

**A STUDY ON RELATIONSHIP BETWEEN WORKERS
REMITTANCE AND MACRO-ECONOMIC
VARIABLES IN NEPAL**

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RECOMMENDATION

This is to certify that the Thesis

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Entitled:

**A STUDY ON RELATIONSHIP BETWEEN WORKERS
REMITTANCE AND MACRO-ECONOMIC
VARIABLES IN NEPAL**

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DECLARATION

I hereby declare that the work reported in this thesis entitled “A Study on Relationship Between Workers Remittance and Macro-Economic Variables in Nepal.” submitted to Office of the Dean, Faculty of Management, Tribhuvan University, is my original work done in the form of partial fulfillment of the requirement for the Master Degree in Business Studies (MBS) under the supervision of **Lecture Narendra Raj Pandey** of Bhairahawa Multiple Campus.

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LIST OF ABBREVIATIONS

AD	Anno Domini
ADB	Asian Development Bank
ANOVA	Analysis of Variances
BOP	Balance of Payment
BOT	Balance of Trade
Etc.	Et cetera
FDI	Foreign Direct Investment
FX	Foreign Exchange
GDP	Gross Domestic Product
H0	Null Hypothesis
H1	Alternate Hypothesis
IME	International Money Express
IMF	International Money Fund
INR	India Rupee
LDCs	Least Developed countries
MT	Money Transfer
MTO	Money Transfer Operations
NEER	Nominal Effective Exchange Rate
NPR	Nepalese Rupee
NRB	Nepal Rastra Bank
ODA	Official Development Aid
OECD	Organization for economic cooperation and development

SA	Sub Agents
SAARC	South Asian Association for Regional Cooperation
SEMC	Southern and Eastern Mediterranean countries
TOT	Terms of Trade
UAE	United Arab Emirates
UNCTAD	United Nation Conference on Trade and Development
USD	United State Dollar
VECM	Vector Error Correction Model
VIF	Variance Inflation Factors
WB	World Bank
WR	Workers' Remittance
WU	Western Union

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

Economic growth and development processes affect and are affected by migration of people. In traditional viewpoint, people migrate when they are both pushed by lack of opportunities at home and pulled by the hope of economic gains elsewhere. Thus, the hope that migration will help associate migrants more closely with available economic opportunities, employment and services elsewhere is a major incentive for migration. Arguably, migration is necessarily a part of a family strategy to raise income, obtain new funds for investment, and insure against risks. It is not surprising therefore that thousands of Nepalese workers with relevant skill endowments leave their home country yearly to pursue better economic prospects within or outside Nepal. However, migration of skilled workers could potentially hurt the sending countries if not well managed by appropriate policies.

As populations in advanced countries continue to age, shortage of labour in sectors such as health care continue to attract relatively cheap but qualified labour from Nepal. Migration of skilled workers in this sense contributes to the economic growth of receiving countries by responding to real labour needs in receiving countries. In addition, migrant workers help fulfill unmet labour requirements in many lower-pay and low-skill jobs such as those associated with domestic and agricultural work in developed countries. Migrants also contribute to the scientific and technological development of host countries. These factors partly provide the necessary impetus for international migration flows to continue to increase, and for the process of globalization and the interdependence of nations to continue to deepen.

While the positive aspects of migration can lead to economic gains for the receiving countries, it can also lead to “unintended consequences” in both the sending and receiving countries. Some of these consequences include an outright deprivation of vital human resources in sending countries, and by implication the adverse impact of migration of skilled workers on the brain drain phenomenon in sending countries. This problem is even further compounded when the long gestation period for training skilled workers is taken into account by the migrant sending country i.e. Nepal. There are also the issues of cultural conflicts in receiving countries, human trafficking, economic exploitation of migrants, sending country dependency patterns, delayed economic growth in sending countries, etc. In this case, a vicious cycle is easily perpetuated.

Official data on remittances inflow to Nepal reveal that, the flow of remittances to the country has been far more stable than official aid flows and foreign direct investment (FDI). Besides, remittances do not decline even in conditions of instability and poor governance. Hence, remittance flows represent one of the least volatile sources of foreign exchange earnings.

They are also more evenly spread among developing countries than capital flows. Workers' remittances represent one of the largest private sources of external finance for developing countries; thus, remittances are the main transmitter of migration's development benefits to sending country economies. Workers' remittances are inter-household transfer of money within or across national boundaries. According to Reinke and Patterson (2005), workers' remittances cover current transfers by migrants who are employed in new economies and are considered residents there.

Workers' remittances flow has steadily increased since the mid 1980. Worldwide remittances are expected to reach their highest levels ever during 2012. Officially recorded remittances in 2012 will likely top \$534 billion (World Bank's Migration and Development Statistics 2012). Remittances have been the second most important source of external finance for developing countries, being twice the size of Official Development Aid (ODA) and almost as large as Foreign Direct Investment (FDI).

When considered as a share of GDP, workers' remittances can in fact be conveniently regarded as a vital source of finance for many developing countries. These flows contribute to the poverty reduction process by enhancing the living standards of the beneficiaries. Workers' remittances can also contribute to the poverty reduction process through the multiplier effects of flows which create additional demand, employment and income. Page and Adams (2003) estimate that a 10% increase of remittances per capita would lead to a decline of the poverty head count by 3.5%, due to multiplier effects on GDP growth. Despite their positive impact on poverty rates, the way in which remittances contribute to economic growth and development is still an open question. Even if we take account of multiplier effects, poverty reduction through remittances is, in principle, a one-time effect. From a development perspective the question must be whether remittances have, beyond their immediate impact on poverty, an effect on the long-term growth of a country.

1.1.1 History of Workers Remittance in Nepal

Nepal has become one of the major labor exporting country in recent years. The history of foreign employment in Nepal dates back to the early nineteenth century when Nepalese soldiers began to work for the British army. In the ensuing decades, hundreds of thousands of Nepalese have worked in British and Indian army. Currently, over 60 thousand Nepalese are working in the Indian Army and other government institutions in India. As the border between India and Nepal is open, hundreds of thousands of Nepali goes to India for labor works. The pace of the foreign employment increased dramatically after 1996 and the consequent of shrinking economic opportunities back home compelled Nepalese youths to look for alternatives elsewhere. The massive unemployment inside the country is the main reason behind this upsurge in venturing out to distant lands. As per the government data among the total population of 23.2 million, 47 percent are underemployed. According to one estimate, every year 300,000 to 350,000 new Nepalese enter the labor market. Out of these new entrants, 30 to 40 thousand find jobs within the country; 100,000 to 150,000 go abroad and the rest remain in the country with no job. According to the National Planning Commission (NPC), the number of overseas workers has grown, on average, by 30 percent in the last couple of years. There are now an estimated 1.2 million Nepalese working in 40 countries, excluding India. In the Gulf region alone, about 700,000 Nepalese are working in Bahrain, Kuwait, Saudi Arabia, Qatar and the United Arab Emirates (UAE). The demand was so high that Nepal had to open a consulate in Qatar to supplement the efforts of the embassy in Saudi Arabia, where there are over 200,000 Nepalese. Malaysia first opened its domestic job market to Nepalese in 2001, and it is estimated that about 150,000 workers have legally entered the country since then. Around 70,000 more are estimated to work in Hong Kong. Large numbers are also illegally employed in the rest of Southeast Asia.

Remittance income in developing countries has become a lifeline for economic development. By remittance we mean sending income in terms of money or goods in home by the migrants or workers who have their earning outside their home country. Now-a-days, this source of foreign income has been growing rapidly in each year in developing countries. Since long time in Nepal, many migrants have been transferring their income through the unofficial channels. Today due to the establishment of different agencies like Western Union, International Money Express (IME) etc. in several district headquarters of the country, the remittance flows has become popular for transferring cash or money in time to the recipients. However, it is difficult to calculate the exact

size of remittance flows in Nepal due to the emergence of unofficial channels even though it has recorded in balance of payment account. In this regards, it is estimated that unrecorded flows through informal channels are believed to be more than 50 percent of the recorded flows in developing countries (Ratha 2005).

Initially, remittance in Nepal was introduced with Gurkha remittance. ‘The Gurkhas’ were renowned for good qualities of soldiers. That is why British India formally recruited Nepalese youth as a regular army, which later divided into British and Indian army. Now-a-days, Nepalese going abroad are not only for armies but also spread all over the world for work and mostly they are concentrated Gulf areas in civilian front (Kshetry 2003). Any Nepali to go for work legally, he/she needs to get permission from the Department of Labor under Ministry of the Labor Department it is known that 107 countries are the government list where Nepalese are allowed to go for work. But still some people are found going abroad without permission and working in the government restricted areas too. Because of this trend, data on foreign employed workers are not available in exact form. Majority of those who have left home for overseas job are eager to earn foreign currency by hard working to support their families.

1.2 Statement of the Problems

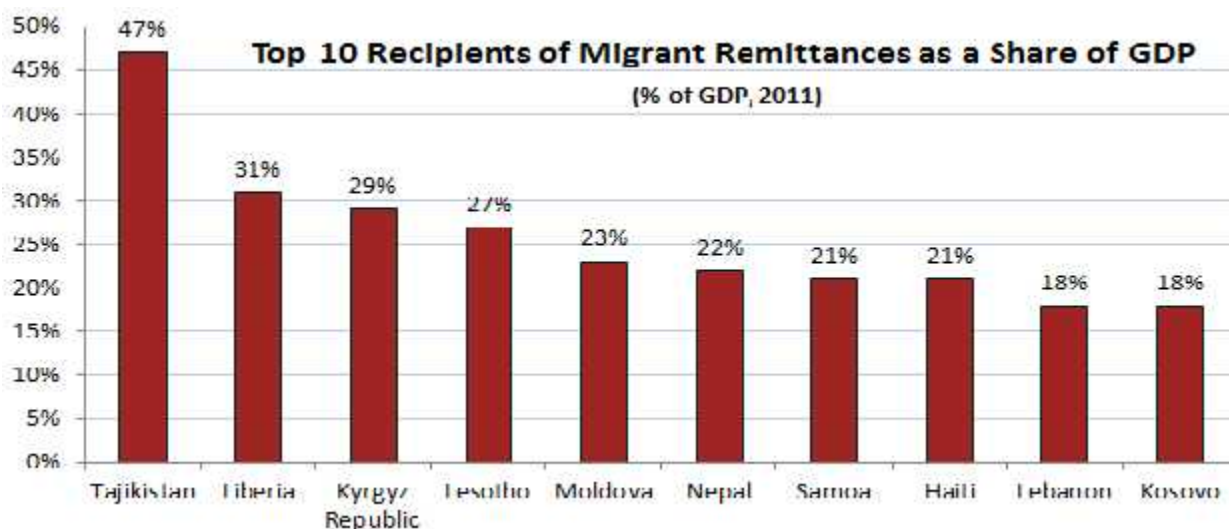
The major research issue in this study bothers on the nature of relationship between remittances and macroeconomic variables in Nepal. There is so far no conclusive answer in the literature to the question of whether workers’ remittances constitute at the aggregate level, a vital source of development finance to the Nepal.

The literature on the relationship between workers remittance and macroeconomic variables is quite vast and debatable. Study strand focuses on the effects of remittances and uses macroeconomic models (that are not based on individual maximizing behavior) to estimate the impact of remittances. While the micro dimension of remittances is often closely associated with the “dependency framework”, the macro dimension is often associated with the “developmental framework”.

In other words, workers’ remittances seen from the perspective of individual to individual transfers often connote a relationship between two parties that allows for regular financial support from one party. Such support is often to meet the consumption, medical and/or education

needs of the dependant party. However, when workers’ remittances is taken from the perspective of group to group transfers, it connotes an arrangement that allows for group or societal support often to meet the developmental needs of the benefiting party. The likely negative impact of remittances associated with the dependency framework is that it may engender a culture of dependency among the economically active population that benefit from remittances flows.

Workers’ remittances may on the other hand generate a number of important positive contributions to economic growth and development. In particular, remittances tend to reduce poverty and inequality in recipient countries, as well as increase aggregate investment and growth. Moreover, when perceived to behave counter – cyclically, remittances may significantly reduce growth volatility and help countries adjust to external and macroeconomic policy shocks. At the microeconomic level, remittances allow poor recipient households to increase their savings, spend more on consumer durables and human capital, and improve children’s health and educational outcomes. Consequently, the net impact of workers’ remittances is that it is beneficial to the recipient party if properly managed.



Source : World Bank’s Migration and Development Unit, 2012

Figure 1. 1: Top 10 Receipts of Migrant Remittance as Share of GDP in 2011

Workers’ remittances to Nepal is an important financial flow—with perhaps, significant developmental effects. As shown in figure 1.1, workers’ remittance as a percentage of GDP in is

quite significant averaging about 18 percent for these countries. Thus, these realities make a study on the subject worth embarking on.

Workers' remittances as a potential source of external development finance for many developing countries provide a much more stable source of foreign exchange than other foreign currency flows to developing countries. This is especially relevant to Nepal, where official aid flows have fluctuated over the years. The increasing attention is also due to the growing volume of official financial remittances to low income countries and their potential contribution to the development of the receiving regions. But despite the large interest in remittances, their role in economic growth and development remains unclear. First, it is extremely difficult to gather accurate data on remittances. This is because many remittances are not channeled through the payment system and are left outside the official statistics. In addition, most studies on workers' remittances flows to Nepal tend to be a case study and just trend analysis which this does not allow for any form of general inference.

Remittances can also be countercyclical or procyclical with the GDP in recipient countries. On the one hand, remittances motivated largely by altruism, are argued to have a tendency to move counter-cyclically with the GDP in recipient countries. The reasoning here is that migrant workers are expected to increase their support to family members during down cycles of economic activity back home. This expectedly will compensate the remittances beneficiaries for lost family income due to unemployment or other crisis-induced reasons. However, remittances conceived as procyclical with output in recipient countries may act as a destabilizing force. In this case, procyclical remittances increase the capacity of swings in remittance flows to produce additional fluctuations in output or current account balances, with serious macroeconomic effects (Sayan, 2004). It is quite obvious from the foregoing that, despite the increasing importance of remittances in total international capital flows, the direct or indirect relationship between remittances and economic growth and development has not been adequately studied.

This study sheds additional insight into the inconclusive debate on the remittance – growth nexus by exploring the macroeconomic impact of remittances on economic growth and development in Nepal. It does this within the extended neoclassical growth framework using a balanced panel data set spanning from 2000 to 2011 for Nepal.

1.3 Objectives of the Study

The overall objective of this study is to investigate the relationship among economic indicators with workers remittance in Nepal. The specific objectives are to:

- (i) To gain better understanding of Nepalese workers remittance as well as the major economic variables of Nepal.
- (ii) To study the various macroeconomics variables and changes occurred in them on the basis of various interval of time.
- (iii) To examine the relationship between macroeconomics variables and workers remittance In Nepal.
- (iv) To calculate correlation and causality, if any, between workers remittance and macro economic variables.
- (v) To identify the individual remitting habit and their understanding of relationship between workers' remittance and country economic.

1.4 Significance of the Study

This research completely deals with the study of the workers remittance of Nepal and its correlation with the macroeconomic variables. The study is significant in the following ways:

- (i) To have an overview of the workers remittance inflow in Nepal.
- (ii) The research will try to find out the current scenario of Nepalese workers remittance inflow.
- (iii) The research will be beneficial for the student, researchers, banking sectors, entrepreneurs and policy makers to learn about the scenario on the workers remittance inflow as well know the prospect and challenges of workers remittance facing.
- (iv) To learn about the various macroeconomic variables.
- (v) To know about the impact of various macroeconomic variables on workers remittance inflow in Nepal.

1.5 Research Questions

The overall aim of the research is to explore the relationship between the workers remittance inflow in Nepal and macroeconomics variables. To be more specific, the research questions for this study are:

- (i) Whether there exists relationship between workers remittance and the macroeconomic variables?
- (ii) Is there any significant relationship between workers remittance and the macroeconomics variable?
- (iii) Is there any variation in the workers remittance inflow and the macroeconomics variables over the period of time?
- (iv) Do the macroeconomic variables have some impact on the workers remittance inflow?

1.6 Statement of Research Hypotheses

The following testable hypotheses which are implied in the research questions are considered appropriate for this study and are therefore subjected to empirical investigation. These hypotheses are stated in their alternate context as follows:

1. Alternate Hypothesis (H1): There is a significant relationship between percentage change in workers' remittance and percentage change in GDP annual growth rate.
2. Alternate Hypothesis (H2): There is a significant relationship between percentage change in workers' remittance and percentage change in Inflation rate.
3. Alternate Hypothesis (H3): There is a significant relationship between percentage change in workers' remittance and percentage change in exchange rate.
4. Alternate Hypothesis (H4): There is a significant relationship between percentage change in workers' remittance and percentage change in FDI.
5. Alternate Hypothesis (H5): There is a significant relationship between percentage change in workers' remittance and percentage change in Export as % of GDP.
6. Alternate Hypothesis (H6): There is a significant relationship between percentage change in workers' remittance and percentage change in Import as % of GDP.
7. Alternate Hypothesis (H7): There is a significant relationship between percentage change in workers' remittance and percentage change in Fixed Capital % of GDP.

8. Alternate Hypothesis (H8): There is a significant relationship between percentage change in workers' remittance and percentage change in Interest Rate Spread.
9. Alternate Hypothesis (H9): At least one $\beta_1 \neq 0$: There is a significant relationship between percentage change in workers' remittance (dependence variable) and one independent variable and there is significant difference between sensitivity of dependent variable with each independent variable.
10. Workers' remittances do not significantly promote economic growth (GDP) in Nepal.

1.7 Operational Definitions and Assumptions

1.7.1 Operational Definitions

a. Workers Remittance

Workers' remittance is defined as transfer made by migrants employed and resident in the compiling economy to their relatives in their country of origin. Workers' remittances include household to household transfers in cash and in kind. Funds sent by migrants to their country of origin to purchase real estate or invest in local business are recorded not as remittances but as foreign direct investment transactions.

b. Macroeconomics

It is the study of the overall aspects and workings of a national economy, such as income, output, and the interrelationship among diverse economic sectors. It can also be defined as analysis of a nation's economy as a whole, examining aggregate data, such as inflation, national investment, foreign trade balance, poverty rate and unemployment.

c. Variables

A characteristic, number, or quantity that increases or decreases over time, or takes different values in different situations is known as variables. Two basic types of variables are (1) Independent variable: that can take different values and can cause corresponding changes in other variables, and (2) Dependent variables; that can take different values only in response to an independent variable. We have considered GDP (Growth %), Exchange Rate, Inflation Rate, FDI, Import as % of GDP, Export as % of GDP, Fixed Capital Formation as % of GDP, Interest Spread Rate as independent variables whereas Worker's Remittance as dependent variable.

1.7.2 Assumptions

The following are some of the assumptions made for this research purpose:

- For the significance of the test, the significance level is assumed to be 5 percentages.
- For performing correlation and regression analysis, the significance level is assumed to be 5 percentages.

1.8 Limitation of the Study

The limitations of the study are listed below:

- The study was based on the secondary data related with macro economies variables from 1995 to 2012.
- The overall study is conducted with reference to major different macroeconomic eight variables, other macroeconomic variables are exclude from the research.

1.9 Scope of the Study

The study employs data covering a period of seventeen years (1995-2012). The choice of this period is explained by the availability of data as well as the fact of a dramatic rise in recorded remittance flows to the developing countries over this period. The study is limited to only Nepal that reported inward remittances receipts for the period- 1995 and 2012.

Remittance flows will be restricted to inter-household unilateral and unrequited transfer of cash earnings, meaning that such transfer is void of any form of *quid pro quo* terms, across national boundaries only. The implication is that remittances in forms of material transfers by migrant workers to their home countries, compensation of employees, or unrequited inter-household cash transfers within each economy under investigation, are not covered in this study. It is important to clarify here that the study is restricted to the macroeconomic impact of remittances on the receiving economies and not on their microeconomic impact.

1.10 Organization of the Study

The study is divided into six chapters. The first chapter deals with general introduction, patterns of workers' remittance, economic growth, investment, foreign trade and other macroeconomics variable in Nepal. The second chapter is the review of the theoretical literature, the empirical literature, and third focus with the methodological applied in research. The fourth chapter comprises of the data analysis of various research hypothesis with respective methodology. Lastly, chapter five deals with the summary, conclusion and recommendations for further research.

CHAPTER TWO: REVIEW OF LITERATURE

2.1 Literature Review

Today the term remittance has taken a central place in debates among development experts all over the world owing partly to the fact that its volume is growing at an exponential rate in recent years. The renewed debate started particularly after 1990s when it was observed that the dependency theory and structural views on remittances, which dominated the decades of 1970s and 1980s and maintained a pessimistic view on remittances, witnessed a downfall. The dependency theorists were of the view that remittance never contributes to the development of underdeveloped countries mainly for the reason that international migration encourages brain drain from the developing countries depriving them of the human capital that they desperately need to meet their development goals.

Prior to the dependency and structural views, however, the developmentalist and neoclassical thinkers during 1960s and 1970s had maintained optimistic views on remittances believing that capital and knowledge transfers by migrants would help achieve development needs of least developed countries in the world. The same views have taken incarnation at the start of this century bringing back the debate about remittances on the floor once again. The oscillations on the views regarding the development impact of remittances were not just hypothetical claims; they were the results of mixed theoretical and empirical justifications. The literatures so far are vastly mixed and they offer no conclusive answer regarding whether remittance is good or bad for a country.

Of the studies that demonstrate adverse effects, Merkle and Zimmermann (1992) and Ghosh (2006) claim that the remittances is an unreliable source of external revenue for families, regions and states because the observation is that remittances would rapidly decline after migrants settle and integrate at the destination in the long-run. This tendency is famously known as decay hypothesis as referred by Brown (1997). Chami et al. (2003), on the other hand, argue that remittance encourages reducing efforts to engage in economic activities. Davis and Carr (2003) conducted the study in Latin America and Caribbean and found that in rural areas, migration may reduce the incentives for land conservation because the land conservation activities are mostly labor intensive.

Other studies have challenged these views, however. As pointed out earlier, the worldwide flow of remittances has become one of the dominant sources of financial transfer to developing countries. The global remittance transfer is emerging as a substitute to traditional financial transfers such as official development assistance and foreign direct investment that were designed to help underdeveloped countries. To the greater extent than the traditional sources, the remittance transfer directly reaches the hands of the people who mostly need it, contributing to alleviate poverty right on the ground. To counter the decay hypothesis, for example, researches have pointed out that the longer duration of stay of migrants may not invariably reduce the size of remittances but instead may increase the remittances when a rise in income in the destination countries increase the capability to remit. This might partly or entirely oppose the view of possible weakening of ties with origin countries over time (de Haas and Plug (2006)). In addition, the cyclical fluctuations in economic activities in destination countries explain most of the variations in remittance inflow rather than the migrants' loosening ties with their home country (Puri and Ritzema (1999)).

The evidences have been divided regarding the socio-economic effect of remittances in the short-run or in the long-run. The economic impact of migration can initially be negative through the lost-labor effect, but the positive consequences through remittance expenditure and investment may take decades to fully materialize. In a study of migration from five African countries to South Africa's mines, Lucas (1987) concluded that migration diminishes domestic crop production in the short run, but enhances crop productivity and cattle accumulation through invested remittances in the long run and results in increased domestic plantation wages as well. Taylor (1994) confirmed that the combination of lost-labor and remittance inflow may originally have a negative effect on production in migrant-sending regions but have a positive impact in the long run.

The study by Adams and Page (2005) with the extensive coverage of 71 developing countries concluded that international migration and remittances significantly reduce the level, depth, and severity of poverty in the developing world. It is believed that international remittances flowing from north to south hemisphere have reduced poverty directly or indirectly. This result can be explained by the fact that the households in low income countries receive a very large share of their total household income from remittances. When these very poor households receive

remittances, their income status changes dramatically, resulting in a large effect on poverty reduction (Adams (2004)). This study revealed that the mean income of a migrant household is 17.3% higher than a non-migrant household. The shares of household expenditures on food, education, clothing, and recreation all increased with the availability of remittances.

The effects have been either positive or negative when observing the impacts in multi-dimensional social and psychological aspects. Siddiqui (2005) found that in some instances migration afforded children better educational opportunities whereas in others children's education suffered because of the absence of their mothers. Likewise, most women reported greater confidence following migration but some felt guilty for the misfortunes that struck their families in their absence.

Besides, Amuedo-Dorantes and Pozo (2006) concluded that the increased remittance in receiving country provide a cushion for income risk for receiving migrants. An increasing number of studies indicate that economic and currency crises in origin countries tend to increase remittance transfers corroborating the idea that remittances serve to spread income risks and smooth consumption (Blue (2004)). Edelman et al. (1988) used a social allocation matrix (SAM) approach for a rural village in Mexico and found that there is a significant role of remittances from both domestic and international migration to affect economic activities in the village.

The positive effects were not universal in all parts of migrant-sending communities, however. de Haas (2007a) reveals that the extent to which the investment made by migrants fundamentally depends on the migrants' legal rights in destination countries, the household's income, and the specific political and economic conditions in the countries of origin. In some cases, remittances have enabled migrants to invest in land and cattle (VanWey (2005), de Haas (2006a)), in other cases remittances have generally not been dedicated to agricultural improvements and overwhelmingly invested in housing and land (Jokisch (2002)). Similarly, while in some cases most remittance-driven investments have remained within the sending region (de Haas (2006a)), in other cases migrants prefer to invest in urban areas (McCormick and Wahba (2003)).

For the case of Nepal, the studies carried out so far have been very limited, despite the fact that Nepal stands as one of the major remittance-recipient countries in the world. A NRB study conducted in 2002 revealed that migrant workers in Nepal invested their money mainly for loan

repayment, purchasing houses, land and jewelry and depositing in banks (NRB (2002)). In another study by Thieme and Wiss (2005) conducted in western part of Nepal found that there was an increased financial capital, education of children, migration specific knowledge and increased social capital in the remittance-recipient households. The study also showed that migrants were found to be sending their money back home personally or by informal hundi system.

2.2 Migrant Workers' Remittances

2.2.1 Meaning and Motivation to remit

Migrant workers' remittances can be defined as person – to – person financial flows, well – targeted to the needs of recipients who are often poor. These flows do not typically suffer from governance problems that are normally associated with official aid flows (Ratha and Mohapatra, 2007). Remittances can also be referred to as transfers of funds by workers (remitters) who are living and working in developed (host) countries to their families in home (migrant sending) countries (Karagöz, 2009).

Erroneous practices happen due to the tendency of treating informal remittances as foreign exchange leakages from the labour exporting country. The leakages of this form are categorized as follows: (1) personal imports of migrant workers (i.e. goods imported by returning migrants under the duty free allowance facility or brought along with them under personal baggage/ gift facilities) and (2) the savings brought home on return (in the form of cash or traveler's cheques) that are latter converted into local currency at domestic banks (Athukorala, 1993). The informal means include: retention of remittance savings in personal accounts of migrants, hand carrying and use informal foreign exchange intermediaries (Puri and Ritzema, 1999).

In addition, remittance figures are still faced with the challenge of underestimation/ under recording. Puri and Ritzema (1999) observed that officially transferred remittances published in the recipient countries' balance of payments grossly underestimate the actual level of remittances. The degree of under recording/ leakage varies from country to country. There are two types of leakages: one due to erroneous (imprecise accounting) and the other due to the choice of informal, unsupervised channels for remittances.

Several reasons have been advanced to explain the occurrence of Leakages of remittances which mostly relate to convenience of migrant and family. Puri and Ritzema (1999) summarize these reasons as follows: firstly, where banking and foreign exchange facilities are inadequate, inefficient, or even destroyed, informal non-bank means of transfer may be used, regardless of transactions costs. Secondly, significant price differences between the remittance sending and receiving countries may encourage sending or carrying remittances in the form of goods (remittances in kind) either for personal use by the recipient or for resale in the informal market. Thirdly, informal foreign exchange markets may be used when the remittance – receiving country's exchange rate is overvalued which acts as an implicit tax on those who remit money through official channels. This closely relates to the highly restrictive trade and exchange control systems in place which generate a demand for capital flight through under-invoicing of imports and smuggling. Fourthly, financial repression, characterized notably by negative real interest rates on domestic savings, also drive money balances to foreign bank accounts.

Various theories have been advanced to explain why migrant workers remit part of their incomes to homes countries. Chimhowu *et al* (2003) notes that there are three schools of thoughts on motivation to remit and these are: risk sharing, altruism motives, and risk sharing with altruism. Risk – sharing school of thought explains that a migrant sends funds in order to secure own and family livelihoods in the event of external shock. Altruism school explains one's obligation to the household that is remitting out of affection and responsibility. Lastly, the risk – sharing with altruism adds the self – interest to the livelihoods.

According to the Organization of Economic Cooperation and Development, OECD (2006), the International Monetary Fund (IMF) interprets and records remittances in three different sections of the balance of payments which include: compensation of employees, workers' remittances and migrants' transfers. Compensations of employees are the gross earnings of workers residing abroad for less than 12 months, including the value of in-kind benefits (recorded in the current account). Workers' remittances are the value of monetary transfers sent home from workers residing abroad for more than one year (also recorded in the current account). Migrants' transfers

represent the net wealth of migrants who move from one country of employment to another (recorded in the capital account).

While the IMF categories are well defined, several problems have been identified to be associated with their implementation worldwide which can affect their comparability (Jongwanich, 2007). In order to capture the extent of migrant remittances in a better way, scholars use different calculation methods. Some calculate them as the sum of all the three components identified above i.e. compensation of employees, workers' remittances, and migrants' transfers (Ratha, 2003). Others sum up just compensation of employees and workers' remittances (Taylor, 1999). Daianu (2001) proposes a totally different method of computation of remittance credits that involves summing up compensation of employees, workers' remittances, and other current transfers of other sectors. Daianu's method of estimating international migrants' remittances flows is considered to be the most appropriate to overcome the discrepancies referred to above (OECD, 2006).

2.2.2 Remittance Data and Measurement

A study by De Luna Martinez (2005) in 40 developing countries revealed that, only 65% of central banks collected data on the activities of bureaux de change, and just 35% and 38% on the activities of money transfer companies and post offices. However, the activity of commercial banks was better documented, with 90% coverage.

Another major constraint is in the estimation of the share of payment flows sent via informal channels. These flows comprise all money transfers that do not involve formal contracts, such as money transferred in cash or via other means (e.g. fax) between friends, family members or community members. World Bank (2006) study indicated that in this domain, only a quarter of central banks in the sample collected data on informal transfers, via the use of special inquiries, either by questioning migrants, upon return to their country, or recipient households.

Examination of the role of remittances in economies still faces a challenge of the quality and coverage of data in several countries (Jongwanich, 2007). These data limitations are attributed to informal means of channeling remittances to migrant sending countries and improper procedure

of capturing remittance statistics. For instance, a number of data entries have classified export revenues, non – resident deposits, tourism receipts or even Foreign Direct Investment (FDI) as under remittances. On the other hand, some data in many countries is not recorded due to weaknesses in data collection, and ignoring small remittance transactions through formal channels such as post office, exchange bureaus and other agents of Money Transfer Operations (MTO) in official statistics (Jongwanich, 2007).

However, Jongwanich (2007) observes that the quality and coverage of data on remittances are still limited by difficulty in classifications in several countries such as Malaysia and China. In some countries, remittances are often misclassified as export revenue, tourism receipts, non-resident deposits, or even foreign direct investment (FDI). Secondly, a substantial portion of formal remittance inflows go unrecorded, due to weakness in data collection.

Rocher and Pelletier (2008) note that efforts to standardize the methodology, collection and recording of reliable data in terms of money transfers remain particularly sensitive. One of the main sources of difficulties is the myriad of financial and non-financial institutions likely to capture all or some of the remittance flows, which involves, for central banks establishing the balance of payments and preparation of specific reports.

Conspicuously, there is no universal agreement on how to measure international workers' remittances to developing countries (Karagöz, 2009). Puri and Ritzema (1999) stress that data collection, reporting practices and procedure among labour – exporting and labour – receiving countries need to be streamlined. Consequently, the measurement uncertainty along with unknown extent of unrecorded remittances estimated to exceed 50% have necessitated the empirical analysis to merely emphasis 'official cash remittances' (El Mouhoud *et al.*, 2008; Karagöz, 2009, Aydas *et al.*, 2004). This study therefore used official cash remittances to measure total remittance inflows in Nepal.

In view of the risk of errors and approximations inherent in these methods of evaluation and the absence of monitoring of these flows by a large number of central banks, the balance of payments data therefore does not reflect the exact amount of the money transfers. Consequently,

informal transfers to Latin America are estimated at 5 to 20% of official payments. The proportion is even higher for flows to Nepal, where informal transfers represent 45 to 50% of formal flows (NRB, 2012).

Reporting of small remittance transactions made through formal channels is not mandatory in most countries and remittances sent through post offices, exchange bureaus, and other agents of money transfer operators (MTOs) are often not reflected in official statistics. Thirdly, inflows through informal channels such as unregulated money transfer firms or family who carry remittances are rarely computed.

2.3 Determinants of Workers' Remittance Inflows

Puri and Ritzema (1999) identifies two groups of factors that influence the level and timing of remittance inflows in domestic economies and these are distinguished as micro – factors and macro – factors. Whereas, the micro – economic factors are mostly socio – demographic factors related to migrant and his/ her family, the macro – economic ones combine both institutional and political factors affecting the economy in general. Generally, both micro and macro factors affect the country's pool of remittance income, the decision whether or not to send remittances, the amount to remit and the uses of remittance incomes.

The level of migrants' remittance flows depends on both the migrants' ability, *i.e.* their income and the savings from income, and their motivation to remit savings back to the home country (OECD, 2004). The willingness to remit is also determined by the duration of migration, the family situation of migrants which is dependent on marital status and possession of children and network effects based on attachment of the people moved with or left behind (Munshi, 2003).

Furthermore, Schrooten (2005) categorizes the factors determining remittance inflows into two *i.e.* objective and subjective factors. Objective factors are related to macroeconomic conditions in the home country and these include: the average income level and the unemployment rate that seem to directly and indirectly effect the situation of the household of origin. In addition, remittances are often considered an instrument to overcome constraints and market failures in the domestic financial sector. The subjective factors are: duration of the stay of migrant in host

country, the level of migrant skills, the earnings of the migrant as well as the economic situation of the family of origin might play a crucial role.

2.3.1 Micro – economic Determinants

Micro – economic determinants operate mostly at household level. These factors are: the ratio of female in population of host country, years since worker migrated, household income level, employment of other household members and marital status of migrant. Other micro economic factors include: years of education of migrant and occupation status of migrants (Aydas *et al.*, 2004). In addition, Ilahi and Jafery (1999) add two to the list of variables as: number of children and their education position, and the pre – migration economic situation. These socio – demographic determinants are argued to have a close relationship with migrant motives to remit (Aydas *et al.*, 2004).

Several microeconomic studies have indicated that the income level of the migrant and his family are the main determinants of remittance inflows (Buch and Kuckulenz, 2004). For example, Durand *et al.* (1996) showed that the most important determinants shaping the amount remitted included: the migrant's wage and job situation, the number of dependents at home, marital status, and age of the migrant. Latter, Brière *et al.* (2002) used Dominican data to examine the two main motives to remit, i.e. the intention to insure relatives at home against changes in income and the intention to invest in the home country. The authors found the main factors determining the magnitude of remittances as the migrants' destination, gender, and household composition. The study concluded that the motive of migrants to remit crucially depended on whether migration is temporary or permanent.

Glytsos (1997) while examining the differences in remittance decisions between temporary migrants and permanent migrants found that remittances were often obligatory for temporary migrants, while remittances sent by permanent migrants were mostly gifts to relatives in the home country. Generally, empirical research on determinants of remittance inflows has mainly focused on micro economic level using survey data (Shahbaz and Aamir, 2009; Aydas *et al.*, 2004; and Buch and Kuckulenz, 2004). Micro economic case studies have however been criticized for undervaluing the macro economic impact of remittances by focusing on isolated

community. Therefore, the current study deviated from the micro economic position by concentrating on macro economic factors affecting remittance inflows.

2.3.2 Macro – economic Determinants

Macro – economic determinants are those that are economic, political and institutional in nature. Several studies have considered various macro economic variables while empirically examining factors affecting remittance inflows. The variables include: unemployment rate, stock of emigrant workers, external wage rates, domestic per capita income, inflation rate, foreign exchange rates, domestic interest rates or interest rate differential, and differences in economic situations in migrant sending and recipient countries (El Mouhoud *et al.*, 2008; Aydas *et al.*, 2004; Buch and Kuckulenz, 2004). Furthermore, Sakka (2005) added to the list of macroeconomic variables as: monetary policy proxied by money supply growth over trend GDP and fiscal policy discipline proxied by budget deficit. Previous studies such as Aydas *et al.* (2004) have suggested that host country income is a significant determinant of workers' remittances due to both increased quantity demanded of the migrant labor and increase in the wages offered to the workers.

Aydas *et al.* (2004) evaluated macro economic impacts using a data range spreading from 1979 to 1993 and found black market premium, inflation rate and military regimes in Turkey negatively and significantly affected remittance inflows while economic growth positively affected remittances. On the contrary, negative impacts by the same variables have been reported in studies that end up with altruistic conclusions.

Aydas *et al.* (2005) found insignificant impact of emigrants stock on remittances in Turkey while a study by Elbadawi and Rocha (1992) in North Africa and South Europe found positive and significant impact of the same variable. The income level of the migrants' country of origin and inflation have yielded findings leading to the conclusions on motivation to remit either as consumption smoothing (altruistic) or investment motives.

Schrooten (2005) modeled a dynamic panel data set for 24 former socialist countries for a period of 1990 to 2003 and found the determinants of remittances per capita and remittances as share of GDP were similar. This study particularly observed that a rise in per capita GDP by 1% would

lead to a decrease in remittance inflows by 0.8%. The current study further investigated the influence of the macro economic variables in determining the level of remittance inflows to Eastern African economies that are typically classified as Least Developed Countries (LDCs).

If available wage rates and the economic situation in host country are comparably better, they attract a larger number of emigrants and increase the remittance capacity to home country and thus a positive sign would be expected (Shahbaz and Aamir, 2009). Related findings are also reported by Huang and Silva (2005) in Mexico; Gupta (2005) in India, and Elbadawi and Rocha (1992) for North Africa and South Europe. The stock of workers abroad is also equally argued to positively affect the remittance receipts.

Growth of the economy in terms of annual change in per capita GDP or real GDP, and inflation in the economy of origin may affect the remittances in both ways. If investment is the main motive to remit, the effect on remittance inflows by the former variable would be positive and the latter would give a negative relationship. However, if the concern for the relatives in the country of origin dominates migrants' decisions to remit, opposite results in either case could be obtained (El Mouhoud *et al.*, 2008; Aydas *et al.*, 2004). The effect of high interest rate differential is also ambiguous due to two possible reasons: while high domestic interest rates may provide incentives for sending remittances, it may also reflect economic instability and high risk and thus negatively affecting the inflow of these private transfers (Aydas *et al.*, 2004).

Others studies incorporate other variables such as trade openness or the Terms of Trade (TOT) and is computed as the sum of exports and imports over GDP. Trade openness of a given economy is an indicator of international integration of the real sector. A higher degree of this indicator makes the export of labor forces - which is a precondition for remittances - less attractive. Therefore, a negative sign of this variable is expected (Schrooten, 2005).

In all, the available empirical evidence on the relationship between remittances and macro economic variables is still inconclusive (Shahbaz and Aamir, 2009). The only research work that has led to conclusions that investment motives drive migrants' decisions to send remittances, have studied the macro – economic determinants of remittances in small economies. All these

found positive impacts by per capita GDP and interest rate differential while negative impacts are yielded by domestic inflation rate.

El Mouhoud *et al.* (2008) analyzed bilateral data between Southern and Eastern Mediterranean countries (SEMC) and 11 topmost migrant hosting countries. The findings of the study led to the conclusion that altruistic motives dominated remittance inflows into SEMC.

El Mouhoud *et al.* (2008) argue that host country effects are much more significant than the home country effects. The authors support their argument with the work of Huang and Silva (2005) who tried to determine whether the host and/or home country macroeconomic conditions are the ones affecting remittances. The latter authors using a Vector Error Correction Model (VECM) found host country economic conditions to be the most important factor driving remittances. VECM was used because they argued that these models solve the endogeneity problem between remittances and other macroeconomic variables. Such a finding has many important policy implications for the migrant exporting countries for which remittances are the main foreign exchange funding. This would imply national governments would influence little the magnitude of remittances using domestic policies.

Shahbaz and Aamir (2009) used time series data for a period of 1971 to 2006 to model altruism and the influence of other factors that affect remittances inflows. The findings of that study were that real world interest rate and depreciation of the foreign exchange had an inverse but insignificant impact on the level of remittances.

In summary, it has been argued that the theoretical literature on the macroeconomic determinants of remittances is much less rich. This study therefore considered to further examine the major macro economic factors influencing remittance inflows since the factors underlying these inflows can also be manipulated to enhance the economic development.

2.4 Impact of Remittances on the Economy

2.4.1 Impact on the Output of the Economy

Remittances have become a popular issue in the international financial literature because of their volume and their potential to reduce poverty. They are relatively stable and are an attractive source of foreign earnings for developing countries. Workers' remittances are said to positively affect growth through a number of channels (Ratha, 2003). The positive effect may be realized through entrepreneurial activity (physical investment), financing education and health or improving a country's creditworthiness and thereby enhance its access to international capital markets (Jongwanich, 2007).

Empirical studies that have yielded negative impacts on growth include: a study by Chami *et al.* (2003), covering 113 countries found that remittances had a negative effect on growth which result was attributed to moral hazard and concluding that remittance incomes allow recipient families to work less consequently affecting labour supply and productivity. Similar results are reported by Karagöz (2009) who used time series data for Turkey for period of 1970 to 2005 and found the ratio of remittances to GDP to be negatively correlated to per capita GDP. The growth elasticity of remittances was -0.03 and the study concluded that the third generation in the Western Europe is not so inclined to remit and develop strong entrepreneurial skills.

According to Chami *et al.* (2005), modeling remittance receipts can be based on either investment, altruism, or exchange based motivations. Altruistic motives school of thought argues that remittances are compensatory in nature. If present in the model, moral hazards could also be present which affects the recipient relatives' effort to work and consequently resulting into negative effects of remittances on output. However, when remittances are observed as investment inflows, the effect on output would be opposite, and expected to increase output growth (Chami *et al.*, 2008). In such a case, the recipient is modeled as expending effort on investment projects that have uncertain income. Lastly, exchange based motivation requires that the recipient expend effort on looking after the interests of the immigrant as well as the recipient's own interests (Chami *et al.*, 2005). This motivation also results into positive impact on output. The current study opted for the investment motivation and it is argued that remittances could be a source of capital for economic development in Nepal.

Schrooten (2005) identifies three types of theoretical models used in literature to study macro – economic effects of remittances. These theoretical strands are: those arguing that remittances have a positive impact on the domestic economic development, those explaining negative effects on the economy and then the other combining the above two competing arguments. Within the framework of positive effects of remittances, they are said to provide a fund for higher savings and foreign exchange and are often considered as to perform similar functions as other international flows and thus to broaden the base for economic development (Connell and Conway 2000). A second strand of literature focuses on the adverse effects of remittances and explains that a high dependency on remittances might decrease the incentives for a sufficient domestic economic policy. It is argued that worker – sending countries might get accustomed to these additional funding (Martin 1990). This is believed to negatively affect the incentives system that would create an efficient domestic institutional framework. Furthermore, there might be a tendency of substituting a good economic policy by higher future migration in the economy (Schrooten, 2005). A third strand of literature tries to bring together the merits and demerits of the two competing strands. This arises because remittances influence investment and growth in many ways, directly and indirectly. Consequently, the studies in support of the third strand of models clearly show that the impact of remittances on the domestic economy is highly dependent on the domestic policy (Glytsos, 1997; McCormick and Wahba, 2000).

In Contrast, a study by IMF (2005) over a period of 1970 to 2003 for 101 countries found no statistic link between remittances and per capita output growth, or other variables such as education and investment rates and this was partly attributed to measurement difficulties.

Adams and Page (2005) examined impacts of remittances on poverty in 71 developing countries. The results show that both international migration and remittances significantly reduce the level, depth and severity of poverty in these countries. Solimano (2003) reported a positive association between remittances and growth for a panel of Andean countries. Lastly, Faini (2002) found the impact of remittances on growth to be positive and argued that remittances overcome capital market imperfections and allow migrant households to accumulate positive assets.

Loser *et al.* (2006) notes that remittances respond to investment opportunities in the home country as much as to charitable or insurance motives. Many migrants may also invest their savings in small businesses, real estate or other assets in their own country they realize that the local markets better than those in their host countries, or probably expecting to return in the future (Schiopu and Siegfried, 2006; Chimhowu *et al.*, 2003). In about two-thirds of developing countries, remittances are mostly profit-driven and increase when economic conditions improve back home (Loser *et al.*, 2006). Such external monetary flows are particularly used for investment where the financial sector does not meet the credit needs of local entrepreneurs.

According to Jongwanich (2007), there is little agreement and scant information in the literature concerning the impact of international migration and remittances on economic growth. Firstly, remittances may reduce credit constraint of household receipts so that entrepreneurial activity and private investment could increase (Yang, 2004; Woodruff and Zenteno, 2004). Households in developing countries confront much less efficient credit and financial markets so that access to credit markets seems to be their biggest concerns and thus remittance inflows could help households to set up their entrepreneurial activity (Karagöz, 2009; Giuliano and Ruiz-Arranz, 2005).

While building on the strands explained above, Fayissa (2008) points out that the macroeconomic impacts of remittances have been disregarded mainly due to the assumption that they generate negative effects in the economy. The author explained that the theoretical strand suggested that workers' remittances are mainly used for consumption purposes meaning they are compensatory transfers between family members who lost skilled workers due to migration and, hence, have minimal impact on investment. On the contrary however, Stahl and Arnold (1986), and latter Chami *et al* (2005) have argued that the use of remittances for consumption may have a positive effect on growth because of their possible multiplier effect. This assertion is supported by results that have shown that remittances positively impact on the conventional sources of growth such as investment in physical and human capital and the ability of households to spend on health, housing, nutrition, and other household items and enhance their productivity (Fayissa, 2008). In addition, Kihangire and Katarikawe (2008) observed that though remittances are

primarily intended to meet the basic needs of family members back home, they could also generate opportunities for local communities and national economies.

Empirically, the impact of remittances on growth in cross country studies has yielded mixed findings (Karagöz, 2009; Gupta *et al.*, 2007). This has been partly attributed to the decentralized decision-making process that characterizes the use of remittances which makes it difficult to gauge their aggregate effects. Studies that focus on the labor supply response of recipient households have found that remittances lower growth (Azam and Gubert, 2005; Chami *et al.* 2003). On the other hand, studies that link remittances to investment, where remittances either substitute for or improve financial access, tend to conclude that remittances stimulate growth (Toxopeus and Lensink, 2006; Giuliano and Ruiz-Arranz, 2005).

Over and above physical investment, remittances could also help to finance education and health, which are also key variables in promoting (long-term) economic growth. Secondly, World Bank (2006) points out that the calculation of country credit ratings by major international also depends on its magnitude of remittance flows. The higher the magnitude of remittance flows the better the credit rating rank the country could reach. This is another way to increase both physical and human capital investment, thereby enhancing economic growth. Thirdly, remittance inflows could generate positive effects to economic growth through multiplier-effect mechanisms (Ratha, 2003). While there are backward and forward linkages in investment activities, an increase in investment of one household could generate an increase in income to other household (Karagöz, 2009). In the context of increasing returns, the expansion of one sector could increase the optimal size of other sectors.

Ratha and Mohapatra (2007) attribute these kinds of results to the fact that the effects of remittances on human and physical capital are realized over a very long time period. Secondly, the authors explain that there is difficulty associated with disentangling remittances counter-cyclical response to growth which implies that the causality runs from growth to remittances. Rocher and Pelletier (2008) note that positive and significant coefficients between remittances and long term growth are only identified when the variables relative to investment are excluded from estimations.

However, a consensus is now emerging as regards the stabilizing effect of remittances on the growth of developing economies and their role as buffers (Rocher and Pelletier, 2008). This position should further be supported by more empirical studies. Remittances are more positively correlated to the weak economic performance of the recipient country. Remittances are likely to generate more of positive impacts on small size economies than their large counterpart. This would suggest that the motive behind most remittances is to compensate income loss following deterioration in the economic environment and the results are supported by the research by Chami *et al.* (2008).

In a study covering several Sub Saharan African countries, Fayissa (2008) observed that the coefficients of the lagged values of GDP per capita and changes in remittances have a significant and positive impact on the growth rate of African GDP per capita. Accordingly, a 10 percent increase in remittances was found to lead to a 0.04 percent growth in the GDP per capita of African economies. While accounting for the endogenous nature of the traditional growth explaining factors in the model in which the remittances are regressed against GDP per capita, found that foreign direct investment (FDI), the terms of trade (trade openness) and the institutional variable proxied by the political rights index were not significant. On the other hand, investment in physical and the lag of human capital had significant growth enhancing roles.

2.4.2 Impact on Financial Sector Growth

Financial sector growth is also commonly referred to as financial sector deepening or financial depth. Several indicators are used by different scholars to study the impact of remittances on financial depth. Giuliano and Ruiz-Arranz (2005) while citing Levine *et al.*, 2000; and King and Levine, 1993; classified the measures of financial development into two broad categories i.e. those relating to the banking sector and the others relating to the stock market. For the current study, only those relating to the banking sector were used because of the interest in knowing whether remittances are associated with more money supply and lending by the banking sector. These indicators relating to the banking sector include: domestic bank credit to private sector as a ratio of GDP and domestic bank deposits as share of GDP/ deposit rates (Aggarwal *et al.*, 2006; Apaa – Okello and Anguyo, 2006). Domestic bank credit to private sector measures the extent to which the private sector relies on banks to finance consumption, working capital, and

investment. There are also other measures of financial depth used in literature and these are: liquid liabilities of the financial system (M2/GDP) and then Deposits/GDP (Giuliano and Ruiz-Arranz, 2005). M2 as a ratio of GDP equals currency plus demand and interest bearing liabilities of banks and non - financial intermediaries divided by GDP. It is considered as the broadest measure of financial intermediation and includes three types of financial institutions: the central bank, deposit money banks, and other financial institutions.

Mundaca (2005) analyzed the effect of workers' remittances on growth in 8 countries drawn from Central America plus Mexico and the Dominican Republic using a panel data set for the period of 1970 to 2003. That study found out that controlling for financial development in the analysis strengthened the positive impact of remittances on growth. It was also concluded that financial development potentially leads to better use of remittances, and thus boosting growth. However, none of the two studies investigated the impact of remittances on financial sector growth. The current study deviated in order to contribute to the existing literature by exploring the impact of remittances on domestic bank credit to the private sector and money supply M3.

Apa - Okello and Anguyo (2006) analyzed cyclical response of remittance inflows to GDP deviations (Business cycles) for the period of 1992 – 2003 in Uganda and observed that remittance receipts were pro – cyclical to the real GDP. Both coefficients of measurement of financial development were statistically significant at 5% level with domestic credit to private sector ratio being negatively correlated while domestic deposit rates positively correlated. Their study found out that remittance flows can be counter cyclical or pro – cyclical for countries, depending on economic characteristics underlying both the migrant sending country and the migrant host countries. It was also concluded that the level of financial development plays a major role in determining remittance flows to Uganda.

Aggarwal *et al.*, (2006) used Balance of Payment (BOP) data for the period of 1975 to 2003 to study the impact of remittances on financial development. The results of the study were that remittances had a positive coefficient with the size of coefficient in the bank deposits to GDP being as twice as large the coefficient of bank credit to private sector regressions. It also observed that 1% increase in the share of remittances to GDP suggested 0.5 – 0.6% increase in

the ratio of deposits to GDP. The study revealed larger coefficient compared to findings of earlier studies which was justified as due to measurement error associated with officially recorded remittances. On the other hand, Deposits/GDP is the sum of demand, time, saving, and foreign currency deposits as share of GDP. It measures the ability of banks to attract financial savings and provide a liquid store of value. In addition to above, Kihangire and Katarikawe (2008) studied the impact of remittances on financial depth using three other proxies and these were: base money, broad money supply (M3), and Nominal Effective Exchange Rate (NEER). Lastly, domestic credit provided by the banking sector to GDP (CREDIT/GDP) is also used to proxy for financial depth, and measures how much intermediation is performed by the banking system, including credit to the public and private sectors (Giuliano and Ruiz-Arranz, 2005).

Little attention however, has been paid to whether remittances promote financial development in recipient countries (Aggarwal *et al.*, 2006). This has led to only speculations among policy makers and some scholars that remittances could lead to financial development in developing countries. The basis of this argument is the assumption that money transferred through financial institutions paves the way for recipients to demand and again access to other financial products such as credits which they would not have otherwise (Orozco and Fedewa, 2005). It is also believed that the lumpy nature of remittances encourage their recipients to seek and open bank accounts (Demirgüç-Kunt *et al.*, 2007, Aggarwal *et al.*, 2006). When recipients use banks for their financial transfers, they may have an opportunity of learning about other financial services such as lending facilities, and interest rates on deposit accounts as well as on savings accounts (Aggarwal *et al.*, 2006).

Whether and how remittances impact on financial development remains unclear (Aggarwal *et al.*, 2006). Some studies have generated results in which remittances are regressed against the measures of financial depth (Aggarwal *et al.*, 2006, Gupta *et al.*, 2007, Apaa - Okello and Anguyo (2006). Others have tended to argue that remittances impact on financial depth via economic growth (Giuliano and Ruiz-Arranz, 2005 and Mundaca, 2005). It remains contentious whether remittances themselves promote financial development or it is a well – developed financial system that enhances remittance inflows in the economy. Empirically, Giuliano and Ruiz-Arranz (2005); and Mundaca (2005) have shown that the impact of remittances on growth

is dependent on the level of financial development in a country. The two studies however yielded very different conclusions. Giuliano and Ruiz-Arranz (2005) used a panel of more than 100 countries for the period 1975-2003, and showed that remittances help promote growth in less financially developed countries. They argue that this is evidence that agents compensate for the lack of development of local financial markets using remittances to ease liquidity constraints and to channel resources towards productive uses that foster economic growth.

Financial institutions are equally thought to benefit from remittance inflows. According to Demirgüç-Kunt *et al.* (2007), remittances can affect banking services in three ways: generate a transaction demand for financial services due to fixed costs involved in sending them. Banks also earn fees on remittance receipts contributing to profitability and then enable banks to screen potential credit clients. At sector level, remittances may increase opening up bank branches especially in rural areas having large numbers of remittance beneficiaries. Whereas remittances are likely to increase the willingness of the lender to supply loans by providing a stream of income with which loans can be repaid, they might substitute for credit among households with migrants abroad thereby decreasing the demand for loans (Demirgüç-Kunt *et al.*, 2007).

2.5 Research Gap

There were many research and study conducted on workers remittance and its relationship with economic indicators, concluding variety of scientific ideas and views. In Nepal, the studies carried out so far have been very limited, despite the fact that Nepal stands as one of the major remittance-recipient countries in the world. A NRB study conducted in 2002 revealed that migrant workers in Nepal invested their money mainly for loan repayment, purchasing houses, land and jewelry and depositing in banks (NRB (2002)). In another study by Thieme and Wiss (2005) conducted in western part of Nepal found that there was an increased financial capital, education of children, migration specific knowledge and increased social capital in the remittance-recipient households.

Despite the fact, of being 7th in Top 10 Migrants Remittance Share on GDP, there was no study which depicts the relationship between workers remittance and economic development indicators in Nepal. My main focus in this study will be to analyze the worker remittance trends with economic development indicators and to build a scientific conclusion. Study will also help to

compare the relationship between remittance income and foreign direct investment in Nepal. This research will also build the relationship of workers remittance with investment (% of GDP) made in Nepal.

2.6 Theoretical Framework

This study attempts to address the issue of relationship between workers remittance and various economic variables. Various macro economic variables were identified in order to establish the relationship with workers remittance.

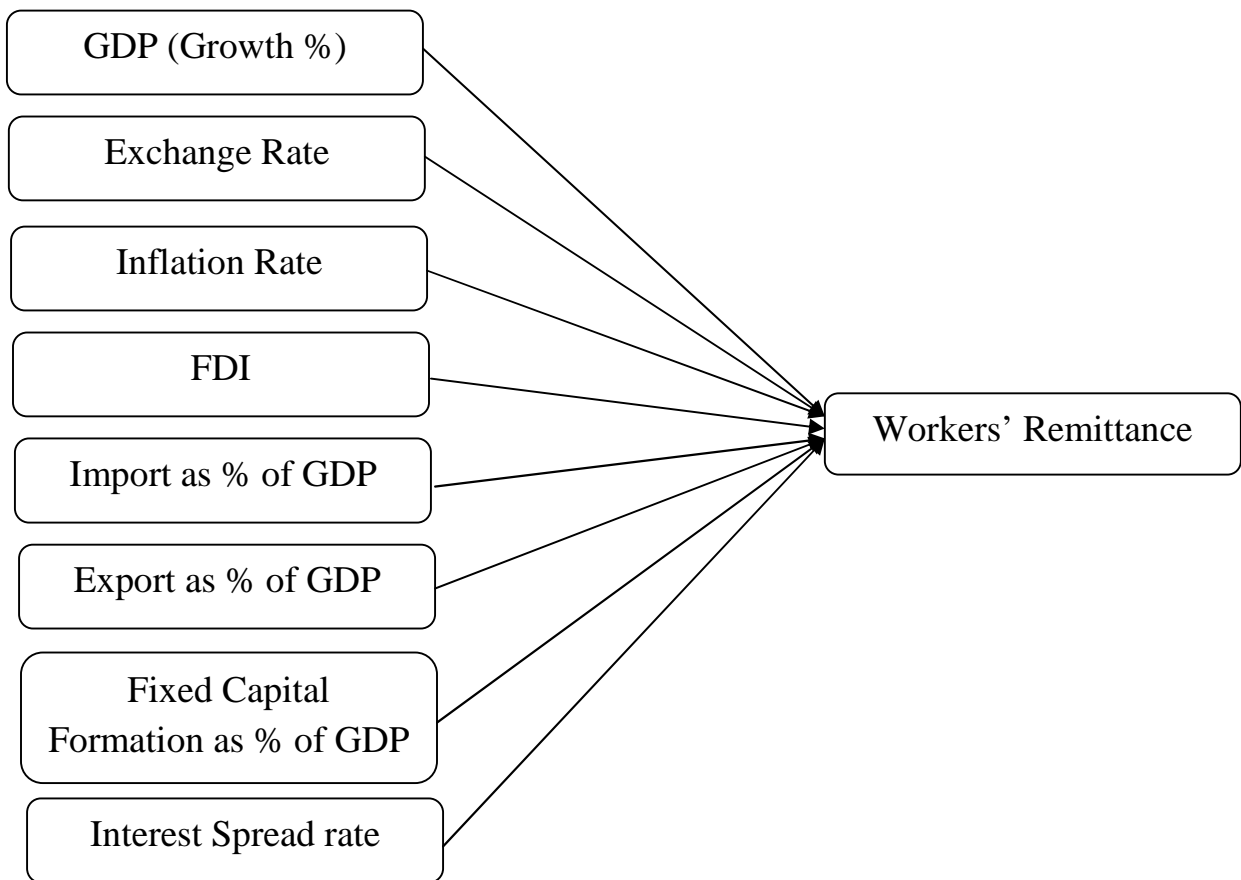


Figure 2. 1: Theoretical Framework

Defining Variables

a. GDP

The value of a country's overall output of goods and services (typically during one fiscal year) at market prices, excluding net income from abroad. Gross Domestic Product (GDP) can be

estimated in three ways in which, in theory, should yield identical figures. They are (1) Expenditure basis: how much money was spent, (2) Output basis: how many goods and services were sold, and (3) Income basis: how much income (profit) was earned.

b. Exchange Rate

An exchange rate (also known as the foreign-exchange rate, forex rate or FX rate) between two currencies is the rate at which one currency will be exchanged for another. It is also regarded as the value of one country's currency in terms of another currency. For example, an interbank exchange rate of 1.6 Nepalese Rupees (NPR, INR) to the India (INR) means that INR 1 will be exchanged for each INR1. Exchange rates are determined in the foreign exchange market, which is open to a wide range of different types of buyers and sellers where currency trading is continuous: 24 hours a day except weekends.

c. Inflation

Inflation is a rise in the general level of prices of goods and services in an economy over a period of time. When the general price level rises, each unit of currency buys fewer goods and services. Consequently, inflation also reflects erosion in the purchasing power of money – a loss of real value in the internal medium of exchange and unit of account within the economy

d. Foreign Direct Investment

An investment made by a company or entity based in one country, into a company or entity based in another country. Foreign direct investments differ substantially from indirect investments such as portfolio flows, wherein overseas institutions invest in equities listed on a nation's stock exchange. Entities making direct investments typically have a significant degree of influence and control over the company into which the investment is made. Open economies with skilled workforces and good growth prospects tend to attract larger amounts of foreign direct investment than closed, highly regulated economies.

e. Export as % of GDP

A function of international trade whereby goods produced in one country are shipped to another country for future sale or trade. The sale of such goods adds to the producing nation's gross output. If used for trade, exports are exchanged for other products or services. Exports are one of

the oldest forms of economic transfer, and occur on a large scale between nations that have fewer restrictions on trade, such as tariffs or subsidies. When export is determined in terms of GDP it termed as export as % of GDP.

f. Import as % of GDP

Imports of goods and services represent the value of all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude compensation of employees and investment income (formerly called factor services) and transfer payments.

g. Fixed capital Formation as % of GDP

Fixed capital includes tangible and intangible assets that are used in the production process for longer than one year (e.g. building, dwelling, machines, vehicles etc.) Gross fixed capital formation by business includes investment by companies, households and nonprofit institutions. Investments are registered by ownership, i.e. they are described for the economic owner of the capital good. Gross investment includes both spending to expand assets, and spending to replace assets. When these terms expressed as % of GDP is known as fixed capital formation as % of GDP.

h. Interest Rate Spread

Interest rate spread is the interest rate charged by banks on loans to private sector customers minus the interest rate paid by commercial or similar banks for demand, time, or savings deposits. The terms and conditions attached to these rates differ by country, however, limiting their comparability.

CHAPTER THREE: RESEARCH METHODOLOGY

A methodology is usually a guideline system for solving a problem, with specific components such as phases, tasks, methods, techniques and tools. It can be defined also as follows:

1. "the analysis of the principles of methods, rules, and postulates employed by a discipline".
2. "the systematic study of methods that are, can be, or have been applied within a discipline";
3. "the study or description of methods".

A methodology can be considered to include multiple methods, each as applied to various facets of the whole scope of the methodology. The research can be divided between two parts; they are qualitative research and quantitative research.

3.1 Research Plan and Design

It is basic plan, which guides the data collection and analysis phases of the project. It is a frame work, which specifies the type of information to be collected, the resources of data collection procedure-Thomas Kinnear.

The research is focusing on relationship between workers' remittance and various macroeconomic variables on the basis of data available of 1995 AD to 2012 AD of Nepal. This study is a quantitative in nature by using both survey and secondary method to examine the relationship between independent and dependent variables. The findings and conclusion of the study depends on the fully utilization of statistical data collected and analyzed using SPSS.

3.2 Source of data

The main focus of thesis is on published data i.e. secondary data. Various sources of data are examined and for some data various sources has been used in order to check the validity of data.

Our major sources of data are official site of Nepal Rastra Bank, central governing bank of Nepal, which provides all data of macroeconomic variables of Nepal. In addition, we have considered various sites such as World Bank, Asian Development Bank, UNCTAD etc.

Whereas, primary data has also been used to identify the remitting behavior of individual form both banks and individual personal prospective. Total 100 questionnaires has been distributed

out of which 20 has been designed for bank and rest of 80 has been designed for walking person whose family member are residing abroad and he/she has received at least one remittance transfer in last six month.

3.3 Data Collection Procedures

To ensure the research is conducted effectively and efficiently, the detail of procedure of obtaining information is needed in conducting the study in order to solve the problem. In this study, quantitative data of various macroeconomic variables over a period of 1995 AD to 2012 AD has been obtained from reliable sources, and compared such data with workers remittance of Nepal in order to identify the trend and relationship between those variables. Such relationship between various variables over a period of time including has been analyzed using trend analysis tools and correlation tools.

In order to identify the remittance habit of individual, primary research has also been conducted with 100 number of sample of which 80 are walking responded and 20 are bank's representative.

3.4 Data Analysis Method

The study includes different statistical tools like mean, standard deviation, T-Statistic, F-Statistic etc. and different models for trend analysis to meet the objective of the study. The data has been analyzed through SPSS program and displayed with the help of MS-Excel.

The research design adopted in this study consists of descriptive, correlation and casual research design to assess the correlation between workers remittance and macro economic variables of Nepal. The descriptive research will be adopted to undertake analyze and summarize trends of various microeconomic variables in respect to workers remittance. The study will mainly adopt correlation research design to establish the directions, magnitudes, frequency of the workers remittance with various macro variables of Nepal.

From the questionnaires, a few procedures have been done such as checking the data for accuracy. Besides that the questions were being coded to enable for analysis using Statistical packages for the Social Science (SPSS).

In order to determine whether there are significant relationships among the independent variables and dependent variables, Pearson Correlation Coefficient analysis has been carried out. And finally, Multiple Regression Analysis is conducted to examine which among the eight

dimensions in independent variables is the most important in explaining the relationship between dependent and independent variables.

3.5 Data Calculation Methods

a. Multi Co linearity

It means the existence of a “perfect”, or exact, linear relationship among some or all explanatory variables of a regression model.

b. Variance Influencing Factor

VIF shows how the variance of an estimator is inflated by the presence of multi co linearity. The speed with which variances and covariance increase can be seen with the variance inflating factor (VIF).

c. Correlation

Correlation is the statistical analysis that defines the variation in one variable by the variation in another, without establishing a cause-and-effect relationship. The coefecient of correlation is a measure of the strength of the relationship between the variables; that is, how well changes in one variable can be predicted by changes in another variable.

d. Regression

Regression analysis is a statistical tool for the investigation of relationship between variables. Usually, the investigator seeks to ascertain the casual effect of one variable upon another-the effect of a price increase upon demand, for example, or the effect of changes in the money supply upon the inflation rate.

e. Trend Analysis

Trend analysis is an aspect of technical analysis of the data that tries to predict the future movement of a historical data. Trend analysis is based on the idea that what has happened in the past gives us an idea of what will happen in the future.

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF DATA

The statistical tools used for the analysis are simple regression, multiple regression and correlation analysis. The results and discussion of the analysis are as follows:

4.1 Simple Regression Analysis

Simple linear regression analysis analyzes the linear relationship that exists between a dependent variable and a single independent variable. Simple regression model is described as:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \varepsilon_i$$

Where:

Y_i = Value of the dependent variable

β_0 = Population's y-intercept

β_1 = Slope of the population regression line

X_{1i} = Value of the independent variable where $i=1$ to 8

ε_i = Error term or residual where $i=1$ to 8

1. Test of significance between percentage change in workers' remittance and percentage change in GDP annual growth

Alternate Hypothesis (H1): There is a significant relationship between percentage change in workers' remittance and percentage change in GDP annual growth rate.

Table 4. 1: Regression results of workers' remittance on GDP annual growth

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.198 ^a	0.039	54.435	
a. Predictors: (Constant), Percentage Change in GDP Growth Rate				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	42.571	13.615	0.007
	% Change in GDP Growth Rate	-0.014	0.018	0.445
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 42.571 + (-0.014)X_1$$

Where:

Y_i = Percentage change in Workers' Remittance

X_1 = Percentage change in Annual GDP Growth Rate

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in annual GDP growth rate. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 3.9 percent of change in workers' remittance can be explained by percentage change in annual GDP growth rate. With the linear regression model, the error of my estimation is average i.e. 54.435. The above table also shows the coefficient of the regression line. It states that one percent increase in annual GDP growth rate decreases the workers' remittance by 0.014%.

Here the corresponding p-value is 0.445, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in GDP annual growth rate.

2. Test of significance between percentage change in workers' remittance and percentage change in Inflation rate

Alternate Hypothesis (H2): There is a significant relationship between percentage change in workers' remittance and percentage change in Inflation rate.

Table 4. 2: Regression results of workers' remittance on Inflation rate

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.046 ^a	0.002	55.481	
a. Predictors: (Constant), Percentage Change in Inflation Rate				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	40.611	13.936	0.011
	% Change in Inflation Rate	-0.036	0.204	0.861
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 40.611 + (-0.036)X_2$$

Where:

Y_i = Percentage change in Workers' Remittance

X_2 = Percentage change in Inflation Rate

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in inflation rate. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 0.2 percent of change in workers' remittance can be explained by percentage change in inflation rate. With the linear regression model, the error of my estimation is average i.e. 55.481. The above table also shows the coefficient of the regression line. It states that one percent increase in inflation rate decreases the workers' remittance by 0.036%.

Here the corresponding p-value is 0.861, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in inflation rate.

3. Test of significance between percentage change in workers' remittance and percentage change in Exchange rate

Alternate Hypothesis (H3): There is a significant relationship between percentage change in workers' remittance and percentage change in exchange rate.

Table 4. 3: Regression results of workers' remittance on Exchange rate

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.216 ^a	0.047	54.230	
a. Predictors: (Constant), Percentage Change in Exchange Rate				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	34.420	14.661	0.033
	% Change in Exchange Rate	1.755	2.050	0.405
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 34.420 + 1.755X_3$$

Where:

Y_i = Percentage change in Workers' Remittance

X_3 = Percentage change in Exchange Rate

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in Exchange rate. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 4.7 percent of change in workers' remittance can be explained by percentage change in Exchange

rate. With the linear regression model, the error of my estimation is average i.e. 54.230. The above table also shows the coefficient of the regression line. It states that one percent increase in Exchange rate increases the workers' remittance by 1.755%.

Here the corresponding p-value is 0.405, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Exchange rate.

4. Test of significance between percentage change in workers' remittance and percentage change in FDI

Alternate Hypothesis (H4): There is a significant relationship between percentage change in workers' remittance and percentage change in FDI.

Table 4. 4: Regression results of workers' remittance on FDI

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.032 ^a	0.001	55.511	
a. Predictors: (Constant), Percentage Change in FDI				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	40.151	13.545	0.010
	% Change in FDI	0.001	0.010	0.902
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 40.151 + 0.001X_4$$

Where:

Y_i = Percentage change in Workers' Remittance

X_4 = Percentage change in FDI

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in FDI. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 0.1 percent of change in workers' remittance can be explained by percentage change in FDI. With the linear regression model, the error of my estimation is average i.e. 55.511. The above table also shows the coefficient of the regression line. It states that one percent increase in FDI increases the workers' remittance by 0.001%.

Here the corresponding p-value is 0.902, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in FDI.

5. Test of significance between percentage change in workers' remittance and percentage change in Export as % Of GDP

Alternate Hypothesis (H5): There is a significant relationship between percentage change in workers' remittance and percentage change in Export as % of GDP.

Table 4. 5: Regression results of workers' remittance on Export as % of GDP

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.101 ^a	0.010	55.255	
a. Predictors: (Constant), Percentage Change in Exports as % of GDP				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	42.561	14.935	0.012
	% Change in Exports as % of GDP	0.536	1.362	0.699
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 42.561 + 0.536X_5$$

Where:

Y_i = Percentage change in Workers' Remittance

X_5 = Percentage change in Export as % of GDP

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in Export as % of GDP. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 1 percent of change in workers' remittance can be explained by percentage change in Export as % of GDP. With the linear regression model, the error of my estimation is average i.e. 55.255. The above table also shows the coefficient of the regression line. It states that one percent increase in Export as % of GDP increases the workers' remittance by 0.536%.

Here the corresponding p-value is 0.699, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Export as % of GDP.

6. Test of significance between percentage change in workers' remittance and percentage change in Import as % of GDP

Alternate Hypothesis (H6): There is a significant relationship between percentage change in workers' remittance and percentage change in Import as % of GDP.

Table 4. 6: Regression results of workers' remittance on Import as % of GDP

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.015 ^a	0.000	55.534	
a. Predictors: (Constant), Percentage Change in Import as % of GDP				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	39.975	13.470	0.010
	% Change in Import as % of GDP	0.114	1.955	0.954
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 39.975 + 0.114X_6$$

Where:

Y_i = Percentage change in Workers' Remittance

X_6 = Percentage change in Import as % of GDP

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in Import as % of GDP. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that zero percent of change in workers' remittance can be explained by percentage change in Import as % of GDP i.e. there percentage change in Import as % of GDP has not impact on percentage change in workers' remittance. With the linear regression model, the error of my estimation is average i.e. 55.534. The above table also shows the coefficient of the regression line. It states that one percent increase in Import as % of GDP increases the workers' remittance by 0.114%.

Here the corresponding p-value is 0.954, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Import as % of GDP.

7. Test of significance between percentage change in workers' remittance and percentage change in Fixed Capital % of GDP

Alternate Hypothesis (H7): There is a significant relationship between percentage change in workers' remittance and percentage change in Fixed Capital % of GDP.

Table 4. 7: Regression results of workers' remittance on Fixed Capital % of GDP

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.056 ^a	0.003	55.452	
a. Predictors: (Constant), Percentage Change in Fixed Capital as % of GDP				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	39.558	13.579	0.011
	% Change in Fixed Capital as % of GDP	-0.685	3.151	0.831
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 39.558 + (-0.685)X_7$$

Where:

Y_i = Percentage change in Workers' Remittance

X_7 = Percentage change in Fixed Capital % of GDP

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in Fixed Capital % of GDP. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 3 percent of change in workers' remittance can be explained by percentage change in Fixed Capital % of GDP. With the linear regression model, the error of my estimation is average i.e. 55.452. The above table also shows the coefficient of the regression line. It states that one percent increase in Fixed Capital % of GDP decreases the workers' remittance by 0.685%.

Here the corresponding p-value is 0.831, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Fixed Capital % of GDP.

8. Test of significance between percentage change in workers' remittance and percentage change in Interest Rate Spread

Alternate Hypothesis (H8): There is a significant relationship between percentage change in workers' remittance and percentage change in Interest Rate Spread.

Table 4. 8: Regression results of workers' remittance on Interest Rate Spread

Model Summary(b)				
Model	R	R Square	Std. Error of the Estimate	
1	0.361 ^a	0.130	51.794	
a. Predictors: (Constant), Percentage Change in Interest Rate Spread				
b. Dependent Variable: Percentage Change in Workers' Remittance				
Coefficients (a)				
Model		Unstandardized Coefficients		Sig.
		B	Std. Error	
1	(Constant)	45.843	13.159	0.003
	% Change in Interest Rate Spread	-0.901	0.601	0.155
a. Dependent Variable: Percentage Change in Workers' Remittance				

Now the regression equation can be written as:

$$Y_i = 45.843 + (-0.901)X_8$$

Where:

Y_i = Percentage change in Workers' Remittance

X_8 = Percentage change in Interest Rate Spread

The model summary table reports the strength of the relationship between percentage change in workers' remittance and percentage change in Interest Rate Spread. R Square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that 13 percent of change in workers' remittance can be explained by percentage change in Interest Rate Spread. With the linear regression model, the error of my estimation is average i.e. 51.794. The above table also shows the coefficient of the regression line. It states that one percent increase in Interest Rate Spread decreases the workers' remittance by 0.901%.

Here the corresponding p-value is 0.155, which is more than 0.05, thus we accept the null hypothesis concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Interest Rate Spread.

4.2 Multiple Regressions Analysis

Multiple regression analysis is a flexible method of data analysis that may be appropriate whenever a quantitative variable (the dependent or criterion variable) is to be examined in relationship to any other factors (expressed as independent or predictor variables). Relationships may be nonlinear, independent variables may be quantitative or qualitative, and one can examine the effects of a single variable or multiple variables with or without the effects of other variables taken into account. Multiple regression models can be described as:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i + \varepsilon_i$$

Where:

Y_i = Value of the dependent variable

β_0 = Population's y-intercept

β_i = Regression coefficient of X where $i= 1$ to 8 .

X_i = Value of the independent variable where $i=1$ to 8

ε_i = Error term or residual where $i=1$ to 8

To test the significance of overall goodness of fit:

Alternate Hypothesis (H9): At least one $\beta_1 \neq 0$

There is a significant relationship between percentage change in workers' remittance (dependence variable) and one independent variable and there is significant difference between sensitivity of dependent variable with each independent variable.

Table 4. 9: Multiple Regression Results

Model Summary(b)						
Model	R	R Square	Std. Error of the Estimate			
1	.493 ^a	.243	66.1575			
a. Predictors: (Constant), Percentage Change in Interest Rate Spread, Percentage Change in Inflation Rate, Percentage Change in Fixed Capital as Percentage of GDP, Percentage Change in FDI, Percentage Change in Exchange Rate, Percentage Change in GDP Growth Rate, Percentage Change in Import as Percentage GDP, Percentage Change in Exports as Percentage GDP						
b. Dependent Variable: Percentage Change in Workers' Remittance						
ANOVA(a)						
Model	Source	Sum of Squares	Degree of freedom	Mean Square	F	Sig.
1	Regression	11,255.583	8	1,406.948	0.321	0.935 ^b
	Residual	35,014.516	8	4,376.814		
	Total	46,270.099	16			
a. Dependent Variable: Percentage Change in Workers' Remittance						
b. Predictors: (Constant), Percentage Change in Interest Rate Spread, Percentage Change in Inflation Rate, Percentage Change in Fixed Capital as Percentage of GDP, Percentage Change in FDI, Percentage Change in Exchange Rate, Percentage Change in GDP Growth Rate, Percentage Change in Import as Percentage GDP, Percentage Change in Exports as Percentage GDP						
Coefficients(a)						
Model		Unstandardized Coefficients		Standardized Coefficients	Sig.	Co-linearity Statistic VIF
		B	Std. Error	Beta		
1	(Constant)	62.253	30.620		0.076	
	Percentage Change in GDP Growth Rate	0.007	0.027	0.098	0.804	1.537
	Percentage Change in Inflation Rate	-0.011	0.348	-0.014	0.976	2.038
	Percentage Change in Exchange Rate	0.838	3.075	0.103	0.792	1.511
	Percentage Change in FDI	0.001	0.013	0.038	0.914	1.246
	Percentage Change in Exports as Percentage GDP	2.904	3.491	0.548	0.430	4.584

Percentage Change in Fixed Capital as Percentage of GDP	4.373	6.818	0.358	0.539	3.290
Percentage Change in Import as Percentage GDP	-2.874	4.317	-0.380	0.524	3.437
Percentage Change in Interest Rate Spread	-1.444	1.091	-0.579	0.222	2.021
a. Dependent Variable: % Change in Workers' Remittance					

The multiple regression equation can be written as:

$$Y_i = 62.253 + 0.007X_1 + (-0.011)X_2 + 0.838X_3 + 0.001X_4 + 2.904X_5 + 4.373X_6 + (-2.874)X_7 + (-1.444)X_8$$

Where:

Y_i = Percentage Change in Workers' Remittance

X_1 = Percentage Change in GDP Growth Rate

X_2 = Percentage Change in Inflation Rate

X_3 = Percentage Change in Exchange Rate

X_4 = Percentage Change FDI

X_5 = Percentage Change in Exports as % of GDP

X_6 = Percentage Change in Fixed Capital as % of GDP

X_7 = Percentage Change in Imports as % of GDP

X_8 = Percentage Change in Interest Rate Spread

The model summary table reports the strength of the relationship between percentage change in various macroeconomic variables and percentage change in workers' remittance. R square, the coefficient of determination, is the squared value of the multiple correlation coefficients. It shows that about 24.3 percent of percentage change in workers' remittance can be explained by percentage change in various macroeconomics variables. With the linear regression model, the error of estimate is 66.1575.

From ANOVA table we get the p-value 0.935, which is more than 0.05 thus we do not reject null hypothesis (H₀) and hence conclude that there is an insignificant relationship between the workers' remittance (dependent variable) and all the independent variables.

The above table also shows the coefficient of the regression line between percentage change in annual GDP growth rate and percentage change in workers' remittance. It states that one percent increase in annual GDP growth rate increases the workers' remittance by 0.007%. Here the corresponding p-value is 0.804, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in annual GDP growth rate and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in annual inflation rate and percentage change in workers' remittance. It states that one percent increase in inflation rate decreases the workers' remittance by 0.011%. Here the corresponding p-value is 0.976, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in inflation rate and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in exchange rate and percentage change in workers' remittance. It states that one percent increase in exchange rate increases the workers' remittance by 0.838%. Here the corresponding p-value is 0.792, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in exchange rate and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in FDI and percentage change in workers' remittance. It states that one percent increase in FDI increases the workers' remittance by 0.001%. Here the corresponding p-value is 0.914, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in FDI and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in export as % of GDP and percentage change in workers' remittance. It states that one percent increase in export as % of GDP increases the workers' remittance by 2.904%. Here the

corresponding p-value is 0.430, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in export as % of GDP and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in fixed capital as % of GDP and percentage change in workers' remittance. It states that one percent increase in fixed capital as % of GDP increases the workers' remittance by 4.373%. Here the corresponding p-value is 0.539, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in fixed capital as % of GDP and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in import as % of GDP and percentage change in workers' remittance. It states that one percent increase in import as % of GDP decreases the workers' remittance by 2.874%. Here the corresponding p-value is 0.524, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in import as % of GDP and percentage change in workers' remittance.

The above table also shows the coefficient of the regression line between percentage change in interest rate spread and percentage change in workers' remittance. It states that one percent increase in interest rate spread decreases the workers' remittance by 1.444%. Here the corresponding p-value is 0.222, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in interest rate spread and percentage change in workers' remittance.

From the above table we can get the corresponding Variance Influencing Factor (VIF) of each variable. VIF shows how the variance of an estimator is inflated by the presence of multicollinearity. The speed with which variances and covariance increases can be seen with the variance inflating factor (VIF). The larger the value of VIF, the more 'troublesome' or collinear the variable X. **As a rule of thumb, the VIF of a dependent variable exceeds 5, that variable is said to be highly collinear.** In the above table there is no VIF which is equal to or greater than 5 hence we can say there is no co-linearity between dependent variable and any of the independent variables.

4.3 Correlation Analysis

The correlation table represents the correlation among the dependent variable and various independent variables. The various result of this analysis can be explained as follows:

Table 4. 10: Correlation Results

Indicators		% Change in Annual GDP Growth Rate	% Change in Inflation Rate	% Change in Exchange Rate	% Change in FDI	% Change in Exports as % GDP	% Change in Fixed Capital as % of GDP	% Change in Import as % GDP	% Change in Interest Rate Spread	% Change in Workers' Remittance
% Change in Annual GDP Growth Rate	Pearson Correlation	1	.255	-.208	.018	-.145	.137	.036	.394	-.198
	Sig. (2-tailed)		.323	.422	.946	.579	.599	.891	.117	.445
	N		17	17	17	17	17	17	17	17
% Change in Inflation Rate	Pearson Correlation	1	1	.213	.380	-.476	.182	-.276	.005	-.046
	Sig. (2-tailed)			.412	.133	.053	.484	.283	.985	.861
	N			17	17	17	17	17	17	17
% Change in Exchange Rate	Pearson Correlation	1	1	1	.069	.229	-.318	-.166	-.102	.216
	Sig. (2-tailed)				.792	.377	.214	.523	.698	.405
	N				17	17	17	17	17	17
% Change in FDI	Pearson Correlation	1	1	1	1	-.054	.057	-.114	.075	.032
	Sig. (2-tailed)					.836	.826	.664	.775	.902
	N					17	17	17	17	17
% Change in Exports as % GDP	Pearson Correlation	1	1	1	1	1	-.446	.347	.292	.101
	Sig. (2-tailed)						.073	.172	.256	.699
	N						17	17	17	17
% Change in Fixed Capital as % of GDP	Pearson Correlation	1	1	1	1	1	1	.445	-.033	-.056
	Sig. (2-tailed)							.073	.899	.831
	N							17	17	17
% Change in Import as % GDP	Pearson Correlation	1	1	1	1	1	1	1	-.102	.015
	Sig. (2-tailed)								.696	.954
	N								17	17
% Change in Interest Rate Spread	Pearson Correlation	1	1	1	1	1	1	1	1	-.361
	Sig. (2-tailed)									.155
	N									17
% Change in Workers' Remittance	Pearson Correlation	1	1	1	1	1	1	1	1	1
	Sig. (2-tailed)									
	N									

4.3.1 Relationship with percentage change in Workers' Remittance

There is a negative relationship between percentage changes in workers' remittance and percentage change in GDP growth rate. The corresponding p-value is 0.445, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in GDP growth rate.

There is a negative relationship between percentage changes in workers' remittance and percentage change in inflation rate. The corresponding p-value is 0.861, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in Inflation rate.

There is a positive relationship between percentage changes in workers' remittance and percentage change in Exchange rate. The corresponding p-value is 0.405, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in exchange rate.

There is a positive relationship between percentage changes in workers' remittance and percentage change in FDI. The corresponding p-value is 0.902, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in FDI.

There is a positive relationship between percentage changes in workers' remittance and percentage change in export as % of GDP. The corresponding p-value is 0.699, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in export as % of GDP.

There is a negative relationship between percentage changes in workers' remittance and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.831, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in fixed capital as % of GDP.

There is a positive relationship between percentage changes in workers' remittance and percentage change in import as % of GDP. The corresponding p-value is 0.954, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in workers' remittance and percentage change in import as % of GDP.

There is a negative relationship between percentage changes in workers' remittance and percentage change in interest rate spread. The corresponding p-value is 0.155, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in import % of GDP and percentage change in interest rate spread.

4.3.2 Relationship with percentage change in Interest Rate Spread

There is a positive relationship between percentage changes in GDP growth rate and percentage change in interest rate spread. The corresponding p-value is 0.117, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in interest rate spread.

There is a positive relationship between percentage changes in Inflation rate and percentage change in interest rate spread. The corresponding p-value is 0.985, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in interest rate spread.

There is a negative relationship between percentage changes in Exchange rate and percentage change in interest rate spread. The corresponding p-value is 0.698, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Exchange rate and percentage change in interest rate spread.

There is a positive relationship between percentage changes in FDI and percentage change in interest rate spread. The corresponding p-value is 0.775, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in FDI and percentage change in interest rate spread.

There is a positive relationship between percentage changes in export as % of GDP and percentage change in interest rate spread. The corresponding p-value is 0.256, which is more

than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in export as % of GDP and percentage change in interest rate spread.

There is a negative relationship between percentage changes in fixed capital as % of GDP and percentage change in interest rate spread. The corresponding p-value is 0.899, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in fixed capital as % of GDP and percentage change in interest rate spread.

There is a negative relationship between percentage changes in import as % of GDP and percentage change in interest rate spread. The corresponding p-value is 0.696, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in import % of GDP and percentage change in interest rate spread.

4.3.3 Relationship with percentage change in Import as % of GDP

There is a positive relationship between percentage changes in GDP growth rate and percentage change in import as % of GDP. The corresponding p-value is 0.891, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in import as % of GDP.

There is a negative relationship between percentage changes in Inflation rate and percentage change in import as % of GDP. The corresponding p-value is 0.283, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in import as % of GDP.

There is a negative relationship between percentage changes in Exchange rate and percentage change in import as % of GDP. The corresponding p-value is 0.523, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Exchange rate and percentage change in import as % of GDP.

There is a negative relationship between percentage changes in FDI and percentage change in import as % of GDP. The corresponding p-value is 0.664, which is more than 0.05, thus we

accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in FDI and percentage change in import as % of GDP.

There is a positive relationship between percentage changes in export as % of GDP and percentage change in import as % of GDP. The corresponding p-value is 0.172, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in export as % of GDP and percentage change in import as % of GDP.

There is a positive relationship between percentage changes in fixed capital as % of GDP and percentage change in import as % of GDP. The corresponding p-value is 0.073, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in fixed capital % as of GDP and percentage change in import as % of GDP.

4.3.4 Relationship with percentage change in Fixed Capital as % of GDP

There is a positive relationship between percentage changes in GDP growth rate and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.599, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in fixed capital as % of GDP.

There is a positive relationship between percentage changes in Inflation rate and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.484, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in fixed capital as % of GDP.

There is a negative relationship between percentage changes in Exchange rate and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.214, which is more than 0.05, thus we accept the null hypothesis (H₀) concluding that there is an insignificant relationship between percentage change in Exchange rate and percentage change in fixed capital as % of GDP.

There is a positive relationship between percentage changes in FDI and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.826, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in FDI and percentage change in fixed capital as % of GDP.

There is a negative relationship between percentage changes in export as % of GDP and percentage change in fixed capital as % of GDP. The corresponding p-value is 0.073, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in export as % of GDP and percentage change in fixed capital as % of GDP.

4.3.5 Relationship with percentage change in Export as % of GDP

There is a negative relationship between percentage changes in GDP growth rate and percentage change in export as % of GDP. The corresponding p-value is 0.579, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in export as % of GDP.

There is a negative relationship between percentage changes in Inflation rate and percentage change in export as % of GDP. The corresponding p-value is 0.053, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in export as % of GDP.

There is a positive relationship between percentage changes in Exchange rate and percentage change in export as % of GDP. The corresponding p-value is 0.377, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Exchange rate and percentage change in export as % of GDP.

There is a negative relationship between percentage changes in FDI and percentage change in export as % of GDP. The corresponding p-value is 0.836, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in FDI and percentage change in export as % of GDP.

4.3.6 Relationship with percentage change in FDI

There is a positive relationship between percentage changes in GDP growth rate and percentage change in FDI. The corresponding p-value is 0.946, which is more than 0.05, thus we accept the

null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in GDP.

There is a positive relationship between percentage changes in Inflation rate and percentage change in FDI. The corresponding p-value is 0.133, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in GDP.

There is a positive relationship between percentage changes in Exchange rate and percentage change in FDI. The corresponding p-value is 0.792, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage changes in Exchange rate and percentage change in GDP.

4.3.7 Relationship with percentage change in Exchange Rate

There is a negative relationship between percentage changes in GDP growth rate and percentage change in exchange rate. The corresponding p-value is 0.422, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in exchange rate.

There is a positive relationship between percentage changes in Inflation rate and percentage change in exchange rate. The corresponding p-value is 0.412, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in Inflation rate and percentage change in exchange rate.

4.3.8 Relationship with percentage change in Inflation Rate

There is a positive relationship between percentage changes in GDP growth rate and percentage change in inflation rate. The corresponding p-value is 0.323, which is more than 0.05, thus we accept the null hypothesis (H0) concluding that there is an insignificant relationship between percentage change in GDP growth rate and percentage change in inflation rate.

4.4 Trend Analysis

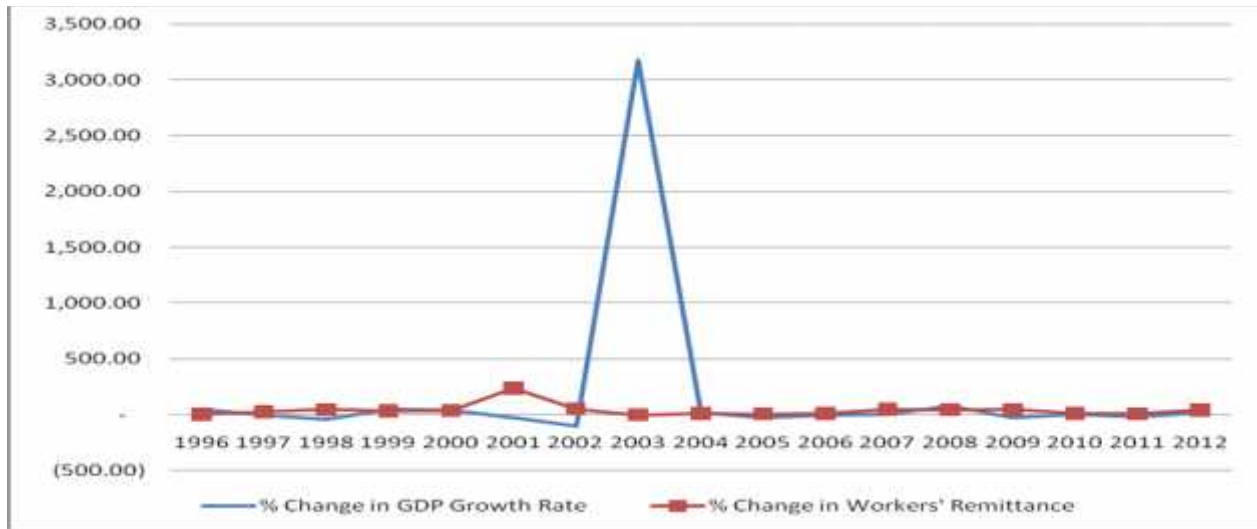


Figure 4. 1: Percentage change in GDP Growth rate and percentage change in workers' remittance

GDP experienced huge positive variance in 2003 i.e. 3180.24. Whereas, workers' remittance has maximum positive variance on 2001 i.e. 236.64%. From 2002 to 2003 percentage change in workers' remittance was at lowest point i.e. 0.68%. While GDP has experienced various up and down during the period of 1995 to 2012.

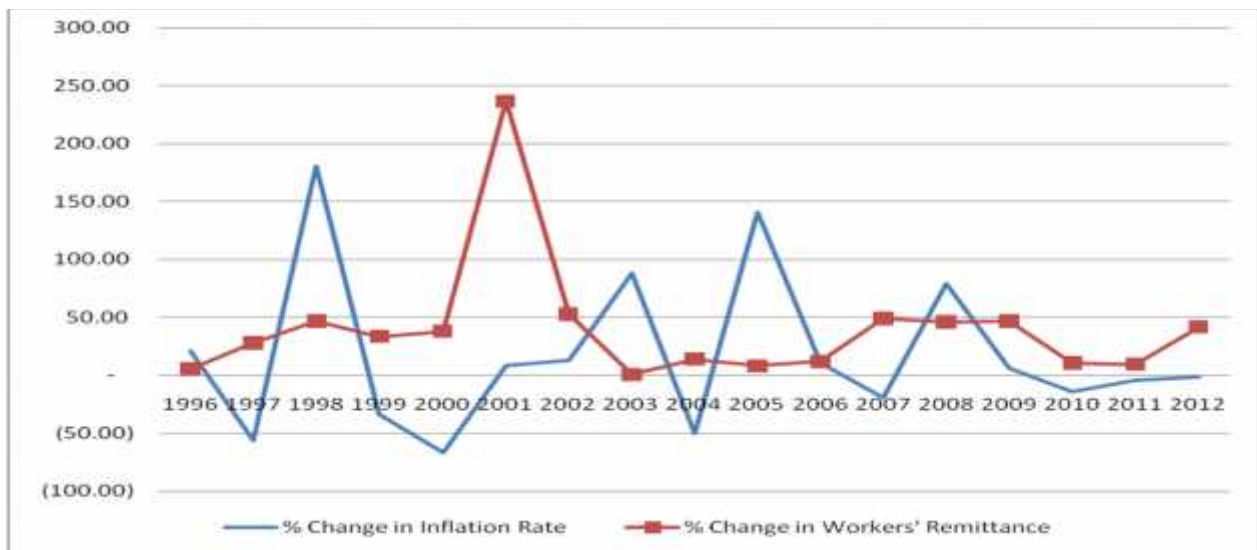


Figure 4. 2: Percentage change in Inflation rate and percentage change in workers' remittance

Percentage increase in workers' remittance has always dominated percentage change in inflation rate during the period of 1995 to 2012 AD. If we analyze the trend both variables behave followed almost same patterns. 2001 AD was the year where percentage change in workers'

remittance has experienced highest positive increment i.e. 236.64%. Whereas, 1998 AD was the year where percentage change in inflation rate has experienced highest positive growth i.e. 180.41%.

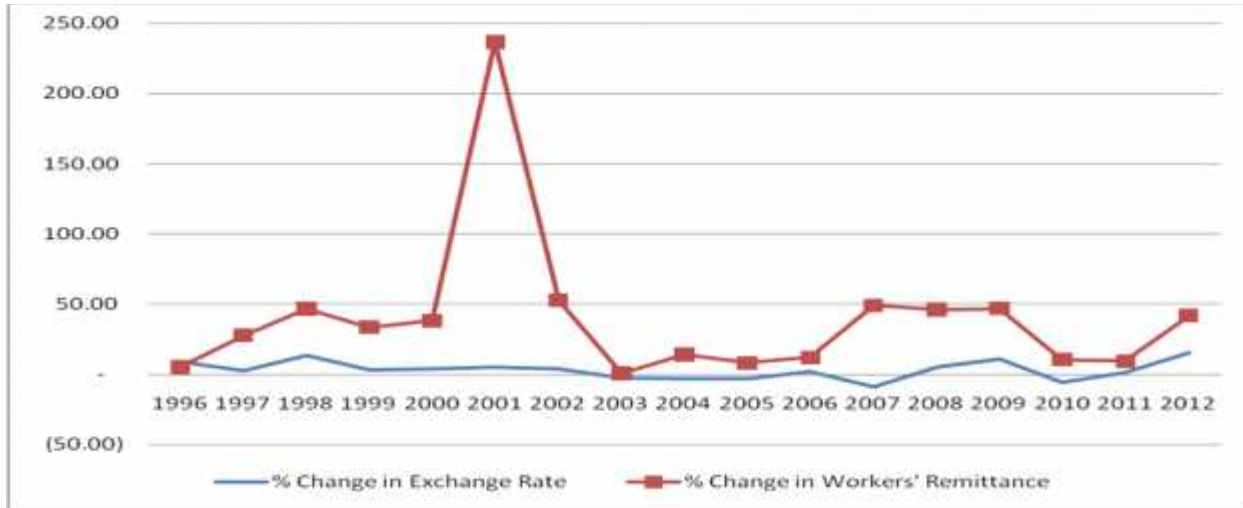


Figure 4. 3: Percentage change in Exchange rate and percentage change in workers' remittance

Percentage increase in workers' remittance has always dominated percentage change in exchange rate during the period of 1995 to 2012 AD. If we analyze the trend both variables behave have followed same patterns except 2007 AD.

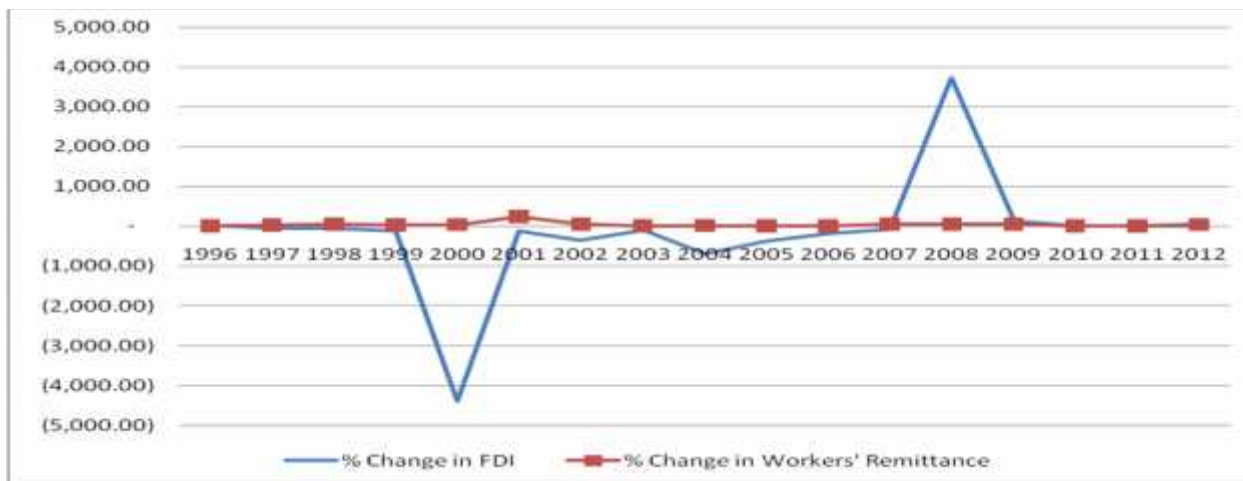


Figure 4. 4: Percentage change in FDI and percentage change in workers' remittance

If we analyze the above figure we can say that there was two year where percentage change in FDI was very huge; in 2000AD it was negative variance of 4400.50% and in 2008AD it was

positive growth of 3736.32%. Whereas, workers' remittance has followed same stream line of percentage change during 1995 to 2012AD as compare to percentage change in FDI.

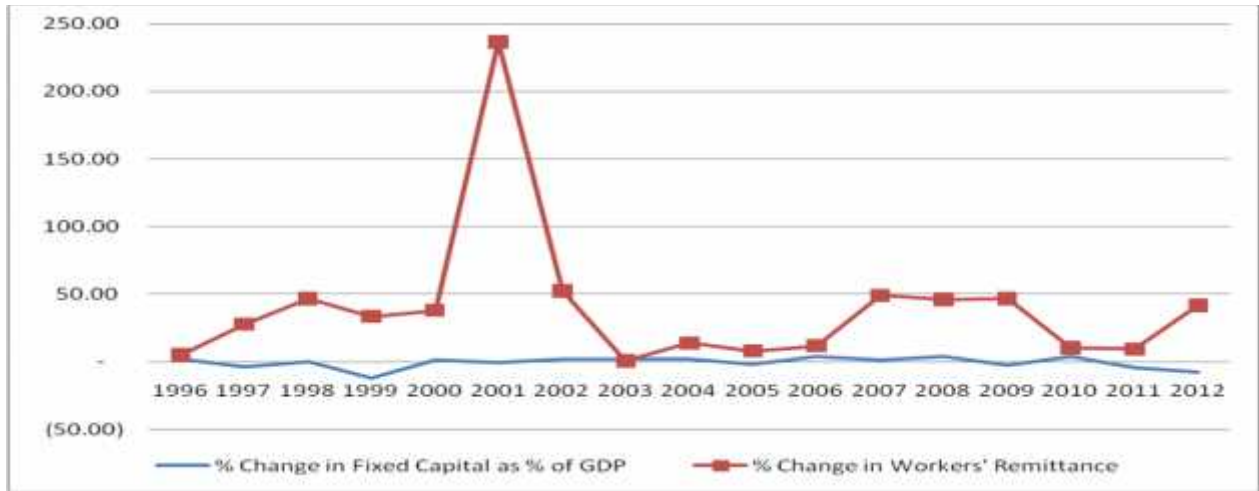


Figure 4. 5: Percentage change in Fixed Capital as % of GDP and percentage change in workers' remittance

Percentage increase in workers' remittance has always dominated percentage change in Fixed Capita as % of GPD during the period of 1995 to 2012 AD. 2001 AD was the year where percentage change in workers' remittance has experienced highest positive growth i.e. 236.64%. Whereas, percentage change in Fixed Capital as % of GDP has low fluctuation as compare to the workers' remittance, biggest fluctuation was on 1999AD (negative growth of 12.19%) and smallest growth was on 1998AD (positive growth of 0. 72%).

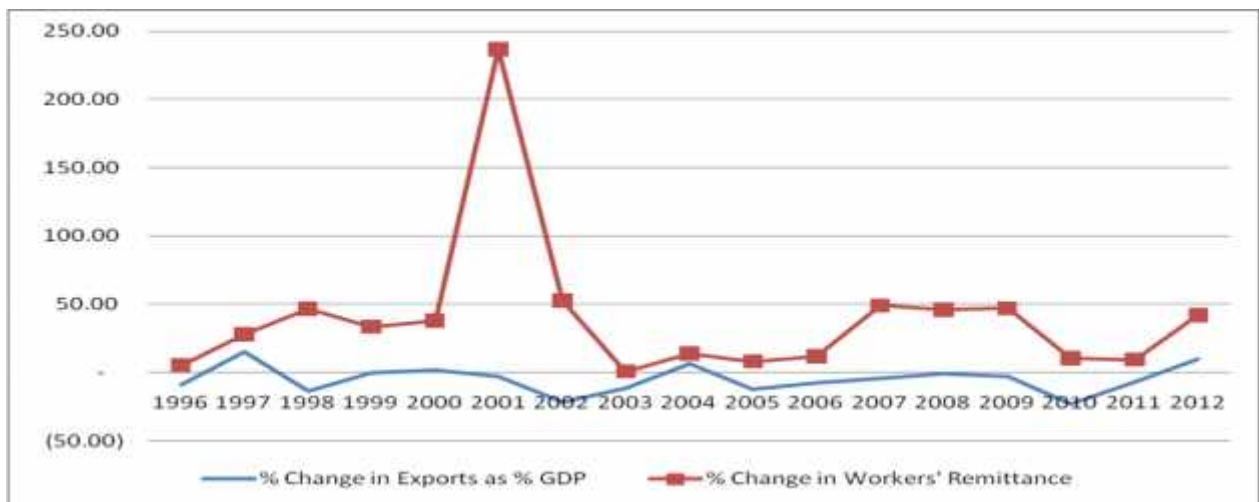


Figure 4. 6: Percentage change in Export as % of GDP and percentage change in workers' remittance

Percentage increase in workers' remittance has always dominated percentage change in exchange rate during the period of 1995 to 2012 AD. If we analyze the trend both variables have followed almost same patterns. From above figure 4.6 we can say that percentage change in workers' remittance has highest marginal positive growth than percentage change in export as % of GDP almost in all year during the period of 1995 to 2012 AD.

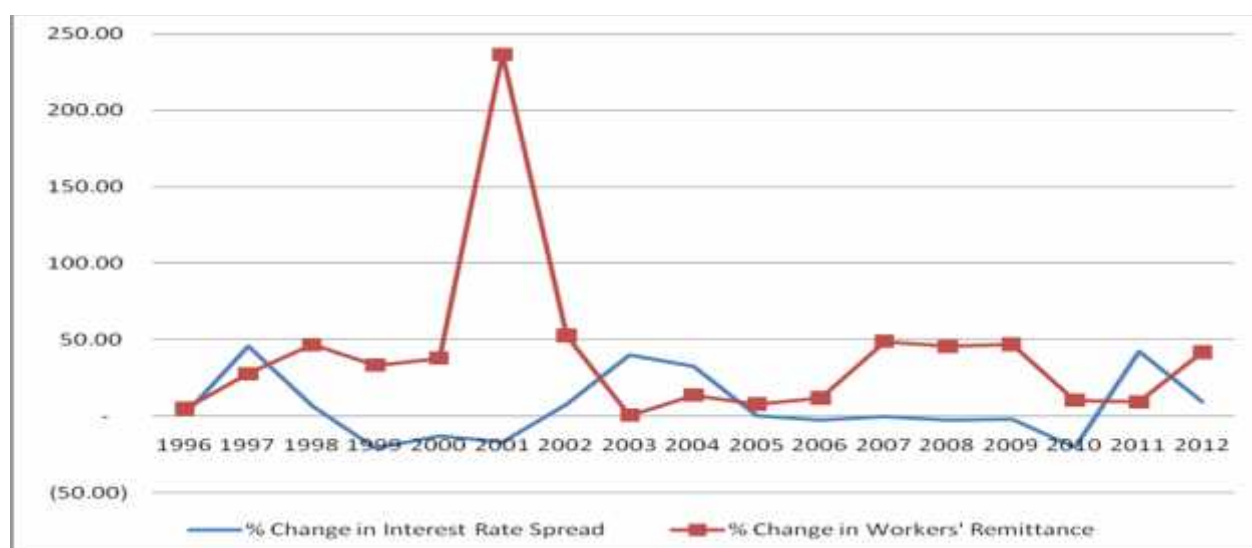


Figure 4. 7: Percentage change in Import as % of GDP and percentage change in workers' remittance

Percentage increase in workers' remittance has always dominated percentage change in exchange rate during the period of 1995 to 2012 AD. If we analyze the above trend variables have followed mixed patterns. In 2001 AD workers' remittance has experienced highest percentage change i.e. positive growth of 236.64% and in 2003AD it has experienced lowest percentage change i.e. positive growth of 0.68%. Whereas percentage change in import as % of GDP has followed lower marginal change; in 2005AD it experienced lowest percentage change i.e. positive growth of 0.05% and in 2002AD it experienced highest percentage change i.e. negative growth of 14.39%.

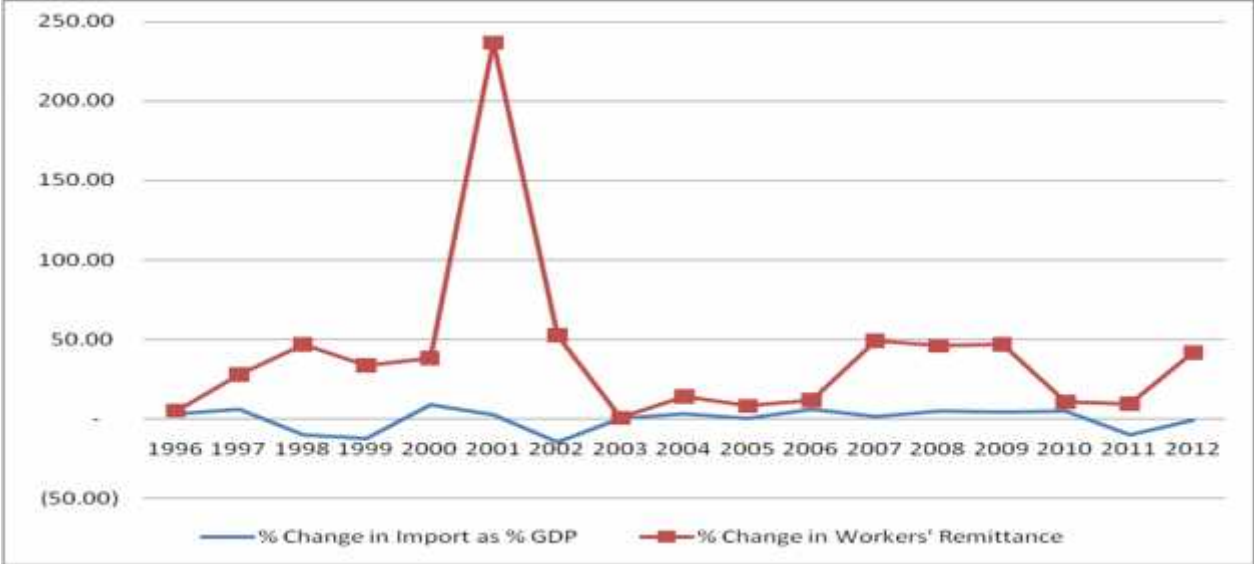


Figure 4. 8: Percentage change in Interest Spread rate and percentage change in workers’ remittance

Unlike other seven figures, figure 4.8 has mixed result. Percentage increase in workers’ remittance and percentage change in interest rate spread has overlapped each other time and again during the period of 1995 to 2012 AD. Like other, in 2001 AD workers’ remittance has experienced highest percentage change i.e. positive growth of 236.64% and in 2003AD it has experienced lowest percentage change i.e. positive growth of 0.68%. Whereas, in 2011 AD percentage change in interest spread rate has experienced highest change i.e. positive growth of 42.40 and in 2007AD it has experienced neither positive growth nor negative growth.

4.5 Analysis of Primary Data

Data observed and collected directly from the first hand experience of the researcher is known as Primary data. The output derived from the study of primary data provided the insight on the real world experience of the people and institution (bank) having engaged in workers’ remittance. This also helped us to identify the habit of individuals and bank on workers remittance.

Table 4. 11: Analysis of Primary data collections

Responded Type	No. of Sample	% of Sample
Individual	80	80
Bank Personnel	20	20
Total Sample Data	100	100

As shown in table 4.11 primary data have been collected from 20 selected commercial bank personnel and 80 walking respondents who have their home member/s residing abroad and sending remittance to them.

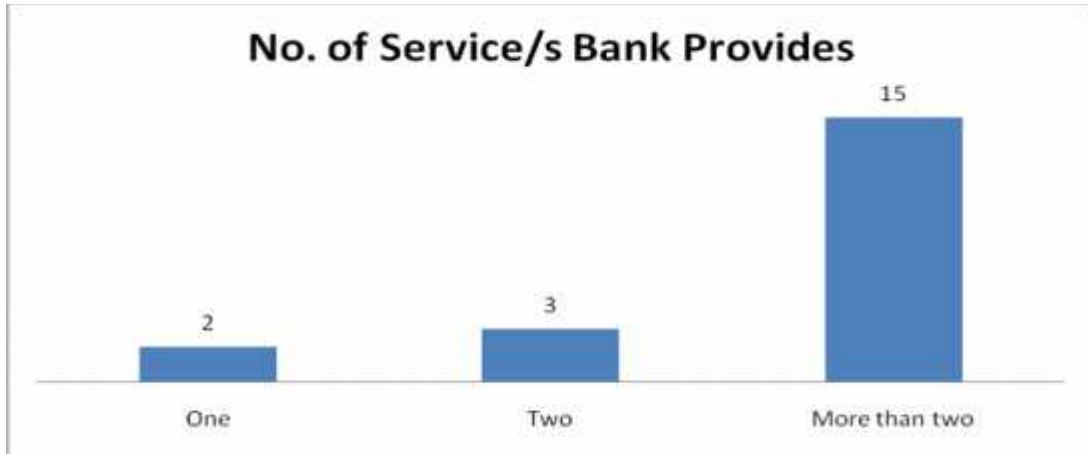


Figure 4. 9: Number of Service/s bank provides to the people residing abroad

Figure 4.9 shows the number of services that bank provides to target people residing abroad. Out of 20 banks, 2 banks have one service (Remittance transfer agreement only), whereas 3 banks have provided two services (Remittance transfer agreement and saving deposits) and rest of the bank i.e. 15 banks have provided more than two services (Remittance transfer agreement, account opening, saving deposits, facilitating Initial Public Offering, Life and Property Insurance).

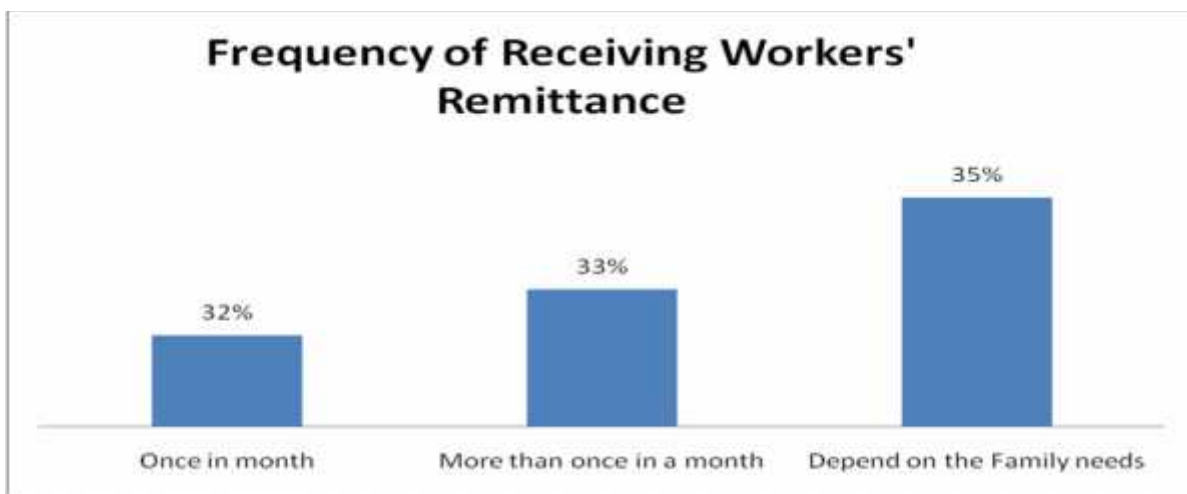


Figure 4. 10: Frequencies of receiving workers' remittance

Figure 4.10 depicts the frequency of receiving workers' remittance from abroad. 32% of responded received remittance once in a month, 33% respondents received remittance more than once in a month and rest of 35% respondents received remittance as per family needs.

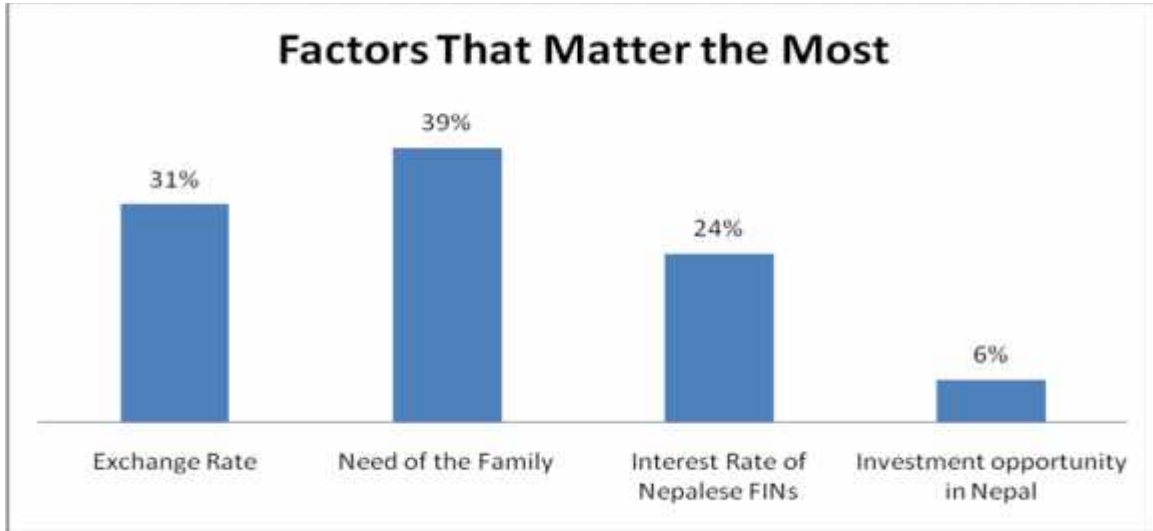


Figure 4. 11: Factor that matter the most for workers' remittance

Figure 4.11 shows the factor that matter the most for workers' remittance to be inbounded. 31% respondents have put emphasis on exchanges rate, while 39% respondents have prioritized family need, like wise 24% respondents said interest rate of Nepalese FINs as motivating factors for workers' remittance and 6% respondents said investment opportunities in Nepal has been factor for inward worker's remittance.

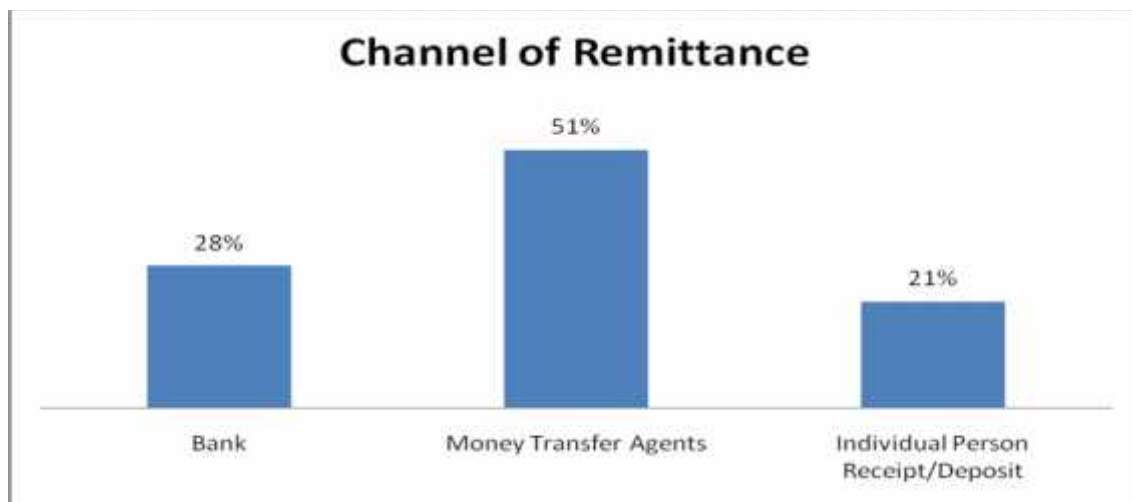


Figure 4. 12: Remittance Channel Used

As shown in figure 4.12, out of 100 respondent (both bank and walking), 28% respondents used bank for receiving workers' remittance, 51% respondent used money transfer agents and 21% respondents used individual person to receive workers' remittance sent by their family member residing abroad.

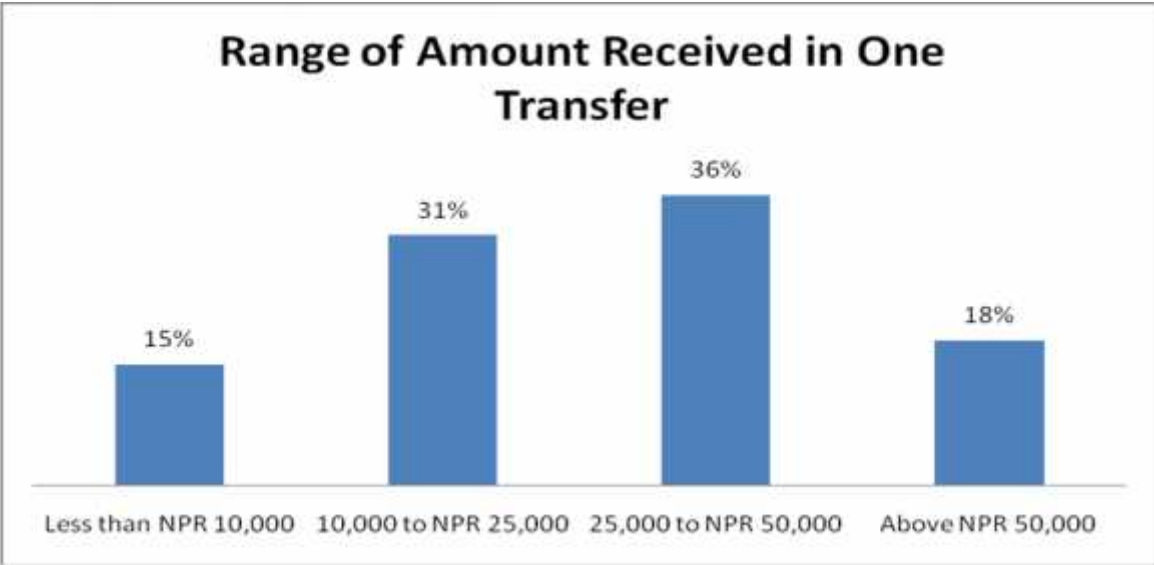


Figure 4. 13: Range of amount received in one transfer

As shown in figure 4.13, out of 100 respondent (both bank and walking), 15% respondents received amount less than NPR 10,000 in one transfer, 31% respondents received amount range NPR 10,000 to 25,000 in one transfer, likewise 36% respondents received amount range of NPR 25,000 to 50,000 in one transfer and 18% respondents received amount above NPR 50,000 in one transfer.

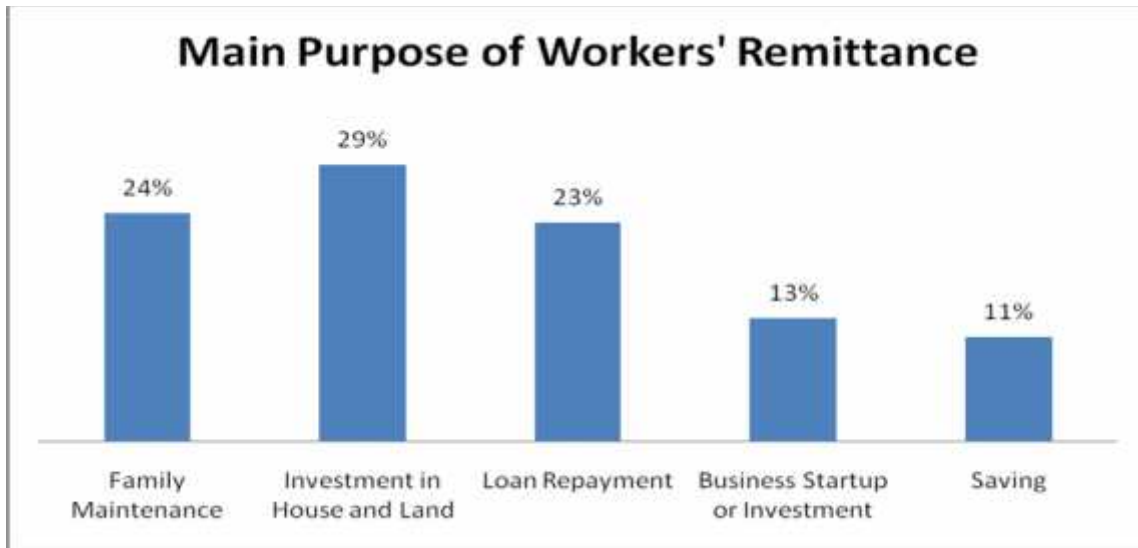


Figure 4. 14: Range of amount received in one transfer

As shown in figure 4.14, out of 100 respondents (both bank and walking), 24% respondents received workers' remittance for family needs and expenses, 29% respondents received workers' remittance for investment in house and land, likewise 23% respondents received workers' remittance for loan repayment, 13% respondents received workers' remittance for business startup or investment and 11% respondents received workers' remittance for saving.

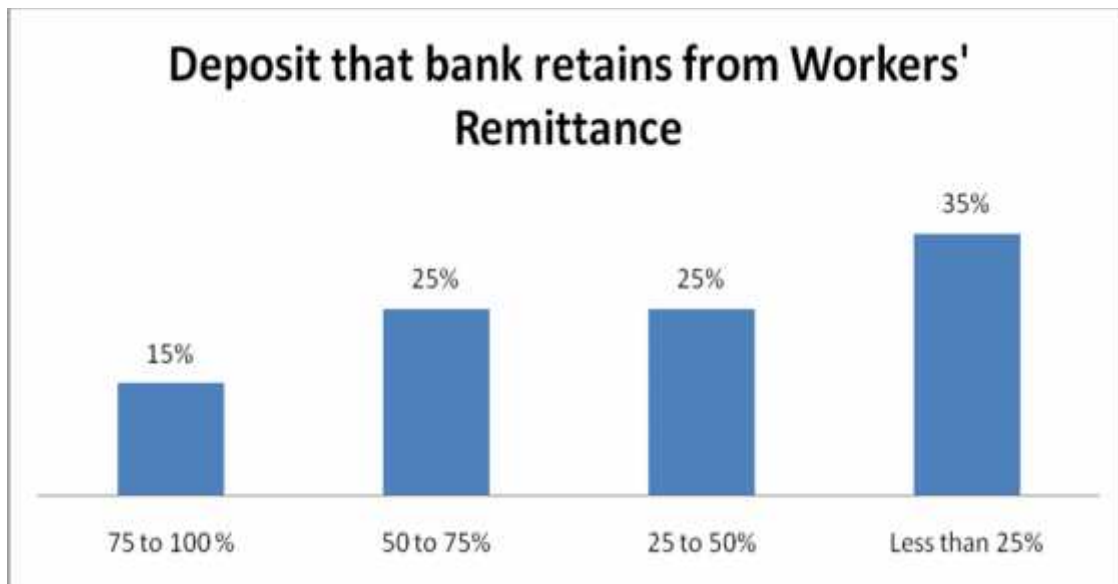


Figure 4. 15: Deposit that bank retains from workers' remittance

Figure 4.15 analyzed the percentage of amount that bank is been able to retain from the workers' remittance. 15% of banks are able to retain more 75% of workers' remittance, 25% banks are

able to retain 50 to 75% of workers' remittance, likewise 25% banks are able to retain 25 to 50% of workers' remittance and 35% of banks are able to retain less than 25% workers' remittance.

Table 4. 12: Analysis of number of family member residing abroad and frequency of workers' remittance

Number of Family Member/s	Frequency of Remittance		
	Once in month	More than once in a month	Depend on the Family needs
One	26%	3%	19%
Two	8%	18%	14%
More than two	1%	11%	1%

Table 12 analyzed the frequency of workers' remittance as per the number of family member residing abroad. If we analyze the relationship between frequency of workers' remittance and number of family member/s residing abroad, 26% respondents with one home member residing abroad have received remittance once in a month, 19% respondents with one home member residing abroad have been receiving remittance on family need basis. On other side, 18% respondents with two home members residing abroad have received remittance more than once in a month, and 14% respondents have been receiving remittance on family need basis. Likewise, 11% respondents residing more than two family members abroad have been receiving remittance more than once in a month.

Table 4. 13: Analysis of number of family member residing abroad and amount range received in one transfer as workers' remittance

Number of Family Member/s	Amount Range Received in One Transfer (Amount in NPR)			
	Less than 10,000	10,000 to 25,000	25,000 to 50,000	Above 50,000
One	4%	16%	19%	9%
Two	8%	10%	14%	8%
More than two	3%	6%	3%	3%

19% & 16% of respondents with one family member residing abroad have received workers' remittance of NPR 25,000 to 50,000 and NPR 10,000 to 25,000 in one transfer respectively.

Likewise, 14% & 10% of respondents with two family members residing abroad have received amount range of NPR 25,000 to 50,000 and NPR 10,000 to 25,000 in one transfer respectively. And 6% of respondents with more than two family members residing abroad have received amount range of NPR 10,000 to 25,000 in one remittance transfer.

Table 4. 14: Analysis of number of remittance channels and reason for choosing it

Channel of Remittance	Reason for choosing Channel			
	Reliable and the funds can be deposited in the account	Fast, Hassle free and do not require more paper works like in Banks	Reliable as the fund is normally collected from individual bringing the funds	Have been receiving the funds from the same process since the beginning
Bank	16%	0%	1%	13%
Money Transfer Agents	1%	50%	0%	0%
Individual Person Transfer/Deposit	8%	1%	8%	3%

50% of respondents have chose money transfer agents as their remittance channel because they think it is fast, hassle free and do not require more paper works like in the bank. Likewise 30% of respondents have chose bank as their remittance channel out of which 11% of respondents said they have been receiving the funds from same process since the beginning and 16% of respondents said it is reliable and the funds can be deposited into the bank directly. Lastly, 19% respondents have chose individual person transfer/deposit as their remittance channel, out of which 8% respondent said it is reliable and fund can be deposited directly into bank account with same percentage of respondent chose individual person transfer/deposit as it is reliable to collect fund from individual who brought it and rest of 3% of respondents have been receiving the funds from same process since the beginning.

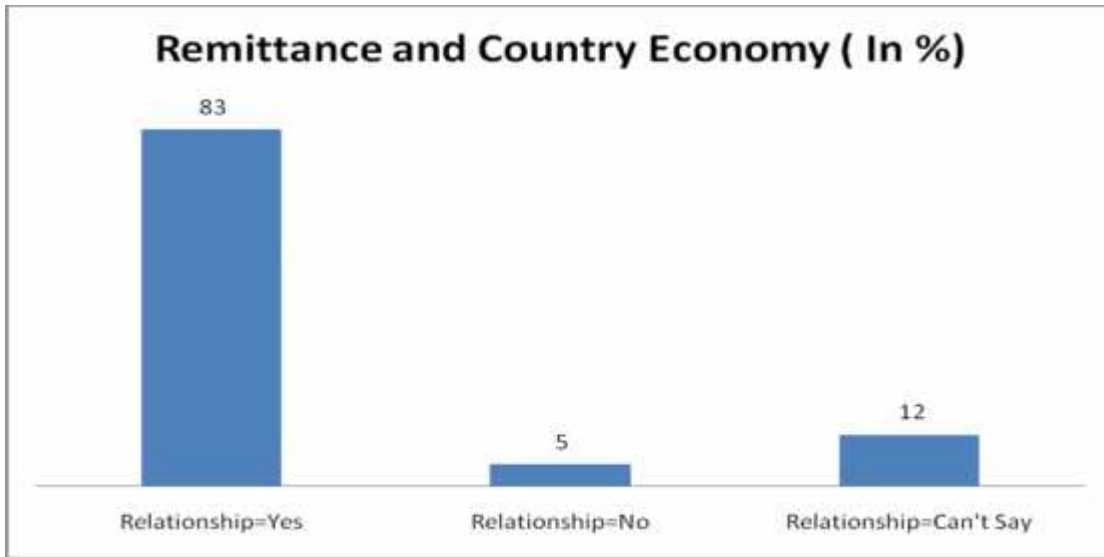


Figure 4. 16: Workers' remittance and country economy

Out of total respondents, 83% of respondents have said there is significant impact of workers' remittance on country economy; whereas 5% of respondents said workers' remittance has no significant impact on country economy and 12% of respondents have doubts on significance of workers' remittance in country economy and hence marked as can't say,.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

In Nepal, workers' remittance is one of the most important economic variables in recent times as it helps in balancing balance of payments, increasing foreign exchange reserves, enhancing national savings and increasing velocity of money. For about two decades remittance has been contributing around 45% of export earnings. Moreover, it is greater than foreign aid and thus helps in lessening dependence on foreign aid.

The study basically seeks to empirically examine the relationship between workers' remittance and various macro economic variables of Nepal with taking data of during the period of 1995 to 2012 AD. The study also focus on understanding the remitting habit of individuals with respect to various factors and prospective. Banks have also been used to study their remitting habit and service that they have provided to people residing abroad and send money on regularly basis. Considering the fact that Nepalese economy is highly derived and depends on workers' remittance, it is important for us and policy maker to understand whether various macro economics variables has significant impact or not and whether it has negatives or positive correlations with workers' remittance.

To test this relationship a model of regression analysis was established using simple regression model along with test of ANOVA, and F-test. The research also tested correlation between all the nine variables using correlation analysis. In addition, multicollinearity was also examined in between depended and independent variables to check whether the two factors were totally independent of one another or not. To identify the remitting habit of individual primary research has been carried out with standard questionnaire which also includes few Banks.

The findings are many and most instructive; however, the major findings which are quite striking are as per Regression Analysis macroeconomic variables have insignificant relationship between workers' remittance of Nepal. As per correlation analysis, not all the macroeconomic variables have positive relationship between workers' remittance some has positive relationship and other has negative relationship. Workers' remittance also not been able to utilize in productive sectors

as sizeable proportion of remittance inflow to Nepal is channeled intentionally or unintentionally at some economically unproductive uses.

No doubts, workers' remittances are unarguably a vital source of finance for many individuals and families in Nepal. However, the full economic benefits of these flows to Nepal can only be realized by formulation of appropriate policy measures to channel remittance flows into some more economically productive uses. There are also some negative sides of remittance earning e.g. brain drain, its overall contribution to Nepal economy is very much effective. Appropriate and timely government policies and initiatives can boost up the amount of remittance and can rectify the problems related to it. Remittance has created a new dimension in the economic development of Nepal. We have to properly unlock the potentialities of remittances and utilize it properly to make it an indispensable tool of the economic development of Nepal.

5.2 Conclusion and Recommendation

5.2.1 Conclusion

Workers' remittance in Nepal has maintained the hefty growth during 1995AD to 2012AD. Most of the macroeconomic variables, though, have not followed the growth trend, required for the prosperity of the economy. Although the outflow of Nepalese for foreign employment started with the seasonal movement of Nepalese workers into India and inception of the British Army to take Nepalese in the past, it, since 2000s, took astronomical growth and, thus, has made the hefty growth of workers' remittance sustained. Workers' remittance has increased by 41.8 percent to Rs. 359.55 billion in FY 2011/12, which was only Rs. 47.22 billion in FY 2000/01. The actual figure of remittance may be higher than this because of the weaknesses in the data reporting, problem of capital flight, and use of informal channel for transferring remittances. The trend of workers' going for foreign employment has been increasing in recent years, which also indicates that workers' remittance may attain ever higher growth than now.

A large number of previous study and research indicated that there is a relationship between macroeconomic variables and workers' remittance. In this study, simple regression and correlation analysis is employed to test the effects of macroeconomics factor on workers' remittance for period of 1995 to 2012 AD. Macroeconomic variables used in this study are

Workers' Remittance, GDP Growth rate, Exchange Rate, Inflation rate, FDI, Import as % of GDP, Export as % of GDP, Fixed Capital Formation as % of GDP and Interest Spread Rate.

The objective of this research is to find out and study the casualty, if any, between the workers' remittance and various macro economic variables. The result found that there is an insignificant relationship between the workers' remittance and macroeconomic variables. This shows that the workers' remittance of Nepal is not much affected by the macroeconomic variables. The research shows that workers' remittance has positive relationship between Exchange rate, FDI, Export as % of GDP & Import as % of GDP, and negative relationship between GDP growth rate, Inflation rate, Fixed capital as % of GDP & Interest rate spread.

As per field survey data, banks are far behind in term of being channel between remittance sender and receiver. Bank accounts few percentage of remittance where as money transfer agent has captured huge percentage and has been able to become mediator between remittance sender and receiver. Family needs are the major factor which has high impact on frequency of remittance transfer, exchange rate stands only after family needs and expenses. Majority of remittance transfer has received amount range of NPR 25,000 to NPR 50,000 in one transfer. The country's substantial remittance income has served to help maintain macroeconomic stability but it has not been channeled into productive investments for achieving higher, long-term, sustainable growth; only 13% of workers' remittance is being used for business startup or investment and 11% is being used for saving in Banks and FINs.

Banks are not been able to convert majority of workers' remittance into saving and hence all being used for family expenses, purchase of house and land and are being invested in unproductive sector. Fewer the family members residing abroad, higher the frequency of remittance into home country; this is mainly due to dependability of home member country with member residing abroad. Likewise, if we analyze the volume of amount received in one transfer, those who have their lower family member in abroad received high volume of remittance and so on. Due to fast operation, hassle free processes, less paper documentation compare to banks, money transfer agent is the most preferable channel to both remittance sender and receiver. Money transfer agents are now more reliable and they are coming with more privileged and value added services.

Overall, Nepal is expected to maintain macroeconomic stability, thanks to continued revenue administration reforms and growth in revenue mobilization with high remittance inflows. It has been

already demonstrated that remittances sent by the migrant workers is an effective tool for poverty reduction and to stabilize country economy. Though foreign employment is boon to the economy, the facilities are inadequate to back up the increasing trend of migration.

5.2.2 Recommendations

The finding provides an insight into the characteristics and practices of workers remittance with respect to various macroeconomic variables. In the view of these the following recommendations can be drawn which may be useful for government authorities, bank management, money transfer agents, policy makers and other stakeholders.

- The Nepalese policy maker and stockholder must understand the relationship between workers' remittance and various macroeconomic indicators in order to make good and effective policy.
- The government must be aware of the relationship between macroeconomic indicators and worker remittance trends when setting rules and regulations that affect one of them.
- The government should play proactive role to promote foreign employment by inducting and adhering to the policy of economic diplomacy.
- Further research must be conducted on the relationship between workers' remittance and the country economy.
- Structural change in the relationship between macroeconomic variables and stock market returns also be analyzed.
- Official channels (banks and money transfer agents) should act more proactively in order to cater remittance which has been coming through unofficial channels.
- Banks should be more proactive and should provide more privilege value added service in order to cater more remittance transfer and volume.
- This study is confined to only Nepalese macro economic variables. However, further research can be done by comparing the behavior of Nepalese macroeconomic variables with other SAARC countries.

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APPENDIX:

Appendix 1: Summary of Selected Macro economic Variables

Year	GDP Growth (Annual %)	Inflation Rate	Exchange Rate	FDI (in \$ billions)	Exports of goods and services (% of GDP)	Fixed Capital as % of GDP	Import as % GDP	Interest Rate Spread	Workers' Remittance (in NPR Billion)
1995	3.47	7.62	51.89	19,160.17	24.97	22.07	34.52	3.19	2.52
1996	5.33	9.22	56.69	23,056.47	22.82	22.53	35.64	3.25	2.65
1997	5.05	4.01	58.01	12,024.66	26.33	21.67	37.71	4.75	3.39
1998	3.02	11.24	65.98	4,350.00	22.82	21.73	33.89	5.08	4.98
1999	4.41	7.45	68.24	(484.83)	22.85	19.08	29.72	4.02	6.65
2000	6.20	2.48	71.09	20,850.00	23.28	19.32	32.43	3.50	9.19
2001	4.80	2.69	74.95	(5,952.54)	22.55	19.20	33.28	2.92	30.93
2002	0.12	3.03	77.88	14,778.08	17.74	19.56	28.49	3.15	47.22
2003	3.95	5.71	76.14	(417.35)	15.70	19.92	28.55	4.42	47.54
2004	4.68	2.84	73.67	2,451.78	16.68	20.34	29.46	5.85	54.20
2005	3.48	6.84	71.37	(6,647.98)	14.58	19.94	29.48	5.88	58.59
2006	3.36	7.56	72.76	5,741.71	13.45	20.72	31.32	5.75	65.54
2007	3.41	6.10	66.42	995.12	12.86	21.07	31.72	5.75	97.69
2008	6.10	10.91	69.76	38,176.18	12.78	21.88	33.26	5.60	142.68
2009	4.53	11.61	77.55	87,799.64	12.42	21.35	34.66	5.50	209.70
2010	4.82	9.98	73.16	94,022.27	9.58	22.21	36.40	4.38	231.73
2011	3.88	9.55	74.02	95,012.67	8.91	21.24	32.83	6.23	253.55
2012	4.63	9.45	85.20	92,100.90	9.79	19.63	32.59	6.84	359.55

Appendix 2: Percentage Change of Selected Macro Economic Variables

Year	GDP Growth	Inflation Rate	Exchange Rate	FDI	Exports of goods and services (% of GDP)	Fixed Capital as % of GDP	Import as % GDP	Interest Rate Spread	Workers' Remittance
1996	53.62	20.96	9.25	20.34	(8.63)	2.09	3.25	1.88	5.21
1997	(5.25)	(56.51)	2.32	(47.85)	15.38	(3.81)	5.80	46.15	27.85
1998	(40.25)	180.41	13.73	(63.82)	(13.32)	0.27	(10.13)	7.02	46.81
1999	46.29	(33.74)	3.43	(111.15)	0.12	(12.19)	(12.30)	(20.90)	33.56
2000	40.51	(66.73)	4.18	(4,400.50)	1.91	1.25	9.11	(12.95)	38.12
2001	(22.58)	8.45	5.42	(128.55)	(3.14)	(0.66)	2.64	(16.67)	236.64
2002	(97.49)	12.69	3.91	(348.27)	(21.36)	1.93	(14.39)	7.86	52.67
2003	3,180.24	88.39	(2.23)	(102.82)	(11.49)	1.84	0.19	40.40	0.68
2004	18.70	(50.20)	(3.24)	(687.47)	6.26	2.09	3.21	32.55	14.01
2005	(25.70)	140.56	(3.13)	(371.15)	(12.58)	(1.96)	0.05	0.36	8.10
2006	(3.44)	10.51	1.95	(186.37)	(7.80)	3.91	6.23	(2.13)	11.86
2007	1.56	(19.29)	(8.71)	(82.67)	(4.39)	1.67	1.30	-	49.05
2008	78.93	78.91	5.04	3,736.32	(0.62)	3.84	4.84	(2.54)	46.05
2009	(25.74)	6.41	11.16	129.99	(2.79)	(2.39)	4.21	(1.86)	46.97
2010	6.25	(14.02)	(5.66)	7.09	(22.84)	4.00	5.03	(20.45)	10.51
2011	(19.36)	(4.32)	1.18	1.05	(7.05)	(4.34)	(9.82)	42.40	9.42
2012	19.30	(0.99)	15.10	(3.06)	9.87	(7.58)	(0.71)	9.79	41.81

Appendix 3: Survey Questionnaire for Walking Respondents

Dear respondents,

I, a MBS student of Bhairahawa Multiple Campus, Bhairahawa, am conducting a research on “A Study of relationship between workers remittance and macro-economic factor variables in Nepal”. This survey is part of my academic Research requirement. Your answers would help me in assessing the relationship between workers remittance and macro-economic variables in Nepal

Thank you for your time and effort in filling out this questionnaire. I assure you that the information and responses you provide in this questionnaire will be kept highly confidential and will be used only for my academic purpose.

1. Number of Family member/s living abroad

- 1) One
- 2) Two
- 3) More than two

2. How often they remit you the money

- 1) Once in month
- 2) More than once in a month
- 3) Depend on the Family needs

3. Which factor do you think highly affect the number of remittance transactions from abroad

- 1) Exchange Rate
- 2) Need of the Family
- 3) Interest Rate on deposit of Nepalese Financial Institution
- 4) Investment opportunity in Nepal

4. In which channel they do remit the money

- 1) Banks
- 2) Money Transfer Agents
- 3) Individual Person

- 5. Could you specify the reason for your choice on question no. 3.**
- 1) Reliable and the funds can be deposited in the account.
 - 2) Fast, Hassle free and do not require more paper works like in Banks
 - 3) Reliable as the fund is normally collected from individual bringing the funds
 - 4) Have been receiving the funds from the same process since the beginning.
- 6. Could you please specify the range of amount you received (in one transfer) from abroad in NPR**
- 1) Less than 10,000.
 - 2) 10,000 to 25,000
 - 3) 25,000 to 50,000
 - 4) Above 50,000
- 7. What is your main purpose of remitted fund**
- 1) Family Maintenance
 - 2) Investment in House and Land
 - 3) Loan Repayment
 - 4) Business Start up or investment
 - 5) Saving
- 8. How often do your family member returns back to foreign country once they come back in Nepal.**
- 1) Regularly
 - 2) No
- 9. Do you think remittance is major source of Nepal which has multiplier effect in balancing the county economic?**
- 1) Yes
 - 2) No
 - 3) Cannot say

**** Thank you ****

Appendix 4: Survey Questionnaire for Bank's Representatives

Dear respondents,

I, a MBS student of Bhairahawa Multiple Campus, Bhairahawa, am conducting a research on "A Study of relationship between workers remittance and macro-economic factor variables in Nepal". This survey is part of my academic Research requirement. Your answers would help me in assessing the relationship between workers remittance and macro-economic variables in Nepal.

Thank you for your time and effort in filling out this questionnaire. I assure you that the information and responses you provide in this questionnaire will be kept highly confidential and will be used only for my academic purpose.

1. Number of Service/s your bank provide to customer living abroad

- 1) One
- 2) Two
- 3) More than two

2. How often your customer residing abroad remit fund into your Bank

- 1) Once in month
- 2) More than once in a month
- 3) Depend on the Family needs

3. Which factor do you thing highly affect the number of remittance transactions from abroad

- 1) Exchange Rate
- 2) Need of the Family
- 3) Interest Rate on deposit of Nepalese Financial Institution
- 4) Investment opportunity in Nepal

4. By which channel they do remit the money into your bank

- 1) Your own Bank's channel
- 2) Money Transfer Agents or Third Bank Transfer
- 3) Individual Person Deposit

5. **Can you specify the reason for your choice on question no. 4.**
 - 1) Reliable and the funds can be deposited in the account.
 - 2) Fast, Hassle free and do not require more paper works like in Banks
 - 3) Reliable as the fund is normally collected from individual bringing the funds
 - 4) Have been receiving the funds from the same process since the beginning.
6. **Could you please specify the range of amount you received (in one transfer) from abroad in NPR**
 - 1) Less than 10,000.
 - 2) 10,000 to 25,000
 - 3) 25,000 to 50,000
 - 4) Above 50,000
7. **What do you think is the main purpose of remitted fund**
 - 1) Family Maintenance
 - 2) Investment in House and Land
 - 3) Loan Repayment
 - 4) Business Start up or investment
 - 5) Saving
8. **How much deposit normally retains out of Remittance Transfer**
 - 1) 75 to 100 % of Remittance Transfer
 - 2) 50 to 75% of Remittance Transfer
 - 3) 25 to 50% of Remittance Transfer
 - 4) Less than 25% of Remittance Transfer
9. **Do you think remittance is major source of Nepal which has multiplier effect in balancing the county economic?**
 - 1) Yes
 - 2) No

Do you have any suggestions for me so as to have good idea on relationship between Workers Remittance and Macro-economic variables of Nepal?

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**** Thank you ****