focus on the development of institutions, and those who argue for a bottom-up approach in which the individual is first lifted out of the poverty trap from which point society follows.

Many researches have tried to look at the impact, positive or otherwise, of remittances on economic growth and poverty alleviation. For instance, Pradhan *et al.* (2008), in a crosssectional study that involved 36 countries and using a linear regression model of

which remittances was one of five variables used, found out that although remittances do have a positive effect on economic growth in the countries used, the effect was small. In a study conducted between 1975-2003 covering 99 countries, Aggarwal *et al.* (2011) finds that remittances have a positive effect on Gross Domestic Product and bank deposits. The authors then inferred the positive effects of remittances on the development of the economies of the countries as a whole by linking existing studies that showed positive impacts of these two variables, ie high bank deposits and credit GDP, on economic growth. Taylor (1999) also finds out that for every US\$1 Mexican migrants sent back home, Mexico's Gross National Product increases from between US\$2.69 and US\$3.17. In contrast, Spatafora (2005) finds no direct linkage between per capita output growths and remittances. Moreover, in one of the larger cross country surveys, Chami *et al.* (2003), using a sample of 113 countries, came to a conclusion that remittances have an adverse effect on economic growth.

Several other published studies in relation to remittances have focused specifically on the alleviation of poverty rather than overall economic growth, (Adams, 2003). Against this background, this proposed study seeks to investigate into the relationship between remittances on the macroeconomic performance of Ghana, specifically Gross Domestic Product (GDP) growth, inflation, unemployment, national net and gross debt, and Balance of Payment (BOP) (current account) balances.

1.2 Statement of Problem

It is widely believed by economists that remittances can affect an economy through consumption, growth, income distribution, savings, investments and poverty reduction.

The importance of remittances becomes crucial in developing economies where credit market imperfections exist. Recent researches in finance and development economics have recognised the significant part remittances play as a key factor in the development

projections of developing economies and its possible positive effect as a growth tool in these developing economies (Addison, 2004).

The question is couched around whether remittances are statistically important in determining economic growth or not. Another important question in relation to remittances and economic growth of Ghana is the cause and effect, i.e. whether remittances cause the economy of Ghana to grow or vice-versa. The answers to the questions are of significant consequence in affecting policy questions affecting remittances. Such policy questions include the opportunity cost attributable to the emigration of skilled workers, the financial treatment of recipients of remittances, the composition of domestic institutions for the transmission of remittances and the style and placement of investment incentives targeting remittance recipients.

Though there have been quantitative studies on the effects of remittances on the economy of some countries, there is not much research done with specific reference to Ghana. Some studies have, however, qualitatively considered the impact of remittances on an economy in terms of social measures such as education, health and democratization (Rahman, 2006), and development budget increases. This study therefore seeks to do a quantitative analysis on the economic linkage between transfers from abroad and economic growth in Ghana. With this aim in mind, this research explores the direct linkage between economic growth and remittances in Ghana.

1.3 Research Objectives

The research examines the impact of remittances on the macroeconomic performance of

Ghana in the years 1990 to 2010. Within this scope, the objectives of this research are to:

1. Identify and assess the sources and channels of remittance to the economy of Ghana.
2. Assess the trend of the components of remittances in the Ghanaian economy.
3. Assess the effect of remittances on the macroeconomic performance indicators of Ghana.

1.4 Research questions

To help achieve the goals of this research, answers will be sought to the following questions.

1. What are the sources and channels of remittances to the economy of Ghana?
2. What is the trend of the components of remittances in the Ghanaian economy?
3. What is the effect of remittances on the macroeconomic performance of Ghana?

1.5 Significance of the research

This research is important since it will seek to provide the macro economy of Ghana an in-depth knowledge on the impact of remittance on its performance. It will also provide the government with vital information for policy formulations and directions that will contribute to economic growth.

Students and researchers can use the study findings as a rich source of literature for future studies.

1.6 Brief Methodology

A quantitative approach is adopted by this research to help achieve its objectives. The aim of using this approach is to help the researcher gather data in an empirical way to investigate the cause-effect relationships between remittances and macroeconomic performance in Ghana.

To gather data on remittances and macroeconomic performance of Ghana, a survey using structured questionnaire is carried out. To achieve the objectives of the study, data on remittances and the macroeconomic performance of Ghana from the Bank of Ghana, the International Monetary Fund, the Ghana Statistical Services, the Ministry of Finance and Economic Planning and other reliable data sources are used.

The research also draws on secondary data. To find the relationships between the variables used in the research, various graphical analyses will be done to ascertain the cause and effect relationship between remittances and the macroeconomic performance of Ghana. The main macroeconomic indicators to be analysed are Gross Domestic Product, inflation, unemployment, National Gross and Net Debt and Balance of Payment (current account balances). These macro-economic variables are chosen and analysed since they provide a ready and easy means by which the relationships can be established and interpreted.

1.7 Organization of the Research

This research is structured into five chapters.

Chapter One gives an account of the background of the research, statement of the research problem, objectives of the research, research questions, the research's significance, the research method used, organization of the research and its limitations. Chapter Two looks at the literature review and discusses the literary works of other researchers that are in relation to this research.

Chapter Three discusses the procedures used by the researcher to achieve the objectives of the research.

Chapter Four presents how the collected data of the research is processed and analysed. Chapter Five presents the summarised findings, conclusions and recommendations of the research.

1.8 Scope and Limitations of the study

This study will focus on the macro economy of Ghana between 1990 and 2010. The study will investigate into the impact of remittance and sources of remittance.

All researches have limitations. This one is not an exception. Limitations are occurrences that arise in a study that are out of the control of the researcher. The major limitation that this study anticipates is an inadequate sources of literature needed for the research since there is a wide knowledge gap in the topic under study in Ghana.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Chapter Two looks at the literature review and discusses the literary works of other researchers that are in relation to this research. The literature discusses the concept of remittances, determinants of remittances, the impact of remittances and the measurement of remittances. The chapter proceeds as follows.

2.1 Conceptual definition of Remittances

Remittances are the most evident factor that draws a relationship between development and migration and therefore play a principal part in researches and policy initiatives which seeks to focus on the relationship that exists between these two (United Nations International Research and Training Institute for the Advancement of Women, INSTRAW, 2007). According to INSTRAW (2007), since the early 1990s, there has been a significant increase in the volume and amount of remittances sent by migrant workers the world over to their home countries. This has led economist to make very positive assessment and projections about the potential developmental effects of remittance for source countries and at the same time, nurturing the prospects these remittances will have on the economies on destination countries and the fact that such positive developmental effects of remittance could lead to a deceleration or reduction in migration flows in the future (INSTRAW, 2007). Remittances are a significant source of external finance (Samson, 2011). They come in the form of aid that migrant workers send to their families back in their home countries as a means of financial support to the household (Samson, 2011).

Addison (2004) defines remittance as that portion of migrant earnings sent from the migration destination to the place of origin. It must be sent in kind, if usage is often

restricted to denote monetary and other transfers sent by most migrant workers to the households and communities in their country of origin. Internationally, this is seen as a mechanism of social protection. There are several factors that determine the sustainability of remittance over time. Key among these factors are the expected migration flow, whether migrants come alone or with family and whether this will change over time.

Currently, in developing countries, remittances exceed foreign aids as a source of external finance. It is actually only second to foreign direct investment in this regard.

2.2 Measuring remittances and measuring instruments

2.2.1 Measuring Remittances

Most often, the economic importance of remittances are not fully captured by the government's official balance of payment data in both the sending and receiving countries. The key for the measurement of the economic effect of remittance is the transfer of the resource – which could be money or in-kind – which is made by the migrant to the home country. It can be deduced that monetary transfers in US dollars (since US Dollars is the major international transfer currency) can boost the availability of foreign exchange in the migrant's country of origin directly. Moreover, remittances in-kind help the recipient country to reserve foreign exchange. The different format for sending and receiving remittances makes this distinction important. While some of the modalities for sending and receiving remittances are recorded, others are not. That is to say, remittances sent through the recognized formal avenues are recorded in the receiving or home country's balance of payment current account. However, several cash remittances are sent through informal means, such as through carriers and friends and these are not recorded in the official statistics of the receiving country. Moreover, when remittances are in-kind, for example, in the form of household goods, only part may be recorded as imports. Migrants may also donate to churches and other charitable organisations founded by co-nationals in the host

countries. Part of these donations may find its way back to the home country for charitable causes and may also go unrecorded.

Migrants may also make payments such as tuitions fees, insurance premiums and international airfares, for friends and relatives from their country of origin. In the economic sense, all these transactions should be recorded as remittances but they are not. Therefore, in order not to underestimate the true impact of remittances on the economy of the receiving country, all these inflows which are unrecorded should be taken into consideration in the measurement criteria. According to the International Monetary Fund's (IMF) Balance of Payment Statistical Yearbook, there are three (3) items in the balance of payment report at country level that statistics on remittances are available from;

- “Workers’ remittance” i.e. monies sent by workers abroad for more than one year;
- “Compensations of employees” i.e. gross earnings of non-nationals living abroad for less than a year;
- ‘Migrants transfer’ i.e. net worth of migrants moving from one country to another.

2.2.2 Instruments for Measuring Remittances

The conventional variables used in regression models or instruments for the estimation of remittance impact could be a possible source of variation in the estimation results in different studies. Researchers have long found it a challenge in finding an instrument or set of instruments which appropriately corrects for the endogeneity of remittances. Two important factors affect the selection of an instrument for measuring remittance. Firstly, there must be a correlation between remittances and the instrument and the instrument's impact on the individual country's economy must solely be through its effect on remittances. Two instruments readily come to mind – growth in the developed country where the migrants from the remittance receiving country reside and per capita GDP.

However, these two variables also do have a direct effect on economic growth. Secondly, growth in the developed countries where remitters mostly reside and work are most often correlated with trade flows. Trade flows on the other hand, have an independent effect on growth in the economy.

There is a general challenge in finding an appropriate instrument which aptly explains the relationship between economic growth and remittance. This is because most instruments which have a relationship with remittance – e.g. foreign and domestic macroeconomic variables – also affect economic growth. Because of this, these internal instruments (which are also known as lagged right-hand-side variables) have received much criticism, and external instruments such as migration have been suggested as the variable of measurement between remittance and economic growth. However, these external instruments are not an improvement over the internal instruments as they may seem. For example, in order to obtain a time varying instrument, the distance between the migrants' domiciled country and that of the home country receiving the remittance must be multiplied by the host country's GDP, because it is exogenous and time invariant. For this reason, distance instruments may have a strong correlation with the economic growth rate in the remittance receiving country; same can be said for migration instrument. Since migration shares are reported only within certain periods, and are fixed, they must also be multiplied by the host country's GDP in order to make the instrument time varying.

Therefore, other likely candidates that can be used as instruments are other determinants of remittances such as their transaction costs. Where the direct observation of the cost variables is absent, other observable variables may be used to capture the general movements of remittances throughout the world including transaction cost changes and that is the ratio of remittances to GDP of the other recipient countries. Although this ratio does not completely eliminate all endogeneity, it is significant over the lag-driven internal

instruments and is superior to other past attempts by researchers at obtaining an external instrument in measuring the correlation between remittances and growth. By not including the remittances-to-GDP ratio of the receiving country, the ratio of remittances to GDP of all other recipient countries is virtually independent of a direct linkage with other local macroeconomic variables. Furthermore, although there are expectations that the ratio will capture income growth in the developed world, the trade effects correlation is diluted; this is to the extent that for every given country, the ratio also include the income movements in countries that it has little trade with. That is, there is a diversification effect that reduces any correlation between the growth rate in the remittance receiving country and the instrument of measurement.

2.3 Determinants of Remittances

There are two reasons why the researcher needs to understand the motivations of migrants to remit home and these reasons are necessary in analysing the broader economic consequences of remittances (Chami *et al*, 2003).

Firstly, the migrants' motivation to go abroad affects the amount of money that the migrant remits to family members in the receiving country at any given period of time.

The economic activity in the receiving country, in turn is determined by the size and timing of these remittance flows. Secondly, the purposes for which these remittances are intended and what these remittances are actually used for is also a significant determinant of their economic effect on the recipient country. The motives why migrants send remittances home are discussed next.

2.3.1 The Altruistic Motive

This is the view that the migrant is motivated to remit his or her family back in the home country because he cares for them. Under this model, the migrant attains a certain level of

satisfaction when he remits his family with a concern for their welfare. It has been empirically established by researchers that migrant workers usually have a higher level of education than other family members at home. It is therefore, inferred that, as the migrant worker settles in a country where, averagely, wages and per capita income are higher compared to the home country, their income levels after securing a job will be higher than workers of comparable status at home.

However, the altruistic model predicts that remittances, over time, would decrease. There are two reasons for this decrease; firstly, as the migrant worker stays longer in the host country, family attachment decrease and secondly, the migrant workers may bring their immediate family (especially spouse and children if any) to stay with them in the host country if they plan to stay for a long period of time and possibly retire there. This would reduce remittance from the migrant to the family back at home.

The opposite is true, in that, a migrant who returns to the home country to stay brings in more funds into the home country thereby increasing remittances significantly.

2.3.2 The Self- interest Motive

This motive is the inverse of the altruistic motive. In this situation, the migrant, when sending remittances to his home country is principally motivated by his own financial and economic self-interest. The successful emigrant, having saved enough money in the host country, sees the need to accumulate wealth in the home country. He therefore invests in his home country buying land, houses, financial assets and other properties. Although the risk profile of these assets may be higher, their rate of return may also be higher in the home country than in the host country. In such instances, the family back home acts as a trust agent administering these properties on behalf of the migrant. Another motive for remitting home is the expectation of receiving an inheritance from one's family members

especially parents. In this instance, migrants who through remittances, contributed to increase the family wealth, are likely candidates to receive inheritance in the future.

2.3.3 Implicit Family Contract I: Loan Repayment

These are economic theories that use the family rather than the individual as the principal unit of analysis to explain remittances; the theory assures that there is implicit contract between those who live abroad and those who live in the home country. This implicit contract has a horizon which could be several years and an inter-personal dimension. The contracts have features of investment and repayment.

There is the loan repayment theory in which the family invests in the emigrants' education and more often than not, also pays for his migration i.e. pays for his travel and subsistence in the host country. This is the loan (investment) feature of the theory. The repayment of the loan starts when the migrant has settled in the host country and overtime, his income level increases. He then starts to repay the loan (i.e. the principal and interest) to the family at home in the form of remittances. It can therefore be said that the family sees the migrant as a high yielding asset and invests in him. He in turn will earn a higher income in a foreign country than other family members of comparable status back home. In this model, there may be different time profiles of remittances. This will mainly depend on the period of time it takes the migrant workers to find work in the foreign labour market and also for how long he stay in the host country. The quicker the migrant is able to find work in the host country, the earlier he will be able to start remitting the family back home. The income profile of the migrant, to a large extent, determines how much will be remitted. Unlike the altruistic model, remittances do not decrease overtime.

2.3.4 Implicit Family Contract II: Co-Insurance

A variation of the implicit family contract theory between the family at home and the migrant is the concept of diversification of risk. The idea behind this concept is this: because capital and insurance markets in the world are incomplete, many risks cannot and are not diversified because of the absence of financial assets that can be used to hedge them. Moreover, borrowing restrictions reduces the ability of most migrants to smoothen their consumption and investments. This model therefore assures that, if the economic risks between the home country and the foreign country are not positively related, than the economic risks facing the family can be diversified by sending mostly the educated members abroad. The family can then fall on, and be supported by, the migrant workers in time of need. On the other hand, the family can also serve as a form of insurance for the migrant too in times of need in the host country. In this model, remittances serve as an insurance claim against the co-insurance policy of emigration. However, potential issues of enforcement might arise and the parties to the contract might not respect the terms of the contract. This problem is, nevertheless, mostly resolved because these implicit family contracts are mostly contracted on considerations of altruism and family trust, qualities that, very often, are absent in legally sanctioned contracts.

2.4 Global and Regional Trends in Remittances Flows

There have been rapid increases in the global flow of workers' remittances in the last three decades. From a meagre US\$6 billion in the 1970, to about US\$50 billion in the 1990s, it has increased to US\$114 billion in 2003. Of this amount, developing countries receive the greater portion of remittances. For example, in 2003, there were US\$104 billion in remittance flow to developing countries. That is about 1.4% of the total Gross Domestic Product (GDP) of developing countries and is also equal to about 91% of all remittances worldwide.

The increasing volume and impact of remittances on the recipient countries have heightened the attention being paid to it. Totalling US\$ 188 billion in 2005, it was more than the amount of money that developing countries received in official assistance. Indeed the amounts could be higher as there is evidence that some remittance flows are underreported or unreported at all. It is estimated that remittances through informal channels which go unreported could add at least 50 percent to global recorded flows. Regionally, although most of the reported flows go to countries that are out of sub-Saharan Africa, remittances to the sub-Saharan African region increased by 55% between 2000 and 2005, to approximately US\$7 billion, and increased by 81% for developing countries as a whole.

Studies in the sub-Saharan African region using data from different households in different countries have shown how remittances are used by recipient households. Most of these remittances are basically used to address the issue of poverty, which is a huge challenge for most families in sub-Saharan Africa. The long-term potential developments of these remittances are only countered and are determined by the excess left unconsumed after basic needs are met.

In contrast to India, which receives 33% of all global remittance, Africa receives about 4% of all remittances, which is the smallest per region. Countries in the Caribbean and Latin American receive about 25% of global remittances, which is just about the same percentages as countries in the Pacific and East Asia region. On the average, remittances flows to countries in the Caribbean and Latin American and the Pacific and East Asia regions have grown more rapidly than the average for Africa since the 1980s. In all, China, India and Mexico – the three countries that receives the most remittances globally – received more than 33% of all remittances to developing countries in the years 2005.

Only one African country - Nigeria – was among the top 25 countries. Three South Asian countries – India, Bangladesh and Pakistan – made the list. In comparison to GDP, the quantum of remittances to sub-Saharan African countries is less than when compared to the GDP–remittance relation in other developing countries. While it is about 5% on the average for other developing countries, it is just 2.5% for sub-Sahara African countries between 2000 and 2005. In most of these countries remittances are a significant source of foreign exchange.

However, remittance sent through informal channels to sub-Sahara African countries, which is about an estimated 45 – 46% of what is sent through formal channels, are much higher than in other regions. Moreover, intraregional remittances, which is very common in sub-Sahara African is often unreported in the balance of payment accounts of those countries. For example, countries such as South Africa and Botswana attract migrant workers from neighbouring countries and there is significant labour movement in the West African sub region where strong socio-cultural ties exists.

Compared to other funds flows into the sub-Sahara African region, both foreign direct investments (FDI) and official development assistances are much higher than remittances received, but it must be cited that these inflows are volatile in nature. The stable nature of the flow of remittances can be seen as a potential means of increasing access to and lowering the borrowing cost of international capital through the securitization of future remittance flows. It has been suggested by some studies that the Dutch disease effect of remittances can relatively be contained because they are widely dispersed. Remittance, however, carry certain risks. Because it is a form of external flow, it carries the risk of real exchange appreciation, a situation that could hurt export competitiveness in the recipient country.

A cause for concern for the sub-Saharan African region is that of brain drain. The relationship between remittances and brain drain is that it is the educated and skilled workers who migrate to the developed countries and therefore remit their families in the home country. For example, the exodus of highly skilled health workers from sub-Saharan Africa to the OECD countries because of a high demand in these countries have contributed to the health sector crises in most countries in sub-Saharan Africa. For example, in the UK alone, about 25% of all new overseas – trained doctors that registered with the UK National Health Service between 2002 and 2003 were from sub-Saharan Africa. It is also estimated that about 80% of Mozambican doctors are working in the developed countries. It is no different in countries such as Zambia, Ghana and Zimbabwe where the high rate of attrition are attributed to migration. Averagely, over 20% of the population of sub-Saharan Africa who are over 15 years old and have postsecondary education works in the OECD countries as compared with less 10% in the South Asian countries. In some countries expatriation rates are in excess of half of the educated population.

However, some analysts argue that even after taking the effects of emigration into account, the fact that health professionals have a higher prospect of receiving higher incomes abroad has raised the region's supply of health care professionals. These debates offer a useful framework to assess the benefit of remittances although the precise and overt cost of the migration of skilled workers cannot be quantified.

2.5 Transfer channels of remittances

Systematic research in the 1980s on determinants of migrant remittances showed that most of the remittances by migrant workers were through informal channels. It was established that macroeconomic instability as well as the lack of any institutional and formalized structures to receive remittances were the main reasons why migrant workers choose

informal channels when sending money home. In the last few years, the focus of the systematic studies done on transfer mechanism had the following as their flows: firstly, the topology of the transfer mechanism, secondly, comparative cost of transfers through other mechanism, thirdly, the choice of the means by which the transfer is effected, and fourthly, the evolutions that the money transfer market has gone through.

2.5.1 The typology of transfer mechanisms

There are a wide range of formal as well as informal channels that migrants use to remit money which varies between migrants making hand deliveries themselves to recipients or deliveries through a third party and an unregulated system such as “hundi” or “hawala”, to the use of transferring money electronically through banks, money transfer companies, credit unions and postal services. Using a carrier as a channel of remitting family was thought to be found among the poorest in developing world, especially in Africa (Orozco, 2002). But this has been found not to be the case since data for Latin America seems to suggest that 10% of all remittances to Latin American countries are hand carried (Suro, 2003). According to the International Organization for Migration (IOM), about 50% of all remittance transfers from the Romania diaspora are estimated to be through informal channels.

According to Suro (2003) another informal means of remitting money is through ordinary mail. This accounts for 7% of all remittances by Latinos in the United State although it is relatively a very risky channel. A system exists within Asian migrants where the transfer of money is not done physically or electronically. This system is known by various names depending on the country – “hawala” (transfer) in Pakistan and

Bangladesh, “hundi” (collect) in India, “feicl’ien” (flying money) or “chits/chop” (notes/seals) in China. According to El Qorchi *et al* (2003), transfers from the migrant in country A to his home country B involves two intermediaries, known as hawaladars. The

funds are received by the hawaladar in country A to be remitted to a premium in country B. The remitter in country A receives an authentication code to be given to the receiver in country B. The hawaladar in country B is then instructed by the hawalader in country A to pay the designated beneficiary the equivalent amount in local currency. The beneficiary would need to disclose the authentication code to be able to access the funds. Pending the availability of funds, the remittance transfer is immediate. It must be understood that the liability of the hawaladar in the originating country to his partner in the receiving country is set through various compensation mechanisms, occurs at different moments and does not involve any direct payments between the hawaladars.

These are also various formal immigration businesses which are deeply involved in the transfer of money internationally. Known as “ethnic stores” in the US, most of them operate transfers to India, the Philippines, Bangladesh and Pakistan. According to Orozco (2002), the formal enterprises face stiff competition from the hawaladar system (which is not captured in the regulated system in the US). There is also tough competition from wire transfer services such as Western Union, a service that has more market power. Recent estimates show that the use of the “ethnic stores” is declining from a global market share of 50% in 1996 to 45% in 2001 (Orozco, 2002).

The post offices also entered the international money transfer market by putting on offer the possibility to transfer money through international money orders in the 1990. EuroGiro was set up in 1993 to provide and promote solutions for postal financial organizations globally in conjunction with Universal Postal Union (UPU). Currently EuroGiro has operations in about 30 countries including the United States, Canada, China, Brazil, Israel, the European Union and most Central and Eastern European countries. The US Postal Office also has a transfer system that serves most Latin

American markets. Moreover, in collaboration with Bancomer in Mexico, the US Postal Office introduced Dinero Seguro in 1998. This system offers the option of remitting small amount of money (up to USD 2000) from the postal offices in the US to any of the 2300 Bancomer branches in Mexico.

However, Western Union and MoneyGram are the most popular means of transferring money formally when it comes to international money transfer. Money transfer companies are financial institutions which have the authority to engage in banking activities, although they are non-bank. They are not, however, authorized to receive money on any savings or current account subject to withdrawal by cheque (Lowell and de la Garza, 2000). Western Union has the largest global presence and has more than 170,000 agent locations globally and a global market share of about 26% (Orozco, 2002). Banks, on the other hand, together with credit unions have developed their own mechanisms for transferring money. This requires the remitter to open an account at the bank that the remittances will be routed through in the host country. Having this account permits the remitter to send money to the bank account of the recipient in the home country electronically.

Technology has helped the banking sector to come out with products and innovations such as the Automated Teller Machine (ATM) which allows the individual to withdraw cash with either a debit or a credit card. The card of the remittance sender is either debited or credited with the amount paid or withdrawn. However, in the US, there are impediments to the use of the banking sector in effecting transfers. Firstly, the emigrant must be legally resident in the US since illegal migrants cannot open current accounts. Secondly, the emigrant may lack the knowledge that money can be remitted internationally through this method. Thirdly, the banking infrastructures in the migrants' home country are often poor and cannot support the receipt of funds through this means. Fourthly, current account holders in the US often have to maintain a minimum balance of

\$1000 which is beyond the means of most Latin American migrants in the US, who “earn low wages, live payday to payday, and dispatch most of their disposable income in remittance” (Suro, 2003). The banks and credit unions hold 13% of the market of remittance transfers to Latin America.

2.5.2 The comparative cost of transfers through different mechanisms

Different channels of transferring money in different countries have different cost components. Migrants not only consider the cost of the medium of transfer, but also the risks borne by those channels. The cheapest but also the riskiest mediums are the selfhand carries and ordinary post. The risk here is that the money may be stolen. The “hawala” system is one based on trust. With its features of being well organized in the migrants home countries, its relative affordability (it cost about 1.25% to 2% of the remitted value) and the fact that the remitter does not have to provide any form of identification, (so that even illegal immigrants can use it) makes it very popular.

Though many of the formal transfer channels greatly reduce the risk of the transfer, they are much more expensive relative to the informal channels. For example, it has been estimated by the Inter-American Development Bank that remitters spent a total of about

USD 4 billion as fees in remitting their relatives in the Caribbean and Latin America in 2002 alone. This figure represents about 12.5% of all remittance to this region.

However, because of the smaller amounts remitted per transaction (usually about 200 USD), the relative fees are very high. Orozco (2002) made a comparison in the costs involved in sending small amounts of money (USD 200) through the formal money transfer channels to different parts of the world. The comparison included sending money from six countries (Germany, France, United States, South Africa, Saudi Arabia, and the United Kingdom) to fourteen countries in Latin America, South Asia, Europe and Africa.

The channels used in the comparison were formal ones such as international money transfer companies, banks and national money transfer companies (known as “ethnic stores” in the US). He found that the mean value of sending USD 200 was 12% through money transfer companies like Thomas Cook or Western Union, 7% through the banks and 6% through “ethnic stores”. It was also found out that competition was very critical in decreasing the costs of remittances. However competition was severely subdued. There was a general lack of confidence in the formal channels of remitting money. Moreover the lack of banking and other financial services in the rural populations of, especially, the receiving countries made the use of the formal channels of sending remittances to these rural areas not an option. Also the lack of legal residential permits for migrants in the host countries is another reason for which they cannot access the formal channels of remitting money and lastly the lack of information about the faster, less risky and modern methods of remitting money.

2.6 The Macroeconomic Impact of remittances

The theory of the impact that remittances have on the economies of the receiving countries have been looked at by various studies and as a result there are quite a volume of literature on the subject. This sub section will basically look at three issues. Firstly, the literature will discuss the direct effect of remittances on individual welfare, poverty reduction and income distribution. Secondly, the impact of remittances on economic growth, employment, productivity and the economy as a whole will also be looked at. Thirdly, the contribution of remittances to cover current account and trade balance deficits in the balance of payments account of the receiving country will also be looked.

2.6.1 Remittances and income distribution

Most of the studies done on the effects of remittances on income distribution concentrate on its impact on social justice and equality. Empirically, most of the researches use the

“Gini Index” as a measure of the income effects of remittances. The empirical evidence, however, is mixed. While some researchers find a positive correlation between remittances and income distribution, others found evidence to the contrary. Some researchers such as Taylor and Wyatt (1996), Ahlburg (1996), and Taylor (1999), in their studies in Mexico and Tonga find a confirmation for the hypothesis that remittances had an equalizing impact on income distribution in these two countries. For example, the “Gini co-efficient” for total income in Tongan households declined from 0.37 to 0.34 when these households received remittances. However, other researches show that, as measured by the “Gini co-efficient”, remittances actually increase inequality. One main reason assigned to this evidence was that, richer families are better able to bear the cost associated with international migration and thus might receive more remittance which will widen the already existing gap between the rich and poor. For example, in Egypt, studies show that although poverty reduced because a significant number of poor households receive remittances, remittances actually caused income inequality to rise (Adams, 1991). Also, in the Philippines, remittances contributed to about a 7.5% increase in rural income inequality in the 1980s (Rodriguez, 1998). In Pakistan, studies showed that those who gained much from migrant remittances were the wealthier income group (Adams, 1991).

Stark, Taylor and Yitzhaki (1986, 1988) use a dynamic model to offer a broader view on the income distribution effect of remittances. Using rural income distribution data from two villages in Mexico, they found that the migration history as well as the degree to which migration prospects are spread across households affected the impact remittances had on income distribution. They represented the dynamics of migration and income distribution by an inverse U-shape relationship. According to them, there is limited information about the target destination as well as employment opportunities and possibilities in the destination countries at the early stages of the migration history. This means that it is

mainly the wealthier households that can afford to send members of their households abroad. Subsequently, the richer families are the first to benefit from migrant remittances which causes inequality to increase. However at later stages of the migration history, migration becomes widely accessible to a greater range of income classes and therefore poorer households also benefit from remittances as well and therefore there is an equalizing effect on income distribution.

However results from other dynamic models are different. Milanovic (1987), using an approach which was similar to that of Strak, Taylor and Yitzhaki and inter-temporal data from 1973, 1978 and 1983 on Yugoslavian households, however, did not find any support for the U-shaped relationship hypothesis. In contrast, the results of his studies showed that remittances lead to income divergence. Moreover, the periods and social categories considered also affected the effects.

However, there has not been any concrete conclusion that migrant remittance results in income divergence or convergence at origin. Two reasons account for this. The first reason is the diversity of the environments studied in terms of initial inequalities. The second reason is that differences in outcomes may be caused by the disparities in the empirical methods used: with or without endogenous migration costs, static or dynamic and with or without considering the effects of migration on domestic income sources (Docquier and Rapoport, 2003). However it has been suggested that the differing outcomes of the empirical literature can be reconciled if the changes in the wage levels at the origin are taken into account. This shows that the effect of remittances and the local wage adjustment on inequality tend to underline each other in the case of high initial inequality, while they may also compensate each other in the case of low initial inequality. This has significant inferences for empirical studies. In the Mexican case, for example, where there is high inequality, the equalizing impacts of remittances may be underestimated if wage

adjustments are omitted. Contrarily, in the Yugoslavian case, where inequality is lower, taking into account wage adjustments could possibly reverse the inequality enhancing effect.

2.6.2 Remittances and growth

There are some welfare impacts of migrant remittances that are incontestable. First, most low and middle-income households in developing countries have remittances as a major source of income. Second, remittances make available the foreign currency that low and middle income countries need for importing scarce inputs that are not available locally and also shoves up national savings for economic development (Ratha, 2007; Taylor, 1999; Quibria, 1997). But many scholars assume that the extent to which remittances will affect the economic development of the receiving country will largely depend on how the remittances received are used. Therefore a greater part of this sub section will look at the use of remittances for consumption, financial savings, purchase of land, productive investment and housing.

It has been widely documented that there is a positive direct effect between entrepreneurial investment and employment and growth. It has also been documented that disposing remittances on consumption and real estates also has growth impacts on the economy, though they may be indirect. These indirect effects may come about as a result of the release of other resources to other investments and the generation of their multiplier effects. It has long been held that migrant remittances are mostly spent on basic consumption needs, real estates, health care and education. But it is worth noting that, no matter the source of income - whether remittances or other resources - it is spent according to the individual's hierarchy of needs. It is therefore plausible to assume that households will continue to have a certain spending pattern in the developing countries, usually on

basics such as food, healthcare and education, until these countries reach a certain level of welfare (Lowell and de la Garza, 2000).

A more important feature concerning the use of remittances looks at the reasons why they are used differently than other sources of income. It has been empirically proved that households that receive remittances have consumption patterns that are similar to those that do not receive remittances. However, there have been suggestions by other researchers that remittances are often treated differently than other sources of income and are often saved. In a survey in Pakistan, the results showed that 71% of international remittances are saved compared to 49% of domestic urban-rural remittances and 8.5% of rental income (Adams, 1991). There are other uses, however. For example in Mali, it was found that remittances are used to build clinics and schools (Martin and Weil, 2002).

It must be noted, however, that the general economic situation in any country will determine the decisions of remittance receivers on whether to invest more or less of received remittances. This is because household productive investments choices does not only depend on income but also on stock prices, stable economic growth, interest rates and sound macroeconomic policies (Puri and Ritzema, 1999).

Remittances have significant multiplier effects even if they are not invested but consumed. One remittance dollar consumed on basic necessities will promote retail sales, which also promotes further demand for goods and services, which then stimulates output and employment (Lowell and de la Garza, 2000).

Most of the studies on the multiplier impacts of remittances use models that capture both migration and remittances impacts on welfare. Remittances are considered as a possible offset on the decrease in output in developing countries which is caused by the loss of trade prospects as a result of emigration. Research results shows that if low skilled migrants

migrate, the welfare of the receiving country increases if remittances are greater than the domestic income lost as a result of the emigration. If highly skilled persons migrate and it is supplemented by capital, then remittances have an increasing impact for the receiving household only when the capital/labour ratio of the home country remains unchanged or rises. However if the capital/labour ratio decreases, then the welfare impact is indeterminate or even negative (Quibria, 1997). For example, Straubhaar and Wolburg (1999) find that for countries in Eastern and Central Europe, remittances do not recompense the welfare loss due to the migration of their highly skilled labour force to Germany. The presence of foreign exchange, however, improves the welfare of that economy through remittance financed capital accumulation. The welfare effect of remittances spent on consumption depends on the relative factor intensities of traded and non- traded commodities (Djajic, 1998).

The empirical evidence shows that Gross National Product can be increased substantially by the multiplier impacts of remittances. For example, in Mexico, every “migradollar” spent induce a USD 2.69 increase in the Gross National Product for remittances received by urban households and a USD 3.17 increase in Gross National Product for remittances received by rural households (Ratha, 2007). In Greece, in the 1970s, remittances generated a multiplier effect of an increase of 1.77% in gross output, which accounted for more than 50% of the growth rate. Furthermore, high proportions of employment were supported by remittances: 5.2% in manufacturing, 10.3% in mining and 4.7% in construction. Moreover, the capital generated by remittances amounted to 8% of the installed capacity in manufacturing. Spending on investments and consumption also produced multiplier effects of 1.9 and 1.8 respectively. Expenditure on housing also had a multiplier of 2 (Glytsos, 1993). By using data from 11 countries in Eastern and Central Europe, León-Ledesma and Piracha (2001) find that remittances contributed significantly to the increase

of the level of investment of the source economies. Drinkwater et al. (2003) also had similar results when they did a research of 20 developing countries. The results also showed that remittances reduced unemployment, though the decrease was not significant.

Remittances, however, can also have negative impacts on the receiving country. If the demand for non-tradable goods increases as a result of the receipt of remittances, and the receiving economy's capacity to meet this demand is less than the demand itself, then remittances will lead to an inflationary effect on the economy. For example, in Egypt, the price of agricultural land increased by 600% between 1980 and 1986 due to remittances (Adams, 1991). In the years 1985, 1989 and 1990, although there were positive effects on Jordan's economy due to the receipt of remittances, remittances also had very strong recessive effects and generated negative growth rates of over 10%. Other potential negative welfare effect implications of remittances are the dependency mind set among recipients accustomed to the availability of remitted funds and the encouragement of the continued migration of the working age population. These can perpetuate an economic dependency that can weaken the prospects for development (Buch *et al.*, 2004).

Finally, because remittances take place under economic uncertainty and asymmetric information, there might be a significant moral hazard problem which can lead to a negative effect of remittances on economic growth. Also the income effect of remittances can lead to diminishing labour supply because people can afford to work less (Chami et al. 2003).

2.6.3 Balance of payments effects of remittances

Remittances are not only an addition to domestic household income but also an income on the receipt side of the balance of payments. The chronic shortage of foreign exchange can also be reduced by the receipt of remittances. These remittances can ease the often crucial

restraints imposed on the economic development of the migrants' home countries by deficits in the balance of payment accounts. Remittances have a more positive impact on the balance of payment than other monetary inflows such as foreign direct investments and other portfolio investments. This is because the use of remittances are not tied to any particular investment projects with high import content, they bear no interest and do not have to be repaid. Moreover, remittances are a more stable source of foreign exchange than other private capital flows (Buch *et al.*, 2004; Buch and Kuckulenz, 2004; Nayyar, 1994; Straubhaar and Wolburg, 1999).

Developing economies recognize these obvious and clearly estimable positive balance of payments effects of remittances and they have taken measures to increase such inflows of foreign exchange. However, these measures must be implemented with care, because these measures have a negative effect as well. Depending on how they are invested or spent, their effects on inflation, production and imports will be different. A crucial factor in this respect is the extent to which the receiving country can meet the additional demand induced by remittances and whether this additional demand can be met by expanding domestic output. The flexibility with which the domestic supply will react to the extra demand in the local economy will determine whether it will have positive economic effects on employment, inflation, imports and other macroeconomic variables.

One of the negative effects of remittances on the current account of the balance of payment is the “boomerang effect”. This is when remittances create an increase of imports and trade balance deficits in the remittance receiving country. However, many researchers and scholars disagree that these trade balance deficits are caused by remittance induced imports. The general development of the economy, the international division of labour as well as the structural change in the production of investment and consumer goods can also increase the propensity to import. Moreover, the “boomerang effect” is not supported by

any empirical research. Evidence show that in countries in Southern Europe, imports induced by remittances between 1960 and 1981 accounted for a minimum of 1% in Italy and Spain, to a maximum of 6.9% in Portugal and 4.9% in Greece (Glytsos, 1993; Straubhaar and Wolburg, 1999).

When remittances generate demand greater than the receiving economy's capacity to produce, the effects can be negative. When this demand falls on tradable goods, remittances can induce an appreciation of the real exchange rate. The overvalued exchange rate decreases the competitiveness of the local industries in the foreign market (by making exports expensive), in the home market (by making imports cheaper) and bringing about the so-called Dutch disease effect i.e. the shifts in resources from the tradable sector into the non-tradable sector. This may lead to balance of payment pressure, a slower growth of employment opportunities and an increase in the incentive to emigrate. Although empirical evidence from Portugal, Egypt and Turkey supports such fears, the effects remained marginal in most of the observed periods and cases (McCormick and Wahba, 2000; Straubhaar and Wolburg, 1999). A possible reason for the marginal Dutch disease effect of remittances may be due to the additional import of cheap capital goods which may increase productivity and therefore the competitiveness of domestic products. The imported capital goods may also be used to substitute other imports and/or to produce exportable goods.

2.7 Summary of literature review

This chapter discusses the conceptual definition of remittances, instruments for measuring remittances and the determinants or the motives why migrants remit their relatives back home. The chapter also looks at the global and regional trends in remittance flows, the channels for remitting transfers and the macroeconomic impact of remittances.

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CHAPTER THREE

METHODOLOGY

3.0 Introduction

To adequately address the research problem of any research, it is imperative for the researcher to know not only the research methods necessary for the study, but also the systematic procedure to achieve the objectives of the study. Chapter three gives an outline as well as a description of the methods to be used for this research. It is subdivided into these sections: research approach or design, sources of data, and how data are collected and analysed and the instruments used.

3.1 Research Design

The research uses the explanatory method of conducting research. The explanatory approach is characterized by forming a research hypothesis that spells out the character and the trend of the relationship among or between the variables that are being researched. The basic function of the explanatory research method is to describe why the relationship

between the variables exists or why the phenomena occur and to predict future occurrences. The data for the research are mostly quantitative and statistical test are also used to determine the soundness or otherwise of the relationships. Primarily, this research emphasizes the impact of remittances on the macroeconomic performance of Ghana between 1990 to 2000. It seeks to explore the relationship between the dependent variable (Gross Domestic Product of Ghana) and the independent variables (i.e. Oil imports, Non-Oil imports, Gold export, Cocoa export, Crude Oil export, + Private Unrequited Transfers and Official Transfers).

The usefulness of explanatory design for this study is justified since it is able to statistically test the impact of the independent variables on the dependent variables with complex statistical models.

3.3 Data Requirements and Data Collection

Data collection refers to gathering data from various sources in a systematic way for a particular purpose. Some of the sources of data are: the use of questionnaires, interviews, electronic devices, existing records, and observation (Saunders *et al*, 2012). Data collection precedes the analysis of the data. This research uses principally secondary data.

Primary data are that kind of data which is gathered first-hand by the researcher in the field while secondary data are data taken from documentary sources by a researcher be it internal or external sources (Saunders *et al*, 2012). Sources and types of secondary data include research publications, journals, books, academic surveys, websites of governmental and other organizations, newspapers and other documentary data (Saunders *et al*, 2012). Documentary data include reports to shareholders, public and administrative records, notices, minutes of meetings, correspondence (including emails), and transcripts of speeches. For this research, secondary data from multiple sources is used since the data

needed cannot be gotten by the use of questionnaires, interviews, observations or other primary methods of collecting data.

The study rely on secondary data from the country reports of the Bank of Ghana (BOG), the Ghana Statistical Service (GSS), the World Bank, the International Monetary Fund (IMF), the annual budget statements of the Government of Ghana (GOG) and other data sources on remittances and the macro economy. The data source covers the period 1990 to 2010 yearly data.

3.4 Data Analysis

Data analysis is the next process after data collection. According to Kothari, (2004) the computation of certain measures and the search for certain patterns or relationships among data groups is what is termed as data analysis. During analysis, relationships or variances in support of, or which conflicts with, original or new hypothesis are subjected to statistical tests to establish how validly the data is said to indicate any conclusion (Kothari, 2004).

Data analysis can be quantitative, qualitative or both (Saunders *et al*, 2012). This study adopts the quantitative analytical approach where the explanatory approach is used to examine the linkage between the dependent variables and the independent variables. The exploratory data analysis approach emphasises on the use of diagrams to understand the graphical relationships between the data. Descriptive statistics enables the researcher to describe (and compare) variables numerically. Collected data were collated, edited, and rationalized. Microsoft Excel and Statistical Package for Social Sciences (SPSS) computer programmes are used to process and analyse the data collected. This is done to draw linkages and the relationships between variables used in the research.

Trend analysis is used to examine the trends in the components of the remittances while the relationship between the dependent variables and the independent variable is determined by running a regression analysis.

The model used to determine the association between the dependent and independent variables for the various objectives is:

$$GDP_{it} = \beta_0 + \beta_1 GDP_{i,t-1} + \beta_2 Rem_{it} + \beta_3 X_{it} + \mu_t + \varepsilon_{it}$$

Where

$GDP_{i,t-1}$ = initial level of GDP per capita

Rem_{it} = remittances over GDP

X_{it} = control variables such as inflation, human capital, international trade, fiscal policy

μ_t = time specific effect

ε_{it} = error term

The research is interested in testing whether the effect of remittances on growth, β_2 , is

statistically significant. (Giuliano and Ruiz-Arranz, 2006)

3.5 Ethical Issues

Since most of the data used are from secondary sources and are publicly available for all manner of persons to access and are not restricted to collecting data from individuals, the issues of confidentiality and other ethical issues are not encountered. The researcher is, however, ethically bound to use the correct data as collected from the sources they are obtained from.

3.6 Definition of Variables

The variables the research uses include Remittances, Unemployment, Gross Domestic Product (GDP), Balance of Payment (BOP), Inflation and Gross National Debt. The table below presents their definitions and their sources.

Table 3.1 Definition of Variables

<u>Variable</u>	<u>Description</u>	<u>Source</u>
Unemployment	Annual rate of unemployment	IMF (World Economic Outlook Database, 2015)
Gross Domestic Product (GDP)	The Gross Domestic Product in Dollars for the period of study	IMF (World Economic Outlook Database, 2015)
Balance of Payment (BOP)	Annual Current Account Balance for the period of the study	IMF (World Economic Outlook Database, 2015)
Inflation	Annual percentage change in Consumer Price Index (CPI)	IMF (World Economic Outlook Database, 2015)
Gross Debt		IMF (World Economic Outlook Database, 2015)
Remittances		Bank of Ghana

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CHAPTER FOUR

DATA ANALYSIS

4.0 Introduction

This chapter presents analyses of the data collected. The data analysis is done in line with the research objectives. This study looks at the relationship between remittances and macroeconomic indicators in Ghana between 1990 and 2000. Using data series for remittances and the macroeconomic variables covering 21 years, we relate the interaction between Remittances, Unemployment, Balance of Payments, Inflation, Gross Debt and Gross Domestic Product. This is done by: firstly, looking at the graphical relationships and secondly, using the Ordinary Least Square (OLS) estimates to analyse the relationships.

4.1 Relationship between Remittances and GDP

Table 4.1 looks at the relationship between remittances and GDP for the period under study i.e. from 1990 to 2010. For most years within the period under study, there was a positive

relationship between the growth in both remittances and that of GDP. This supports the theory that whether remittances are consumed or invested, they have both direct and indirect positive effects on economic growth. When recipients consume remittances, they spend the money mostly on basic consumption needs, housing, education and health care. On the other hand, investments uses of remittances include savings, purchase of land, real estates and trading (usually small scale retailing of goods). All these activities have a direct or indirect positive effect on the economic growth of the country thereby contributing to the growth of the Gross Domestic Product.

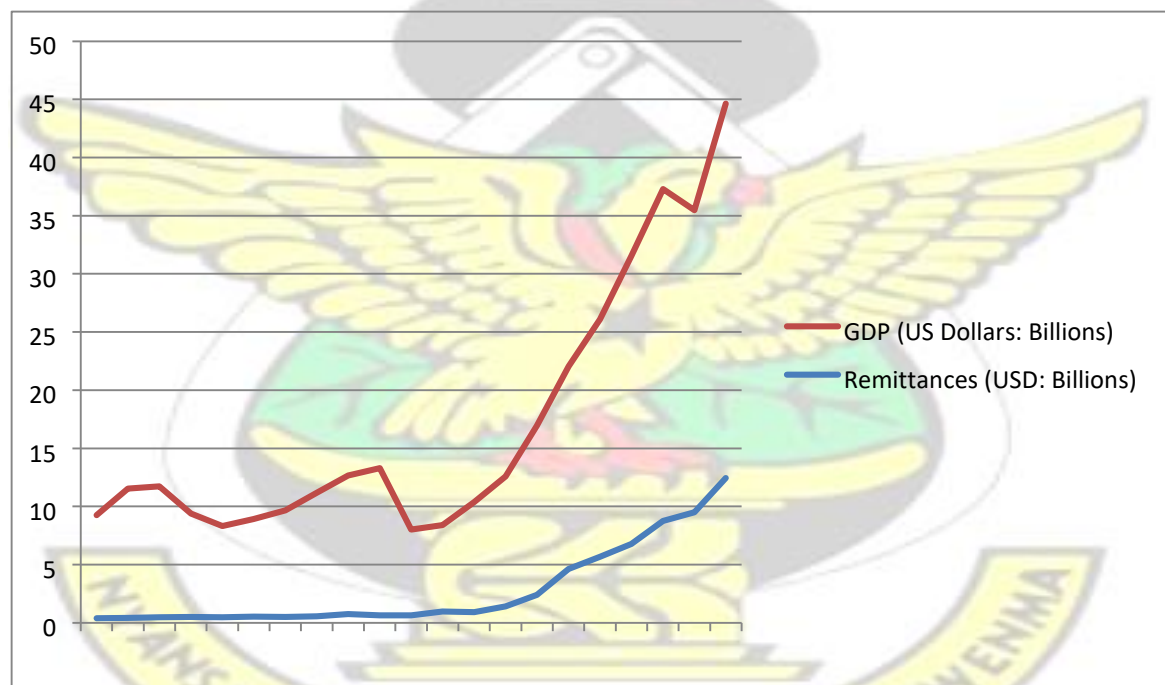
Table 4.1: Remittances/GDP

Year	Remittance (US Dollar: Millions)	GDP (US Dollars: Billions)	GDP (% change)
1990	410.5	8.835	3.340
1991	421.9	11.118	5.036
1992	470.2	11.257	4.084
1993	517.4	8.886	4.666
1994	471.8	7.859	3.471
1995	523.2	8.403	4.050
1996	497.9	9.180	4.540
1997	576.5	10.613	5.226
1998	751.0	11.916	5.107
1999	637.9	12.665	4.687
2000	649.3	7.362	4.188
2001	978.5	7.435	4.497
2002	912.4	9.482	4.654

2003	1,408.4	11.186	5.112
2004	2,394.3	14.557	5.315
2005	4,629.6	17.409	6.023
2006	5,676.2	20.410	6.125
2007	6,769.1	24.758	4.494
2008	8,748.3	28.528	9.316
2009	9,491.4	25.978	5.785
2010	12,451.7	32.174	7.897

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

Figure 4.1 Plot of the relationship between remittances and GDP from 1990 to 2010



1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook

Database, 2015

4.2 Relationship between Remittances and Inflation

Table 4.2 also shows the relationship between remittances and inflation for the period 1990 to 2010. As clearly shown in Figure 4.2, there has mostly been an inverse relationship

between remittances and inflation. While there has been a consistent increase in the amount of remittance flows, inflation figures for the period, though fluctuating significantly, have been decreasing. From a high of 70.8% in 1995, inflation has been fluctuating between 10% to 30% with 2010 recording an inflation rate as low as 6.86%. This shows that though remittances present quite a significant inflow of money to households, it does not increase the money supply in the economy so much so that it can exert inflationary pressure in the economy. It is also contrary to other works of other researches in other countries. It contradicts the works of Balderas and Nath (2008) whose work in Mexico for the period 1988 to 2005 showed that remittances have a positive relationship with inflation.

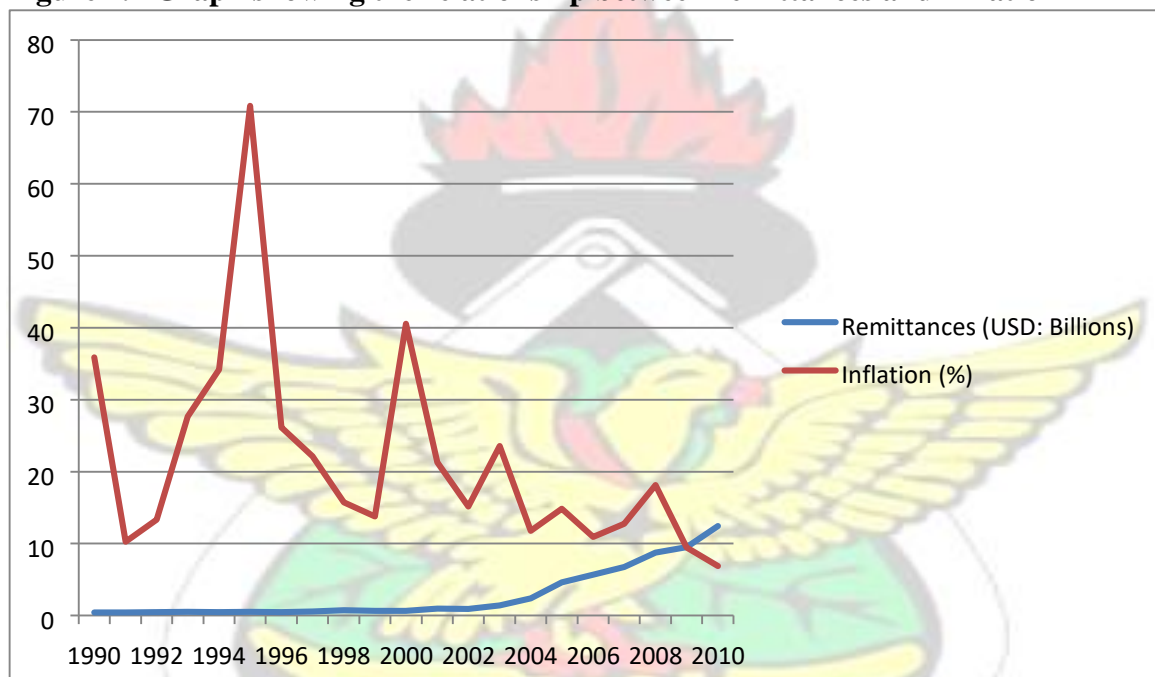
Table 4.2: Remittances/ Inflation

Year	Remittance (US Dollar: Millions)	Inflation (%)
1990	410.5	35.902
1991	421.9	10.261
1992	470.2	13.330
1993	517.4	27.656
1994	471.8	34.179
1995	523.2	70.817
1996	497.9	26.123
1997	576.5	22.141
1998	751.0	15.752
1999	637.9	13.791
2000	649.3	40.540
2001	978.5	21.288
2002	912.4	15.171
2003	1,408.4	23.563
2004	2,394.3	11.777

2005	4,629.6	14.838
2006	5,676.2	10.923
2007	6,769.1	12.748
2008	8,748.3	18.133
2009	9,491.4	9.459
2010	12,451.7	6.868

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

Figure 4.2 Graph showing the relationship between remittances and inflation



Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

4.3 Relationship between Remittances and Unemployment

Table 4.3 and Figure 4.3 show the relationship between remittances and unemployment.

From the graph, there is an inverse relationship between remittances and unemployment.

For the period under study, there is a steady decline in unemployment while remittances on the other hand have been increasing. This is as a result of the reproductive investment of remittances. A direct inference is the use of remittances to set up small to medium scale

enterprises as well as retail trading. These activities, with their multiplier effects, ensure that people get employed along the chain and this reduces unemployment greatly.

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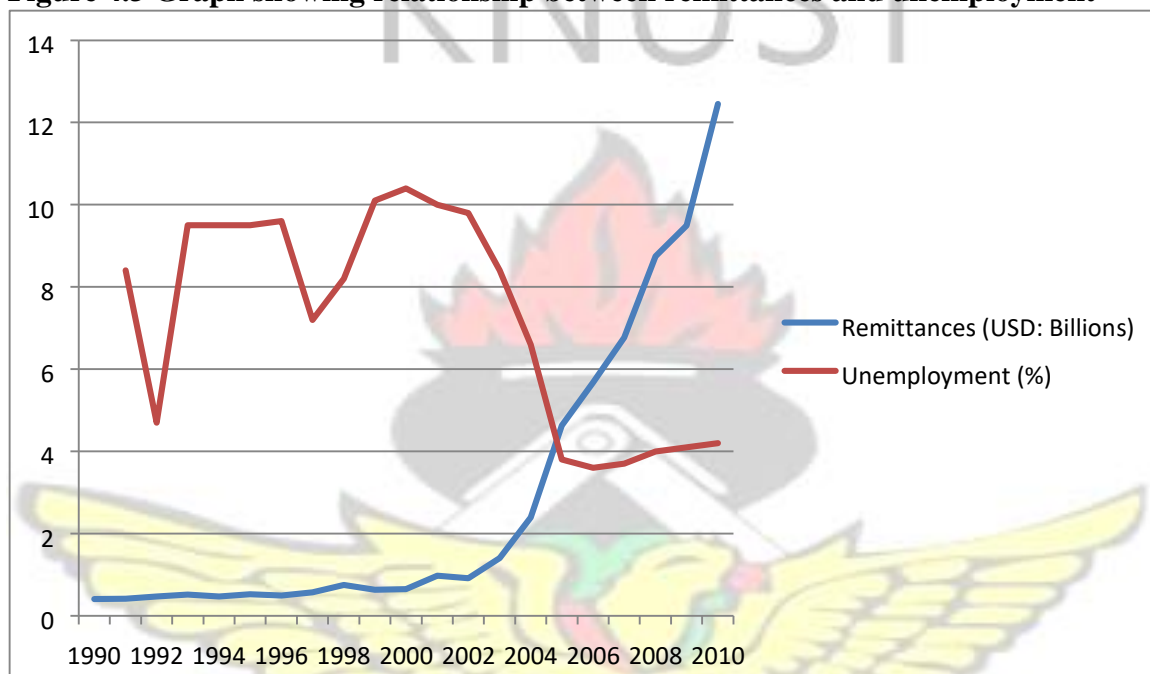
Table 4.3: Remittances/ Unemployment

Year	Remittance (US Dollar: Millions)	Unemployment (%)
1990	410.5	
1991	421.9	8.40
1992	470.2	4.70
1993	517.4	9.50
1994	471.8	9.50
1995	523.2	9.50
1996	497.9	9.60
1997	576.5	7.20
1998	751.0	8.20
1999	637.9	10.10
2000	649.3	10.40
2001	978.5	10.00
2002	912.4	9.80
2003	1,408.4	8.40
2004	2,394.3	6.60
2005	4,629.6	3.80
2006	5,676.2	3.60
2007	6,769.1	3.70

2008	8,748.3	4.00
2009	9,491.4	4.10
2010	12,451.7	4.20

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

Figure 4.3 Graph showing relationship between remittances and unemployment



Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

4.4 Remittances and National Debt

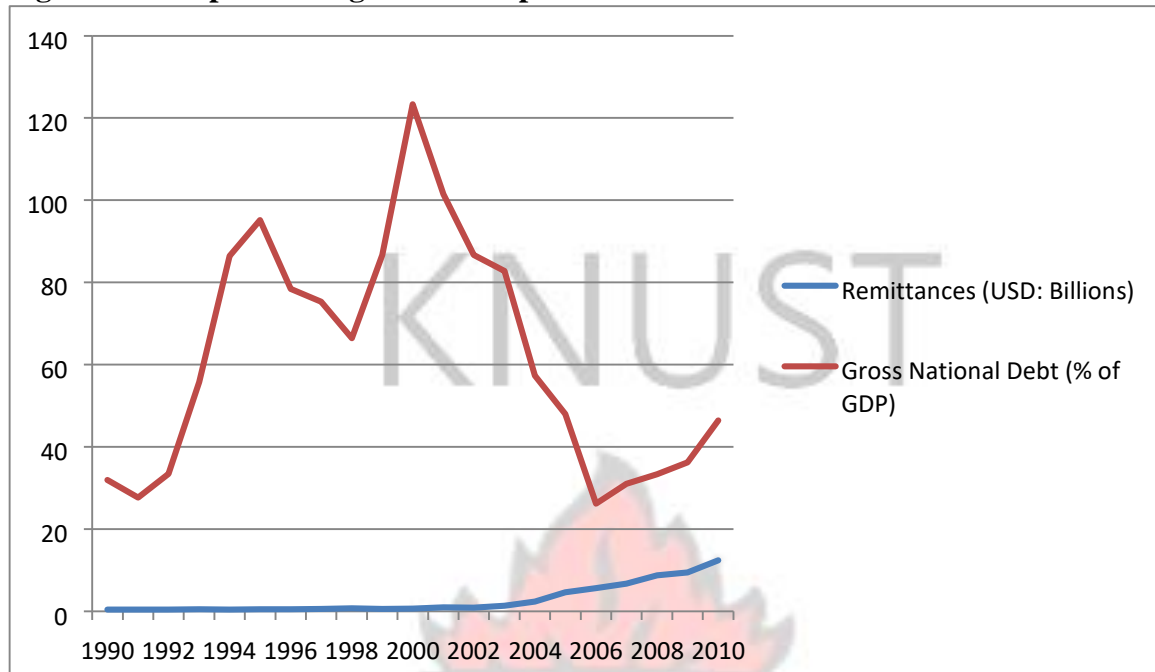
Table 4.4 and Figure 4.4 show the relationship between remittances and national debt. From the graph, there is mostly, an inverse relationship between remittances and national debt. While remittances have consistently been increasing in the period under study, national debt, on the hand, has, mostly, been decreasing except in the year 2000 when there was a sharp increase in national debt and from years 2007 to 2010 when national debt increased marginally in relation to remittances.

Table 4.5: Remittance/National Debt (% of GDP)

Year	Remittance (US Dollar: Millions)	Gross Debt (% of GDP)
1990	410.5	31.979
1991	421.9	27.700
1992	470.2	33.468
1993	517.4	55.813
1994	471.8	86.467
1995	523.2	95.147
1996	497.9	78.419
1997	576.5	75.338
1998	751.0	66.443
1999	637.9	86.689
2000	649.3	123.346
2001	978.5	101.504
2002	912.4	86.660
2003	1,408.4	82.813
2004	2,394.3	57.333
2005	4,629.6	48.034
2006	5,676.2	26.192
2007	6,769.1	31.006
2008	8,748.3	33.395
2009	9,491.4	36.227
2010	12,451.7	46.468

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

Figure 4.4 Graph showing relationship between remittances and national debt



Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

4.5 Relationship between Remittances and Balance of Payment (BOP: Current Account)

Table 4.5 shows the relationship between remittances and balance of payment for the period under study. The graph in figure 4.5 shows that there is a direct inverse relationship between remittances and the current account of the country's balance of payment in the period under study. While remittances consistently increase during the period, the current account of the balance of payment consistently decreases.

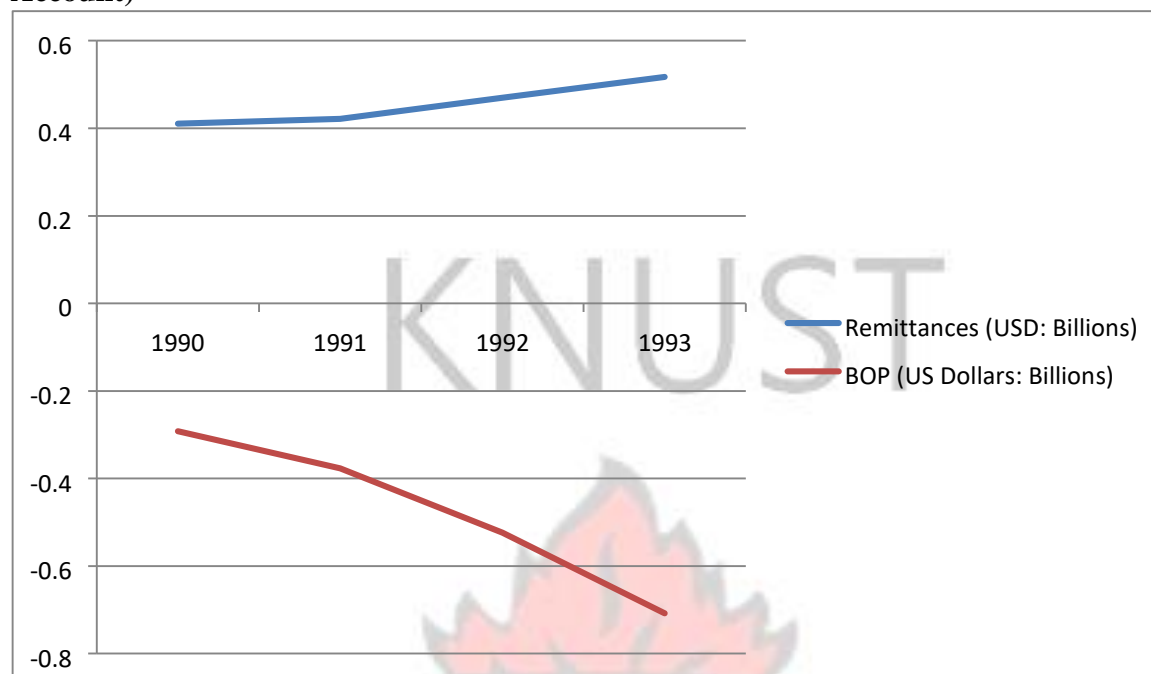
Table 4.5: Remittances/BOP (Current Account)

Year	Remittance (US Dollar: Millions)	BOP (US Dollars: Billions)	BOP (% of GDP)
1990	410.5	-0.292	-3.304
1991	421.9	-0.377	-3.390
1992	470.2	-0.524	-4.657
1993	517.4	-0.708	-7.964
1994	471.8	-0.410	-5.222
1995	523.2	-0.320	-3.803
1996	497.9	-0.306	-3.337
1997	576.5	-1.002	-9.439
1998	751.0	-0.598	-5.022
1999	637.9	-0.947	-7.478
2000	649.3	-0.483	-6.560
2001	978.5	-0.374	-5.033
2002	912.4	-0.076	-0.801
2003	1,408.4	0.014	0.129
2004	2,394.3	-0.685	-4.704
2005	4,629.6	-1.219	-7.001
2006	5,676.2	-1.678	-8.223
2007	6,769.1	-2.158	-8.716
2008	8,748.3	-3.400	-11.920
2009	9,491.4	-1.397	-5.379
2010	12,451.7	-2.770	-8.608

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

Figure 4.5 Graph showing relationship between remittances and BOP (Current

Account)



Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook

Database, 2015

Table 4.6: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
Remittance (US Dollar: Millions)	410.0000	12451.7000	2827.857143	3647.0009855
GDP (US Dollars: Billions)	7	32	14.24	7.648
Inflation (%)	7	71	21.71	14.650
Unemployment (%)	4	10	7.35	2.621
Gross Debt	26	123	62.29	28.548
BOP (US Dollars: Billions)	-3	0	-.86	.964

Sources: Bank of Ghana, International Monetary Fund, World Economic Outlook Database, 2015

4.6: Descriptive Statistics

The descriptive statistics table presents the trends and the interactions between the study variables. The growth of the economy declined between the periods of study. From the results presented in Table 4.7, the average rate of GDP (i.e. the mean of GDP in the regression) for the period of study is 14.24 % with a standard deviation of 7.64%. GDP has been interacting negatively with all the variables; Inflation, Unemployment, Balance of Payments and Gross Debt with the exception of Remittances. Further, Inflation has been relating positively with Balance of Payments as well as Unemployment for the period of study with an average rate of inflation (mean of inflation) of 21.71 %. Withal, the rate of inflation has been interacting negatively with GDP and Remittances. The implication is that as Inflation goes up, GDP and remittances inflows decrease. The maximum rate of inflation recorded for the period of study is 70.8%. The Gross Debt of the country has also been interacting positively with unemployment and inflation and balance of payments (BOP) with an average value of 62.29%. However, Gross Debt has been interacting negatively with remittances and GDP. The annual rate of unemployment for the period is averaged to be 7.3% and a standard deviation of 2.621% while interacting positively with inflation, gross debt and balance of payments. Notwithstanding, there has been a negative relationship between unemployment and GDP as well as remittances. The country's balance of payment has also been interacting positively with unemployment, gross debt and inflation for the period of study. The country's BOP averaged at -0.86 with a standard deviation of .96 while interacting negatively with remittances and growth. The results show that the country experienced balance of payments deficits between 1990 and 2010. Remittances experienced a reducing trend between 1990 and 2010 with an average value \$2827.85 billion while interacting

negatively with unemployment, BOP, inflation and gross debt and experiencing a positive relationship between GDP with a standard deviation of \$3647

billion.

4.7 Remittances, Inflation, BOP, Gross debt, Unemployment and GDP

To explore the relationship between remittances, Inflation, BOP, Gross debt, Unemployment and GDP, the study used time series dataset of the variables from 1990 to 2010.

As a starting exercise, the study estimated the impact of remittances on the variables of economic growth by ordinary least squares (OLS). The tests assume that the dependent variables are normally distributed with equal variance across all values of any independent variable.

4.7.1 Combined effects of BOP, Gross Debt, Inflation, Unemployment and Remittance on GDP

A multiple regression was used to assess the impact of BOP, Gross Debt, Inflation, Unemployment and Remittance on GDP. This test determines whether each independent variable predicts variation in GDP, all other variables held constant. The test further assumes that GDP is normally distributed with equal variance across all values of any independent variable.

From the regression results, holding all other variables constant, Remittance has a statistically significant positive impact on GDP for a one unit increase in Remittance, GDP increases by 0.001 units ($t=8.258$, $p=0$). Inflation as well as Unemployment has no statistical relationship with GDP ($\alpha=.05$).

Further, holding all other variables constant, BOP has a statistically significant negative relationship with GDP. For a one unit increase in BOP, GDP decreases by 1.917 units.

($t=-3.079$, $p=0.008$).

The R-squared value of 0.982 (adjusted R-squared = 0.976) indicates that this model explains about 98.2 percent of the variation in GDP based on results from the current data.

In predicting individual values of GDP based on the regression line, the regression equation takes the form of:

$$\text{GDP} = 11.448 + 0.001\text{Remittance} - 0.031\text{Inflation} - 0.058\text{Unemployment} - 0.028\text{Gross Debt} - 1.917\text{BOP}.$$

Table 4.7: Regression results

Variables	Estimate	t value	Pr (> t)
Intercept	11.4479028	6.972	6.53e-06
BOP	-1.9167741	-3.079	0.00816*
Gross Debt	-0.0283947	-1.481	0.16084
Inflation	-0.0307212	-1.262	0.22757
Remittance	0.0014008	8.258	0.0001*
Unemployment	-0.0580259	-0.232	0.81972

*Significant at 0.05 level

Source: Output from regression results

4.7.2 Remittances and Unemployment

Holding all other variables constant, remittance has a statistically significant negative relationship with unemployment. For a one unit increase in Remittance, Unemployment decreases by 0.001 units. ($t=-5.341$, $p=0$).

The R-squared value of 0.613 (adjusted R-squared = 0.592) indicates that this formula explains about 61.3 percent of the variation in Unemployment, based on results from the current data.

To predict Unemployment based on the regression line, the regression takes the form:

$$\text{Unemployment} = 8.904 - 0.001\text{Remittance}$$

4.7.3 Remittances and Inflation

The role remittances play on economic development of recipient economy through different micro and macroeconomic channels is significant. However, the adverse impact of remittances on inflation cannot be overlooked. From the regression results, holding all other variables constant, remittance has a statistically significant negative relationship with inflation. For a one unit increase in Remittance, Inflation decreases by 0.002 units.

Hence the regression equation takes the form of:

$$\text{Inflation} = 26.728 - 0.002 \text{ Remittance}$$

The R-squared value of 0.2 (adjusted R-squared = 0.157) indicates that this model explains about 20 percent of the variation in Inflation, based on results from the data. Contrary to the literature, the results is in contrast with a research by Narayan *et al* whose work examined the determinants of inflation in both the short run and the long run for 54 developing countries using a panel data set covering the 1995–2004 period. Their study shows that in developing countries remittances generate inflation. Hence remittances have a positive relationship with inflation. The results further contradicts

Balderas and Nath (2008) who examined the direct effect of remittances on inflation in Mexico for the time period from 1988-2005. Their results indicated that remittances have a significant and positive impact on inflation.

4.7.4 Remittances and Gross Debt

Holding all other variables constant, Remittance has a statistically significant negative relationship with Gross Debt. The regression coefficient of -0.004 suggests that for a one unit increase in remittance, gross debt decreases by 0.004 units. ($t=-2.552$, $p=0.019$). The R-squared value of 0.255 (adjusted R-squared = 0.216) indicates that this model explains about 25.5 percent of the variation in Gross Debt, based on results from the current data.

To predict individual values of Gross Debt based on the regression line, the appropriate values for remittances are entered into the formula below:

$$\text{Gross Debt} = 73.568 - 0.004 \text{ Remittance}$$

4.7.5 Remittances and GDP

The impact of remittances on GDP is not consistent with the work of Karagoz which concluded that remittances inflow to Turkey is significant but negatively link with economic growth. From this study, holding all other variables constant, remittance has a statistically significant positive relationship with GDP. For a one unit increase in remittance, GDP increases by 0.002 units. ($t=18.726$, $p=0$). The R-squared value of 0.949 (adjusted R-squared = 0.946) indicates that this formula explains about 94.9 percent of the variation in GDP, based on results from the current data. The regression equation of the model takes the form of:

$$\text{GDP} = 8.57 + 0.002 \text{ Remittance}$$

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter presents the general findings of the research in the context of the central ideas underpinning the objectives of this research. The perspective of this chapter does not only recommend solutions but presents the findings in relation to remittances and growth. The key components of the chapter include the summary of findings, recommendations and conclusion.

5.2 Summary of findings

Findings from the study revealed that remittance has a negative relationship with inflation, unemployment, balance of payments and gross debt but a positive relationship with GDP. It further revealed that inflation has a positive relationship with balance of payments as well as unemployment for the period of study. However, the rate of inflation has been interacting negatively with remittances and GDP.

The gross debt of the country has also been interacting positively with unemployment and inflation and balance of payments (BOP) while interacting negatively with remittances and GDP. Further, the annual rate of unemployment for the period was found out to be interacting positively with inflation, gross debt and balance of payments while interacting negatively with GDP as well as remittances. The study also finds out that the country's balance of payment has also been interacting positive with unemployment, gross debt and inflation for the period of study while interacting negatively with remittances and growth.

Holding all other variables constant, the study finds that remittance has a statistically significant positive impact on GDP. A unit increase in remittance will increase GDP by 0.001 units ($t=8.258$, $p=0$).

Finally, the study further shows that holding all other variables constant, BOP has a statistically significant negative impact on GDP. For a one unit increase in BOP, GDP decreases by 1.917 units. ($t=-3.079$, $p=0.008$).

5.3 Conclusions

Remittances have attracted considerable debate among academics, policy makers and researchers regarding their possible impact on the growth and development of developing countries. This study focuses on Ghana as the case for study to empirically assess the impact of remittances on GDP and other macroeconomic indicators in the economy. As a larger source of foreign capital, remittance act as a boost to the economy with a positive and a significant impact on GDP and an inverse relationship with unemployment, inflation, BOP and national debt.

5.4 Recommendations

The study provides the following recommendations:

5.4.1 Increasing remittances inflow

As a boost to the economy, the study recommends increasing the total flow of remittances to Ghana. In order to achieve this, the study recommend that the government of Ghana takes initiatives such as lowering transfer costs, reducing the risks involved in these transfers, and offering more attractive investment alternatives.

The study also recommends that local Ghanaian banks should set up shop in the diaspora and design special products to encourage Ghanaian migrants in the diaspora to remit their relations in Ghana more than they do now.

5.4.2 Creating appropriate savings for international migrants

Creating appropriate savings services for migrants and their families internationally would help encourage the flow of remittances and their productive use. Specifically, the study

recommends the opening of repatriable foreign currency accounts, issue of foreign currency denominated bonds and the issue of savings certificates denominated in foreign currency.

5.4.3 Licensing of more Money Transfer Organizations

The study further recommends that the government through the Bank of Ghana should licence more MTOs so that receiving money from relatives abroad becomes very easy, fast and convenient.

5.4.4 Improvement in Education, Communication and Awareness of Remittance Channels

The study recommends also that the Bank of Ghana should roll out an education, communication and awareness programme on the safety, convenience and risk-free method of using the formal channels to remit money. This will significantly boost the amounts of money received through remittances which will also impact on GDP growth and help reduce unemployment in the economy. This is because the literature on remittances stipulates that about 50% of all remittances are received through the informal channel. This means that those monies are not accounted for in the balance of payments of the country and its positive impact on the macro-economic variables is therefore lost.

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