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Diploma Thesis

Impact of Worker's Remittances on Economic Growth in Nepal's Economy

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DIPLOMA THESIS ASSIGNMENT

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Economics and Management

Thesis title

Impact of Worker's Remittances on Economic Growth in Nepal's Economy.

Objectives of thesis

The main aim of the thesis is to appraise remittance role and its effect on the national economy of Nepal. The partial goals of the thesis are as follows:

1. To assess remittance impact on economic growth in Nepal's economy.
2. To suggest possible measures to fulfilll the gaps based on the findings of the analysis.

Methodology

A literature review will be conducted using methods of literature review and secondary data analysis.

The practical part will be performed by econometric analysis of the microeconomic variables (GDP, FDI, ODG and remittance etc.) in the period of 1995 to 2013. This will be conducted by the econometric modeling and series analysis with the help of Gretl software.

Final evaluation and conclusion will be based on literature review of the study and the econometric analysis.

The proposed extent of the thesis

60-80 pages

Keywords

Remittance, GDP, FDI, Revenue, Nepal, Economic growth

Recommended information sources

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Declaration

I declare that I have worked on my diploma thesis titled “Impact of Worker’s Remittances on Economic Growth in Nepal’s Economy “by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

In Prague on 31Mar2016 ______________________________

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I am deeply indebted to my supervisor Dr. Ludwig Dittrich, for his continuous advice, encouragement and generous support during this study. His valuable comments and criticism have always inspired me to do things in a better way. I would also like to extend gratitude to Prof. Richard Shelby, for his excellent guidance and valuable inputs.

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Ovlivnování Remitence pracovniku na ekonomický růst Nepala

Souhrn

Remitence pracovniku má pozitivní vliv na růst HDP. V této diplomové práce se hodnotí vklád finančních a jiných prostředku do ekonomiky Nepala a také rozlišuje potřeby týkající se údajů a jejích nedodržení. Remitence pracovniku má pozitivní účinky na růst HDP do určité míry v ekonomice Nepála. V průběhu vyzkumu byly použite teoretické a ekonometrické metody.

V tomto průzkumu bylo zjištěno, že používání fonda převodů finančních prostředků pro výrobní sektor a řízení zúčastnujících migrantu má významné vztahy uvážující pozitivní vliv na zvýšení ekonomického růstu díky kvalitních remitenčních příjem.

Remittance dokazuje udržitelný a spolehlivý zdroj pro vládu, aby ta doplněla nedostatek zdrojů. Remittance poskytla vládě podporu pro získávání finančních prostředků. V době, kdy nejsou příznivé hlavní ekonomické ukazatele země.

Vláda by měla hrát aktivní roli při podpoře zahraniční zaměstnanosti pomoci zahájení a vnímání k politice ekonomického diplomace, stejně jako zdravé příznivého prostředí pro podnikání je podpořit domácí i zahraniční investice. Silné a stabilní politické prostředí umožňuje investovat přátelskou situaci. Za tímto účelem vláda stejně jako političtí představitelé by měli dát přednost ukončení přechodného období a aby se zajistilo bezpečnost soukromých investic. Světlá strana remitencí závisí na oživení ekonomiky pomocí fyzického, lidského a sociálního kapitálu ke snížení její negativního ovlivnovaní na ekonomiku.

Klíčová slova: Hrubý Domácí Produkt, Index Zahraničního rozvojů, Oficiální rozvojová dotace, Remitence , Nepál , Ekonomický růst , Migrace , Lidský kapitál , Zaměstnanost, Tempo růstu.

Impact of Worker's Remittances on Economic Growth in Nepal's Economy

Abstract

Worker's remittance inflow has positive effects on GDP growth in Nepal. This research paper evaluates the contribution of remittances to Nepalese economy and investigates the determinants of remittances receipt in Nepal. Descriptive and econometric methods were used to achieve the study objectives.

This study finds that using the remittances fund for the productive sector and managing quality emigrants' participation has indeed influential causal relations putting positive impacts on increasing economic growth through quality remittance income.

Remittance proves a sustainable and reliable source for the government to fulfil the resource gap. Remittance has provided acute support for governmental fund raising. At a time when the country's major economic indicators are not favorable.

It is recommended that, the government should play an active role to promote foreign employment by initiating and perceiving to the policy of economic diplomacy as well as a healthy enabling environment for business to encourage domestic as well as foreign investment. A strong and stable political environment enables investment friendly situation. For this, the government as well as the political leaders should give priority to ending the transition period and order to ensure the security of the private investment. The bright side of remittances depends on revival of the economy by using the physical, human and social capital to diminish its negative impact on the economy.

Keywords: Gross Domestic Product, Foreign Development Index, Official Development Grant, Remittance, Nepal, Economic growth, Migration, Human capital, Employment, Growth rate.

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List of abbreviations

ADB	: Asian Development Bank
BIMSTEC	: Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
BOP	: Balance of payment
CBS	: Central Bureau of Statistics
CIA	: Central Intelligence Agency
FDI	: Foreign Direct Investment
GDP	: Gross Domestic Product
GON	: Government of Nepal
ILO	: International Labor Organization
IMF	: International Monetary Fund
MOF	: Ministry of Finance
NPC	: National Planning Commission
NR	: Nepali Rupees
NRB	: Nepal Rastra Bank
ODA	: Official Development Assistant
ODG	: Official Development Grant
SAFTA	: South Asian Free Trade Area
UNDP	: United Nations Development Programme

1 Introduction

In general, remittance means sending income in terms of money or goods in the home by the migrants or workers who have their earnings outside their home country. Nepal has a long history of foreign employment with remittance that playing a vital role in the livelihood of many people. Nepali's fought bravely during the first and second World Wars to accomplish their national interests and support their families as a return. Foreign employment served as a source of hope for the most uneducated and unskilled young workers when the country's public and especially private sectors were highly underdeveloped. Remittance has played an increasingly important role in narrowing down the trade deficit caused by shrinking exports and bloating imports.

The International Organization for Migration, 2008 defines remittances as follows: "Migrant remittances are defined broadly as monetary transfers that a migrant makes to the country of origin. In other words, financial flows associated with migration". The Centre for Global Development (Center for global development, 2006) estimates that around 200 million people do not live in the same country they were born in.

In recent years, Nepalese population has been migrating within the country while others emigrate overseas to pursue economic opportunities. Nepalese workers, mainly work in India, South Asia, East India and the Gulf cooperation council countries (The United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar and Kuwait). Between 1995 and 2004, one-fifth of the poverty decline in Nepal was contributed by the inflow of remittance from labour migrants. (World Bank,2005). Nepal is now widely referred as one of the "remittance economies". It is the fifth largest recipient of remittances, which make up 23 % of the country's GDP or approximately $ 3 billion US Dollars to Nepal's economy. (Ratha, 2009). According to World Bank, Nepal placed in third place in the world in terms of contribution of remittances to the GDP, which generates 4.34 billion dollars in remittance in the whole fiscal year 2012-013.

In the past Nepali workers were most likely to work in India because of the free border, low transportation costs and shared cultures (Bohara, P. & Massey, D.S, 2009). Although

India is one of the most common destinations for Nepali migrants for obvious reason and it share 11.3 percent of total remittances received by household in FY 2010/11. Moreover, the Persian Gulf region has gradually become a popular destination in recent years. According to Department of Foreign Employment of Nepal's data of 2008/09 – 2013/14, among the destination states in which labour migrants were sent by recruitment agencies, Malaysia received the most labour migrants at 40.9 percent of all male and female labour migrants, followed by Saudi Arabia (22.9 percent), Qatar (20.3 percent), UAE (11.2 percent), Kuwait (2.1 percent). Foreign employment is gradually becoming a major origin of foreign exchange earnings and maintaining the positive balance of payment in Nepal. It also generates enormous remittance money, transforming the agricultural economic system of Nepal into a remittance economy. Now, remittance has become an important source of income for the government as well as to the private sector through tax and fees. These fees include manpower company's fees, passport fees, value added tax and other non-tax revenues.

Remittance is an important source of income for developing nations like Nepal. It is a private income that is shifted from international migrants to family members in their host land. Remittance income has been mostly used for domestic purposes, such as managing land and buildings, child education, health care, entertainment as well as in productive and commercial sectors.

Remittance is a considerable source of foreign exchange as they change the level of national income. It has negative microeconomic effects as it is generating dependencies among the recipients, encouraging continued migration of the labour force, bringing down the likelihood of foreign investment because of an unstable or untrustworthy workforce. A large number of people going forth for foreign employment has been significantly increased due to the unbelievable number of unemployment, inadequate growth of industrial sectors, a low degree of remuneration and earnings and lack of job environment. On average 250,000 people are exiting the country every year for foreign employment (Finance, Ministry 2011).

The country’s economy is regularly becoming consumption oriented due to remittance income. In the FY 2000/01, consumption of GDP is at 88.3 percent and produced up to 93.3 percent by FY 2010/11. Because of it, the rate of domestic saving has fallen down to 6.7 percentage from 11.7 percent. Which indicates that consumption oriented economy leads to dependency and it results in the lack of resource for investors. (Finance,Ministry 2011).

Remittance, Official Development Grant (ODG) and Foreign Direct Investment (FDI) are supporting the government as and when internal resources are not sufficient. The variables could take as an external funding to the government for development purpose. Workers’ remittance represents as remittances inflow for analysis in this study. The pension fund, however, has not been covered because of its social purposes, related to retired armies from India and UK. Also, workers' remittance income is distinct from the pension, grant and welfare. Humanitarian aid, NGOs aid and refugees fund have not been included into the workers’ remittances as well. Comparative variables have been selected from the development resources based on contribution to GDP. ODG and FDI are incorporated into the comparative analysis because of their development support to the government. Official Development Grant (ODG) and FDI take for development purpose which also is distinct from other foreign aid like military component and another private flow. Revenue has been incorporated as main internal resources to Gross Domestic Product (GDP).

This study aims to assess the remittance trends and their roles and its effects on the economy of Nepal. And, it analyses the remittances contribution on the internal economy of Nepal. Moreover, it experiments the workers' remittances income impact on the macro economy and also places the cause of bona fide interfere area about remittance to the economic system.

2 Objectives and Methodology

2.1 Objectives

This section deals with macroeconomic variables, Gross domestic product, Remittance income, Official development grant, foreign development index, internal revenue. This research paper consists of dependent and independent variable and will cover from 1995 to 2013.

Specific objective of the study is as follows:

1. To appraise remittance role and effect on the national economy of Nepal.

2. To assess remittance impact on economic growth in Nepal's economy.

3. To suggest possible measures to fulfil the gaps based on the findings of the analysis.

2.2 Hypothesis of the study

There exist a positive relationship between worker's remittance and economic growth in Nepal.

Remittance inflow has a significant impact on economic growth and skilled labour manpower which influences remittances and economic growth in Nepal.

2.3 Research question

Do remittances amount affects economic growth of Nepal?

Do remittances fund use properly in Nepal economy?

Does the government make any training and pre-vocational orientation for the workers?

How the government apply the policy for the proper use of remittance amount?

2.4 Data and sample collection

Data is defined as the quantitative or qualitative values of a variable and the lowest unit of information from which measurements and analysis can perform. It may be numbers, images, words, figures, facts or ideas. There are primary and secondary sources of data collection techniques.

To fulfil the aims of the research, the data collect from the official and unofficial sources. The relevant data taken from a publication of national planning commission secretariat, central Bureau of statistics (Central Bureau of statistics, 2014).Budget speech of Government of Nepal, economic survey, annual publication of Nepal Rasta Banks, Magazines, seminar paper, report on research center's data and information from donor agencies like WE, ADB, IMF, UNDP etc.

Following data are taken to examine the performance of the remittance income to Nepal economy.

TABLE 1: DEFINED VARIABLES

Variable	Description	Unit
GDP	Gross Domestic Product	In Million NR
FDI	Foreign Direct Investment	In Million NR
REV	Internal revenue	In Million NR
ODG	Official Development Grant	In Million NR
REM	Remittance Income	In Million NR

2.5 Research design

The research design refers to the conceptual framework or guide use for the planning, implementation and analysis of a study in which the research is conducted. It serves to set the details of the procedures to obtain data needed for organization and puzzle out the problem. It is a systematic plan of how, when and where data are to be gathered and examined.

An econometric analysis is conducted based on five controlled variables, i.e. GDP, remittances inflow, Official Development Grant (ODG), Foreign Direct Investment (FDI) and national revenue. Besides, qualitative analysis of development and labour is considered. The primary goal of this work is to examine the impact of workers' remittance on economic growth in the case of Nepal during the study period from 1995 to 2013. Unlike action research, this one will be the general (academic) research in order to get new knowledge since it is accomplished by the piece of the degree and not for the applied purpose.

2.6 Model design

The basic model for the analyzing whether remittances affect growth in Nepal is:

$GDP_t = f\ (Rem_t, Rev_t, ODG_t, FDI_t,)$

In this model, GDP (Gross Domestic Product) is the endogenous variables and Remittance, Official development grant, Internal revenue and Foreign development index are exogenous variables. Gretl software will be run for the purpose of the presenting and analyse the secondary data. However, the model used in this research, Ordinary Least Square (OLS) model is suitable to run by using Gretl software due to its features comprise of OLS method. The result of the OLS can use to test in the other normal tests like t-test and F-test to check the significance of the variables and model.

Ordinary Least Squares

Ordinary least square is a method to estimate the unknown parameters in a linear regression model and it's main aim is to minimize the differences between the observed value and predicted value.

Heteroscedasticity

If the variance of the error has constant value then the inconsistent variance of the error term is known as heteroscedasticity. This problem is caused by measurement error and nature of data. The hypotheses for this test are stated as below:

H0: There is no heteroscedasticity problem.

H1: There is heteroscedasticity problem.

The level of significant, α is 0.05. The decision rule is to reject H_0 if the probability value is lower than α value. Otherwise, do not reject the H_0.

2.6.1 Autocorrelation

Relationships among error terms refer as autocorrelation.

The hypotheses for this test are stated as below:

H0: There is no autocorrelation problem.

H1: There is autocorrelation problem.

2.6.2 Normality test

Normality tests are used to determine if a data set is well-modeled by a normal distribution and to compute how likely it is for a random variable underlying the data set to be normally distributed.

The hypotheses for this test are stated below:

H0: Error terms are normally distributed.

H1: Error terms are not normally distributed.

The decision rule is that reject H_0 if probability value is lower than the significant level, $\alpha = 0.05$. Otherwise, do not reject the H_0.

The test statistics of Jarque-Bera (JB) Test is stated as below:

$$JB = n\left[\frac{S^2}{6} + \frac{(K-3)^2}{24}\right]$$

Where,

n = Sample Size

S = Skewness

K= Kurtosis

2.6.3 F test

The hypotheses for this test are stated as below:

H0: The overall model is insignificant.

H1: The overall model is significant.

The decision rule of F-test states that the H0 will be rejected if F-test statistic value is lower than the lower critical value or higher than the upper critical value or the probability value is lower than the significance level, $\alpha = 0.05$. Otherwise, do not reject the H0.

2.6.4 T-test

The hypotheses for this test are stated as below:

H0: There is no significant relationship between the independent and dependent variable $(\boldsymbol{\beta i = 0, i = 1, 2, 3, 4, 5})$.

H1: There is a significant relationship between the independent and dependent variable $(\boldsymbol{\beta i \neq 0, i = 1, 2, 3, 4, 5})$.

2.7 Data analysis

This research has carefully examined the secondary data those have been garnered from different authors. Mostly comparison and generalization have been done among the usable data. The research is focusing the relation between the remittance and the poverty reduction. When the number of migrants grew, the amount of remittance will be rise.

For this purpose, the data were collected from the Nepal Rastra Bank. And, make the comparison among the different variables to get the real answer. This research paper, trying to use the generalization methodology to fulfil the research. And, trying to generalize the situation which helps to find out the real impact on the national economy and a time impact on the household income.

The unemployment rate in the Nepal has been around the 46 percent recorded. The huge numbers of young are hungry for jobs. Inside the country they did not get any opportunity so that they are applying the foreign employment. When they have a job, they are sending to money for the family. It is common like people's income has been improving, then expenditure side will be rising. The latest research has shown that 56, percent of Nepalese households have been benefited by the remittance. The remittance income helps to reduce the poverty.

The data will be scientifically analysed whether it is necessary to analyse the real situation or not. This research paper has been based on secondary data which has different objectives. So the unrelated data has been removed and the related data has been accepted and included. Table and different diagram such as a graph, bar diagram has been used to analyse the data to make it more understandable. More ever during analysis, the objective of this study has been carefully studied. Indicators have been clearly picked up and very carefully comparing them to each other to identify consistencies and differences.

The structure of the thesis includes introduction, literature review, statement of the problem, objective, methodology, foreign employment and remittance income, the channel of foreign employment and remittance, and national demography and its impact.

3 Literature Review

This chapter organizes the different kinds of literature that regard remittances as a key resource for economic development. It will elaborate the theoretical and empirical literature which deal with the national and international literature related to this study.

Remittance promotes economic growth, many studies show that there is the positive impact of remittances on economic growth and poverty alleviation. Worker remittance can contribute to the poverty reduction process through the multiplier effects of which create additional demand, use and income.

The main theories of remittances can be divided into three categories: altruism, self-interest and intertemporal conceptual agreement. Among them, insurance and risk sharing, exchange and implicit loan agreements indicate all kinds of contractual agreement between the migrant and the household left behind.

Lucas and Stark pointed three motives for remitting: Pure altruism, tempered altruism or enlightened self-interest and pure self-interest. In altruism migrants usually feel the unselfish need to support their families, which implies that remittances are a rather stable source of capital for the migrants' families, as they are likely to remain dependent on this capital also in the future (Haas, 2008)

(Stark, Oded., 1991.) disputes that if families receive altruistically motivated transfers, which are valued more than transfers through the marketplace, the preference for these intra-family transfers do not disappear when exchange opportunities increase.

3.1 New Economics of Labour Migration (NELM):

The New Economics of Labour Migration (NELM) considers that wage differential is not a solely one reason of migration (Massey et al., 1993). It claims the remittance as essential motives for migrating. This theory fits in Nepalese society because labour migration to the

Middle East or South East Asian countries are usually for several months, or years by one or more members of the household based on an implicit household contract. Developing countries have mobilized their abundant labours to accumulate international resources from remittances as stimulating factors in the liberal regimes.

In contrast to altruistically motivated, remittances may be involved in Pareto improving exchanges between the migrant and the household: in these cases, remittances act as compensation for services – taking care of the migrant's assets or relatives back home, for instance – that the migrant's former household members perform on behalf of the migrant. As the outcome and the division of surplus are determined by the agents' relative bargaining powers and their external options. (Rapport, Hillel and Frederic Docquier , 2006)

3.2 Altruism

Altruism focus on a migrant view about shocks, risk and household income condition, then send a remittance. In self-interest, migrants mainly send remittances with the ambition to get and invest in assets by confirming their investments are taken care by the family member. It is believed that the main reason for sending remittances to family members is pure altruism. So, altruism is the driving factor for remittances.

Chami et.al. (2005) examined whether remittances behave similarly to foreign direct investments (FDI) that have a positive correlation with GDP growth and they believe that the main reason for sending remittances to family members is pure altruism. Therefore, remittances cannot be compared to profit-driven flows like FDI.

Lucas and Stark (1985) build a theory of remittance determination from the literature of rural-urban migration. They view remittances as one element in a self-enforcing, cooperative, the contractual arrangement between migrant and home. They claim that altruism alone cannot sufficiently explain the motivation to remit. Deriving from a case study of Botswana, they postulate that altruism and self-insurance, separately or jointly, motivate migrants in sending remittances to their families in the hometowns.

(Lucas, R., Stark, O., 1985) reveals that, remittance inflow is the self-interest motive which increases the migrants eligibility for inheritances, what might be termed as social assets in their home countries and it represent a calculated strategy of mutual dependence between migrants and their families.

3.3 Neoclassical approach

As the neoclassical approach, international migration is based on the notion of wage differentials between receiving and broadcasting areas, as well as on the migrant's expectations for higher earnings in host countries. Return migration appears to be regarded as the result of a failed migration experience which did not yield the anticipated benefits. (Todaro,M.P. 1969)

In this approach, return migration exclusively involves labour migrants who miscalculated the costs of migration and did not gather the benefits of higher pay. Return occurs as a consequence of their field experiences abroad or their human capital was not paid back as expected. Furthermore, unlike the raw political economy of labour migration (NELM), the neoclassical economics of migration views that, migrants people not only maximize their profits but also the duration of their stay abroad to achieve a permanent residence and family reunion. In this framework of analytic thinking, the return cannot be moved by a failed migration experience, in terms of expected profits, employment and duration.

3.4 The divergent approach

Divergence theory is concerned about losing labour effects for labour exporting origin places. According to divergent approach, remittances interrupt the growth process at home countries. The increasing number of out-migration invites the uncertainty and discontinuity to hinder the growth prospects in the migrant sending country.

It describes the remittances phenomenon traditionally but convergence theory advocates about benefits of out-migration because they collect resources and distribute incomes in the less developed region. On the other hand, convergence theory states that remittance has positive effects on the socio-economic development. Nevertheless, the use of remittance are consuming, saving, loan repays in the context of Nepal. This theory means that poor economies will rise at faster rates than richer economies. Developing nations bear the potential to grow faster than developed nations. (Rahman, 2000).

3.5 Social network theory

This theory supports convergent approach, and considers remittance as a human and social capital which manage the mobilization of the funding that links to support the development activities at home country. Remittances exchange the resources, moral values and behavioural norms via social network like social feeling, obligation etc.This theory connects with migration and remittance as human and social capital accordingly. Vigorously, social network theory supports the strengthened link for contribution on mobilizing tangible and intangible resources, i.e. financial capital, social capital. Therefore, they support on the accumulation of resources through an extended link for trade, investment and capital (social, human and physical) mobilization in migrant-sending economies. (Glytsos, 1993).

Network theory of migration deals with personal relations between migrants and non-migrants to substitute migration phenomenon. The migrant network helps to connect migrants, former migrants and non-migrants in origin and destination areas through ties of kinship, friendship and shared community origin. These networks increase the likelihood of international movement because they lower the cost and risks of movement and increase the expected net returns to migration. Network connections are a form of social capital.

3.6 Human capital theory

According to this theory, factors such as educational level, skills, age, risk taking capacity, capacity to face new situations, and ethnicity drives migrants. The concept of the human capital theory is proposed by Taylor. (Taylor, J. Edward, Scott Rozelle, and Alan de Brauw;, 2003)And, it deals with acquired skills, abilities, knowledge and qualifications. The amount of human capital determines the labour market position, employment status and income level. The human capital framework describes that migration as an investment, according to the human capital theory of migration, migrants choose their destinations to increase the net present value of their future income. (Massey et al., 1993).

Human capital is the major source of growth, and liquidity constraints generate new effects and investigate the effects of remittance. It is clear that migration is driven by wage differentiates, climatic conditions (who depends on agricultural income) and some unpredictable risks.

Remittance income reduces poverty and helps people’s social well-being, solve the problem of poverty and investment gap. It helps to increase the people’s saving power, supports to health, education sectors, and commercial activities.

Remittance is the private transfer of resources that primarily collects into the household income. The remittance fund is available to use for government by exchange, consumption, saving and investment. It has transacted into cash or kind through banking and non-banking channels. It depends on government policy to regulate the sector how they apply the policy to use this fund.

Remittances represent a designed strategy of mutual dependence between migrants and their families. Because migrant families are poor and complete their necessities by sending their family members to overseas. (Stark and Bloom 1985).

(Glytsos, 1993) suggest that remittances depend upon certain macroeconomic variables, like as the exchange rate and interest rate. Hence, the decision to remit changes over time and is a continuous process of revision and adjustment to the changing structural conditions (e.g., interest rates, exchange rates, wage setting, and labour contracts, etc.) at home and abroad.

Many studies have tried to address the impact of remittances on economic growth. Remittances have a small, positive impact on economic growth. Aggarwal et al. (2006) presented the study over the period 1975-2003 of 99 countries and find that remittance has a significant effect on bank deposits and credit to GDP.

3.7 Remittances and Development

Remittance inflow has significantly increased for a long time but empirical analysis shows that it has not contributed to the growth of economy hopefully. There are many studies concerned about remittance effects through consumption. Development concern of remittance is interconnected with productive use of funds. The remittance fund is able to generate the value of business so that self-income earnings and job creation activities could run. Remittance, as a private fund transferring system, is generally in use in non-productive sectors like housing, ornaments and casino (Chami et.al. 2008, 29).

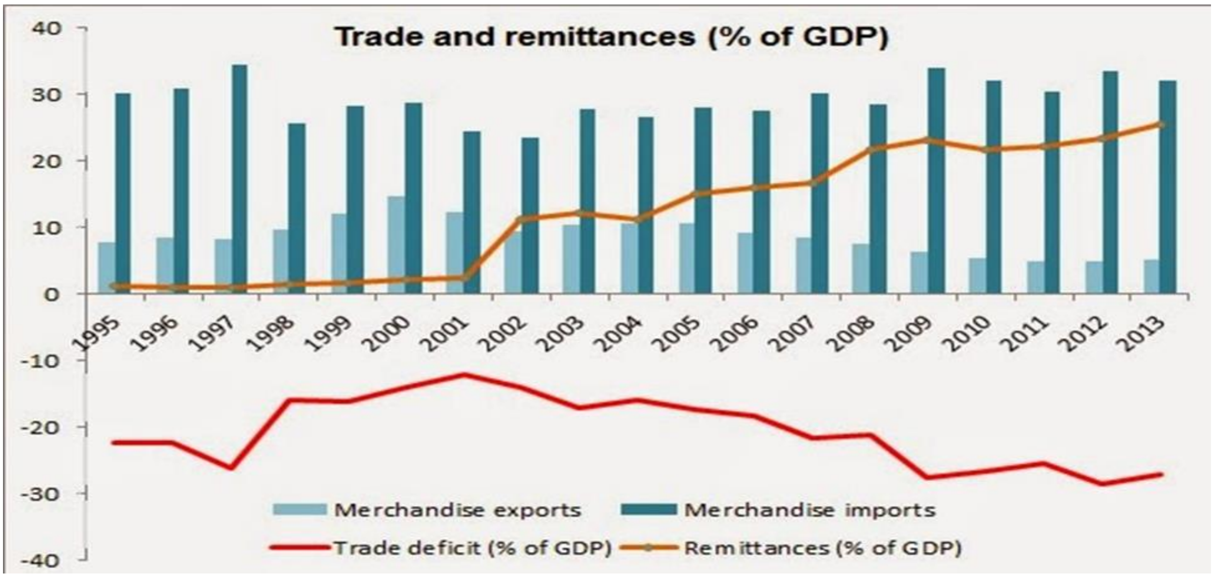
Either remittance fund works as development resources or pushes the economy towards unproductive uses fulfils basic needs as well as ―productive pursuits. FDI help to shifting developing economies through structural changes for sustainable economic bases in the long run but remittances have not such contribution in bringing any big dramatic changes in developing economies.

In developing countries, worker's remittances have become the second largest flows after the foreign direct investment (FDI), both in absolute terms and as a proportion of GDP. As the people notice the volume and nature of remittances, a number of studies have performed along various dimensions, including poverty, inequality, growth, education etc. Remittance inflow to households supports their demand for consumption, education, healthcare and asset accumulation. A number of remittance outflows were US$28 million in 2013. In 2012, Nepal was the third highest recipient of remittances that includes workers' remittances, compensation of employees, and migrant transfers. Inflation has raised due to a combination of structural blocks, domestic supply-side factors, high inflationary potentials, and exogenous pressures such as the ongoing weakness of the currency despite some strengthening in the latter part of the year. Which signify low productivity and policy contradictions. Supply-side constraints include the lack of sufficient supply of electricity, transport bottlenecks, lack of raw materials leading to high import content of processed and light manufactured goods, and the inadequate supply of key inputs to boost productivity.

Due to the lack of job opportunities and the attraction of high wages abroad, Nepalese people leave the country. Which has resulted in a shortage of youth in the agriculture and industrial sectors in Nepal? Because of the weak working environment, lack of sufficient investment, and an economy where demand for goods and services is largely met by imports, remittance inflows have been essential to support for macroeconomic stability as well as household consumption and expenditures. A huge rise in these remittances, (more than 56% of households) has operated consumption of imported goods, contributed to a rise in real estate and housing prices, and facilitated the rise of the number of banks and financial institutions. It is supported that high revenue mobilization and increased foreign exchange reserves help to maintain a balance of payments stability and reduce absolute poverty.

3.8 Trade and remittances:

FIGURE 1: TRADE AND REMITTANCES (% OF GDP)



Source: Economic Survey 2013/014.

Foreign fund inflows boost the value of a country's currency, making its export prices uncompetitive and result in a failure in activity in the tradable sector compared with that in the non-tradable sector. Nepal is unable to afford a high level of imports and is losing effectiveness in its major export, i.e. garments (over 25% of GDP against exports of about 5% of GDP). Nepal's export rate is very low. The export items are still low-valued goods with high price elasticity of import demand. Moreover, the government has to plan some strategies to raise investment, innovation and production. And, have to focus to promote Nepalese items in the international market. Establishment and operationalization of some special economic zones and cash incentives scheme should be implemented. It is wise to take benefits of bilateral (especially with India) and regional convention (SAFTA, BIMSTEC) and special treatment accorded to least developed countries by the developed countries. To Increase the capacity utilization of industries.

The top five remittance recipient countries were Tajikistan (51.9%), Kyrgyz Republic (31.4%), Nepal (24.7%), Moldova (24.6%) and Samoa (23.5%) as a share of GDP In 2012. Nepal was the highest recipient of a share of its GDP in South Asia, as well as, one of the highest recipients of remittances (percentage of GDP) in the world. Remittances have been responsible for poverty reduction and the development of banks and financial institutions. Nepal economy maltreated by a decade-long Maoist insurgency (1996–2006), political instability, slow growth rate and a large migration of youths for employment overseas, the high inflow of remittances allow a huge significance at the micro and macro levels.

It is seen that remittances fund runs through the banking channel. It expands to consumption and non-productive sector, which includes, real estate business, investing in a land and other luxury items. The government of Nepal (GON) has not regulated the fund for productive use yet. Meanwhile, remittance inflow rate to GDP is increasing. The correlation coefficient between remittances and share of the private sector in banking sector credit has found to be 0.9412 and regression coefficient has 1.4310. An important measure of remittance fund has encouraged to use in non-productive business than commercial activities.
According to the World Bank (2008), remittances in 2006 have reached $300 billion, which is ten times larger than the level of 1990. And, demonstrate that among the14000 workers surveyed, a large portion of them invest in non-farm enterprises using funds brought back from abroad (remittances). However, they found that urban-origin workers are more likely to invest their money than are their rural counterparts. (Return International migration and geographical inequality: The case of Egypt., 2003)

Chami, Fullenkamp, and Jahjah (2005) found that there is a significantly negative correlation of remittances with GDP growth. This result contrasts with other private capital (e.g., foreign direct investment).Thus, they conclude that remittances are not proposed to serve as capital for economic development, but as compensation for poor economic performance.

(Edward, 2000) argues that remittances are a source of income that stabilizes a nation's economy in different ways: First, remittances can set the balance of payment and sustain national foreign exchange reserves. Which ensures a strong currency in the receiving country that allows the government to focus on other public policies. Secondly, remittances improve the liquidity of the formal banking system by depositing excess funds into it, because the huge volume of remittances cannot be spent on immediate expenditure by recipients. Thirdly, remittances could enhance government revenue by taxing this income stream.

3.9 Remittances and Human Capital Formation

Migration comprises a loss in specific knowledge and medium skilled workers are likely to accept lower paid jobs. Because of the dissatisfaction in the labour market at home, skilled workers emigrate. Which is not only a reason of differentials between rich and poor countries but it can influence the earning of skilled migrants.

The second labour market effect is known as the "keystone worker" effect. Which measures the interaction of high-skilled and low-skilled workers. If work organization require a certain number of skilled workers in combination with low skilled workers, the emigration of skilled workers might affect the labour markets. “keystone” workers are the main pillars of a firm, without them, the productivity of the firm could decrease. The social, political and economic stability of a country effects the rate of a migration and cause a brain drain. An average increase of 10% of emigrants in the whole population of a developing country is associated with 1.6 percentage point reduction in poverty by using an international poverty line of USD 1 per day. (World Bank,2008). Moreover, 10% growth in the share of remittances in GDP is related to a reduction in poverty by 1.2%.

The loss of a skilled labour to more developed economies (brain drain), might have negative impacts on sending countries. There is the earning gap between the host and the home country. ILO study shows that workers in high-income countries earn an average wage that is almost five times the level of that in low-income countries. The total amount of remittances to developing countries is larger than foreign direct investment (FDI) and more than double as ODA.

Less qualified migrants reduce poverty in comparison to high-skilled migrants, if the high-skilled migrants settle abroad permanently. Remittance flows depends on the duration of the migrant's stay if shorter-term migrants maintain a stronger link to the home economy and, therefore, send more money home while second generation migrants tend to have weaker ties to their family back home. Remittance revenues have encouraged households to decrease their labour supply and suggest to use it as a substitute for farm earnings.

Better payment and more productive work would prefer to work in addition to receiving remittances.From a macroeconomic perspective, policy-makers might want to consider the effects of this reduction in available labour supply.

The return of emigrants brings capital and knowledge with them to their home country which supports economic development and job creation. And, get better opportunities than those who stayed home and contribute to employment generation and economic growth. Meanwhile, some migrants have problems with their skills which does not help them to work for their home country's labour market. After a period of working in a low-skilled job, they may find upon their return home that they are unable to find employment even in the field in which they were employed.

3.10 Brain drain

Brain drain and skilled migration flows have arisen to the migration and development sector. An increasing number of people and their income indicates the greater number of remittance providers and wider networks in the global financial services industry. (World Bank 2005).Brain drain is one of the negative effects of remittances. (Glytsos, 1993) put it as, "feed the unending migration machine." Which signify that middle class of workers is exporting to foreign countries from developing nations.

According to Wucker, remittances not only serve as the safety measures for the receiving families and boost the economies of the receiving countries; meanwhile, they may put pressures on those who stay behind. For the wellbeing of survival, families continue to send members abroad. In the end, if all the best and brightest of its citizens go abroad, the country could certainly lose its ability to improve itself.

(Lucas, R., Stark, O., 1985) found that the brain drain may be an opportunity to prove them self. They argue that “In the short run, migration certainly results in loss of human capital. However, in the long run, the migrants bring back not just the money but also the knowledge or skills they learn from the overseas jobs. Hence, migration could well result in a brain gain for the home country. Countries need to know about the high skilled and low skilled workers to control the brain drain. The performance and capacity of a country in the sector of delivery and productivity may effect the departure of professional workers.

There is a strong influence on the interpretation of the social costs of the brain drain if the incidence of sector emigration prior to actual physical emigration correlations were examined. The labour market situation brings closer understanding to recognize which incentives or employment programs are needed to retain highly qualified migrants. To control brain drain, countries need to know which sectors often lose highly-skilled workers. The departure of professionals influences the performance and capability of a country in many ways (for example, in service delivery and productivity).

Remittances are one of the primary disciplines of the positive effects of migration. Data on the share of remittances in GDP vary among different providers. Furthermore, many migrants use unofficial ways of transfer and the amount of such unregistered remittances can be estimated. The recipient families are most probable to use the transferred money for consumption, investment, health, education and household improvements.

3.11 Remittance, Return migration and employment

Entrepreneurship quality and productivity have a significant relationship. Productive use of resources means setting of means of production for quality output as well as the effectiveness of the policy. Entrepreneurship capability enhances the quality of skill and education. It is essential to use of such resources in development to achieve not only efficiency but also technically and methodologically competence. Whether the quality of labour and productivity supports remittances? The result (theory and empirical) of this statement is still questionable that whether remittances inflow has been able to influence the economic growth of Nepal? The result is investigating on the skilled labour participation in the international labour market. It aims that it could compete efficiently to get global resources through knowledge and skill for the capability of mobilizing resources in Nepal. Thus, skilled labour participation concerns with long-term economic growth and it demands to the revision of the traditional definition of migration and remittance outcomes which is not only capital accumulation but also human capital. The return of migration effects should have the human skill and knowledge along with capital resources so that development aspects of remittances could attain in long-run. Adams (2009) investigates on skill composition and its effects on poverty. Which analyses the skilled labour force to see how it brings a difference in the remittances economy.

According to Adams, skill composition does matter to determine remittance flow because an export of a large share of high-skilled educated workers receive less per capita than the countries which export a larger proportion of low skilled migrants. If quality labour increases by 10 percent, it reduces 11-20 percent per capita remittances, Whereas if low skilled labour increases by 10 percent, the remittance increases by 9-20 percent because low-skilled labour forces have to return to their places to cultivate it but skilled labour forces have plenty of global opportunity to settle in the relatively better world (Adams 2009).

The issue of migrant workers return depends on the labour quality and home country environment. It is not easy to find out their acquired skills and knowledge that they have gain from abroad. Government policy on foreign employment and scheme to remittances helps to maintain quality labour participation and to maximize the return. (Faini, 2007) argues that remittance hampers agricultural productivity at home, but it helps to enhance human capital of the recipients using them optimally. It has a dynamic impact to enhance the capability so that value could add in the economy for development. Remittances help in improving children’s health, education and welfare for generational empowerment.

Knowledge of the magnitude of return flows is not easily obtained partly because return can be both permanent and temporary. A prime concern lies with the potential benefits return migrants bring to employment and the labour market. Where to return migrants can raise sufficient capital, evidence suggests that they are more often self-employed compared to non-migrants. To measure the effects on the labour market it is important to examine whether migrant entrepreneurs can afford to employ non-family members as well. Furthermore, research needs to look at which political, social and economic factors encourage return and company foundation. Little is known about the returning migrant's experiences of re-entry into the labour market. Leading questions are, for example, in which sectors they are mostly employed and whether jobs are formal or informal. Another interesting point is to see if the new work relates to the job they were doing abroad and to what extent returnees can apply and benefit from the knowledge and experience they gained abroad. (Mc cormick, B; Wahba,J. 2003).

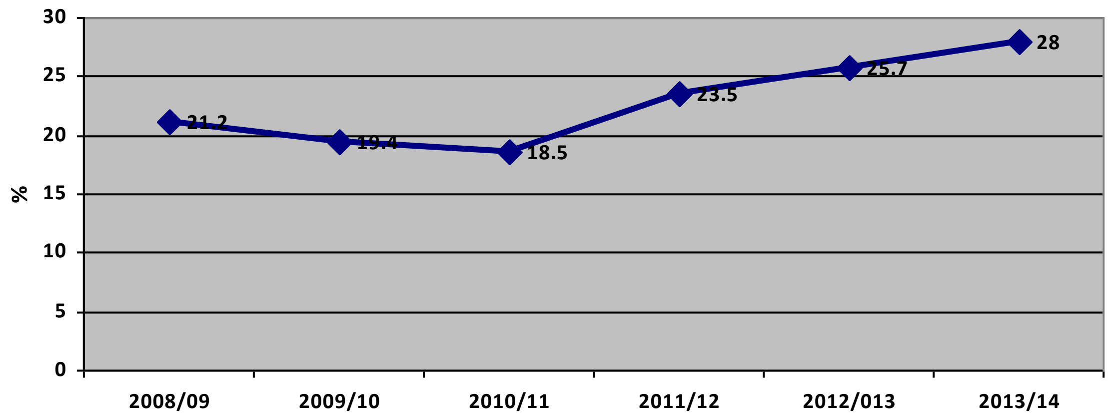
4 Empirical Analysis of the Role of Remittance

Chapter four runs an experiment around the effects of remittance inflow on Gross Domestic Product (GDP). An econometric analysis is conducted based on five controlled variables, i.e. GDP, remittances inflow, Official Development Grant (ODG), Foreign Direct Investment (FDI) and national revenue. Also, qualitative analysis of development and undertaking is viewed.

4.1 Remittance in Relation to GDP

The purpose of remittance significantly increases in the economic system because of increased share of GDP. This study's importance has a high relevance, so as to get out the remittance's share to the contribution to the economic development. However, ODG and FDI rates are lower as in an underdeveloped and poor country like Nepal, remittance inflow has increased so far. Remittance inflow does not cause any important role before the starting of trade liberalization, it appears as a separate branch of study in academia with increased use. Because of this, it has created a topic for discussions to evaluate the role and effects of remittances into the national economy.

FIGURE 2: REMITTANCE AS A PART OF GDP (%)



Sources: Economic survey 2014.

4.2 Remittance in Relation to Official Development Grant

Likewise, migration policy has been kept for a long time and remittance has been flowing largely through informal channels. Various factors caused to review the migration-development process. The volume of remittance is exceeding to ODA. Remittance income is serving small and poor nations as the main sources. Remittance income is reducing household poverty and is improving foreign currency reserves. It is not useful in the crisis situations and it cannot address the weakness of disaster victims and cannot hit the root causes of conflicts. ((Nyberg-Sørensen, Ninna, Nicholas Van Hear and Poul Engberg-Pedersen., 2002)

Thus, remittance inflow is moving as the supplementary source of ODA in poor and developing nations since the remittance volume is increasing significantly. As the remittance funds grow on, the money has been available as an alternative source for trade and investment, which is more reliable than any other private flows and foreign investments.

Before liberalization, remittance was experienced as dependent on small economies such as Caribbean, Pacific, small island nations. The focus on remittance study has been changed in the background of liberalization context. Intellectuals, in this regard, focus on close effects of remittance in a world organization, interconnected with trade, aid, network, information, transportation and communication in the context of an open economy, size and touristy places. And, remittances make the main source of global and national investments utilizing human skills and gathering capital through interconnected networks. (Connell, J and D Conway; 2000).

4.3 Remittance in relation to FDI

FDI is taken as a suitable sort of capital inflow compared with other-other more volatile flows. It can offer the facility of technology, skills, and management to raise the productivity and growth. Furthermore, it could assist to ranging from a high level of stability, financial resource expansion, and positive productivity effects. In Nepal, FDI is more pursued since it causes an even more subservient role in the building up process. It is recorded that remittance flows to developing countries are estimated to have reached $406 billion in 2012, (World Bank, 2008). Remittances are the second largest source of foreign exchange earnings for developing countries after Foreign Direct Investment (FDI). There is a substantial relationship between high investment rates and substantial development. FDI is required by developing countries as a means of complementing levels of domestic investment, as well as How technology, business practice, access to foreign markets, increased employment opportunities, and enhanced living and environmental measures.

Social network theory holds of that migration and remittance has links with many primitive and regulatory factors to influence one another i.e. opens service to trade and social web. Trade, investment (FDI) and labour mobility as a means of distribution of technology and resource which are essential for growth of GDP (Thorbecke and Nissanke 2008). ODA and FDI support for development fund. The development resource gap shows shortages because of insufficient revenue surplus. Revenue surplus shows that the internal resources are hardly available for development purpose because of high recurrent expenditure. It is more unstable if repayment amount and the debt burden are to be derived from the gross. Foreign aid is critical in this situation which has been dominated by ODA and politicized after 2000 so that it is entirely ineffective for developmental activities because of poor capability, irresponsible policy and corruption. Remittance inflow has appeared ahead choice to seek effects of the national economy. (Pyakural, 2003)

Chami et.al (2009) suggests that remittances have a substantial impact on smoothing macroeconomic fluctuations in recipient states, concluding that remittances can be utilized as a stabilizing tool. Remittances create important sources of foreign exchange earnings for many households in producing countries. While remittances cannot be considered as a substitute for FDI and other official development aid, it may comfort short-run foreign exchange limitations at times other financial flows decline due to extraneous agents. Remittances have constituted an important stimulus to domestic demand.

There is a strong relationship between high investment rate and economic growth. FDI brings in financial resources and it is more static and easier for commercial debt. FDI can attract and support the transference of managerial skills and advanced technical knowledge. Improved and adaptable skills and new organizational techniques and management practices can yield competitive benefits for developing country economies, as well as help, maintain employment as economic and technological conditions change.

FDI through the natural processes of transnationals can provide improved access to export markets both for goods and services that are already made in developing nations, helping them shift from domestic-only output to international markets. The export expansion offers multiplier benefits in terms of technological learning, the realization of economies of scale, competitive stimulus and market intelligence.

4.4 Remittance in Relation to FDI and ODG

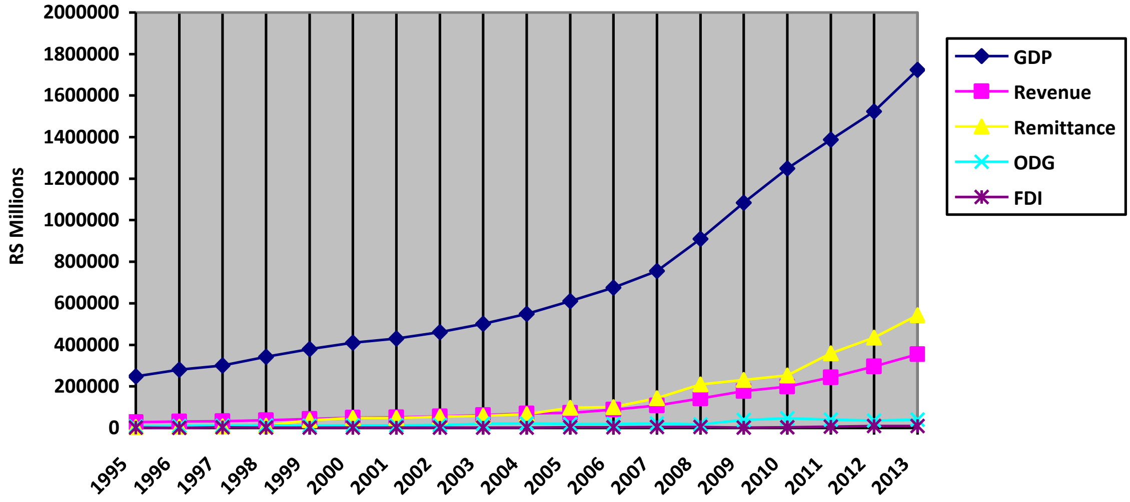
Remittances inflow has a close relation to FDI and ODG in terms of their nature and objectives. They are major external sources to fulfil the resource gap of Nepal. Since 1990, Nepal has trusted on international capital flows, making remittance the largest outside source to figure out accurately, i.e. 65 billion NRs in ten years (1995 to 2005). FDI on the other hand is not getting motion in Nepal. (Gaudel, 2006). Hence, Nepal is facing grave challenges to fulfil development resources with those less attracted FDI and ODA. Remittance impact on economic stability is in higher magnitude and significant stable among increasing rates of ODA and FDI. (Chami et.al.2008).

4.5 GDP, Remittance, ODG and FDI relation

This figure indicates the increasing trend for the five variables, i.e. GDP, remittance, revenue, official development grant and foreign direct investment in the economic market of Nepal. It shows GDP and remittance inflow starting to increase after 1998. Hence, remittance trend has steadily gained a motion after 2005 while remittance inflow has exceeded at internal resources i.e. revenue.

Nepal adopted open economic policy since 1990. Data clarifies constant growth on two variables i.e ODG and FDI. There was a some riot & movement around 1990 but it could not address the problems of rural people, people got frustrated and political issue resulted in an internal conflict in 1996, and caused internal insecurity and people moved to abroad as workers. The fast growth of remittance data illustrated in the figure that supports this argument in Nepal. From 1964 to 2015.

FIGURE 3: GDP, REMITTANCE, ODG AND FDI RELATION



An inflation rate of Nepal is 8.36 in average. The inflation rate and trade insufficiency are increasing with remittances along with GDP rates. The number of the migration rate for work is increasing every year. The government of Nepal estimated that the poverty level would jump from 19.3 percentage to 35.3 percent if remittances stopped. The graph shows that the annual remittance contribution to GDP has been increasing since 2011. It represented a 25.7 percent share in 2012/013 and a 28 percent during the fiscal of 2013/0114. However, the data on remittances is not distributed in terms of migrant workers and other inflow of remittances (such as from students abroad who work part-time or migrants who send money home to their parents). Hence, it is hard to see the direct remittance from labor migrants in all destination countries. According to the government data, NR 40,600 are remitted per household per year on average. From a household budget survey, it conducted in 2008, the Nepal Rastra Bank found that remittances were used largely to purchase land and a house (at 49 percent of respondents), followed by repayment of the debt (25 percent), savings in a bank (11 percent), education, health and other (9 percent), social work (3 per cent) and other investment (2 percent).35 The survey also explored the medium of transfer of remittances and found that 43.8 percent of remittances were sent through money transfer, followed by Hundi (28.9 per cent), a bank (21.7 percent) and other (5.6 percent). The survey findings also indicated that the inflow of remittances through official channels is smaller than through informal channels. Based on the findings, the Nepal Rastra Bank initiated a campaign to encourage all labor migrants to send remittances through normal channels.

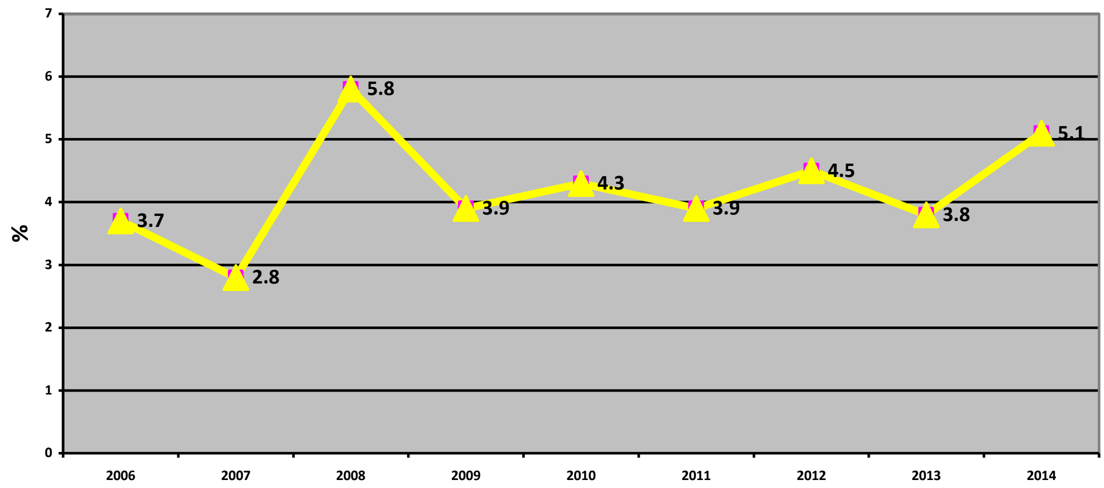
ODA is a crucial investment as long term, comfortable and flexible resources to the government in comparison to private flow. The government could use ODA to materialize national resources to break poverty trap and start up from infrastructure development. Rather the question is how to maximize all of such resources combining together until internal resources and foreign direct investment could sustain. Thus, remittances can be regarded as the development option, a product resulted from migration impact as characterized ―5T's‖-remittance transfers, transport, tourism, telecommunication and trade by Orozco and Guamizo (2003). In this way, migrants not only bring resources but may increase demand of these sectors and insist more power to purchase them as local goods and services.

BOP situation after 2001 while the remittances inflow has a steady rise because of favorable foreign currency reserve to import the necessary goods and services. Remittances inflow is not exclusively responsible for the increased foreign currency reserve, FDI in tourism and service sector also plays an essential role to increase foreign currency reserves ((Finance,Ministry, 2011). This new remittance trend has appeared in Nepal since 2000 because of some positive and negative factors, such as industrial environment growing unfriendly, worsening political instability and insecurity, demobilization of domestic resources unemployment and frustration among young people. (Pyakural et al. 2008).

While analyzing the relationship among the three important external sources of financing to GDP i.e. foreign development grant aid, remittance and FDI are interconnecting each other too. Nature and function are important to analyze the relationship between the variables. Nevertheless, the statistical analysis from 23 years (1990-2012) data also supports that there is a positive correlation coefficient to each other.

4.6 GDP growth rate:

FIGURE 4: GDP GROWTH RATE (%).



Source: Economic Survey 2012/013

The economic growth rate of Nepal decreased slightly in 2012/13 compared to the previous year. As per the primary estimations of Central Bureau of Statistics (CBS), real gross domestic product (GDP) grew by 3.6 percent at basic prices and 3.7 percent at producers' prices in 2012/13. During the previous year, real GDP growth rate was 4.5 percent at basic prices and 4.9percent in producers' prices. The increase rate of services sector slightly improved, whereas the factory farm and industrial sector has seen slow growth in the reassessment year.

4.7 Share of GDP % in South Asian countries

TABLE 2: SHARE OF GDP % IN SOUTH ASIAN COUNTRIES

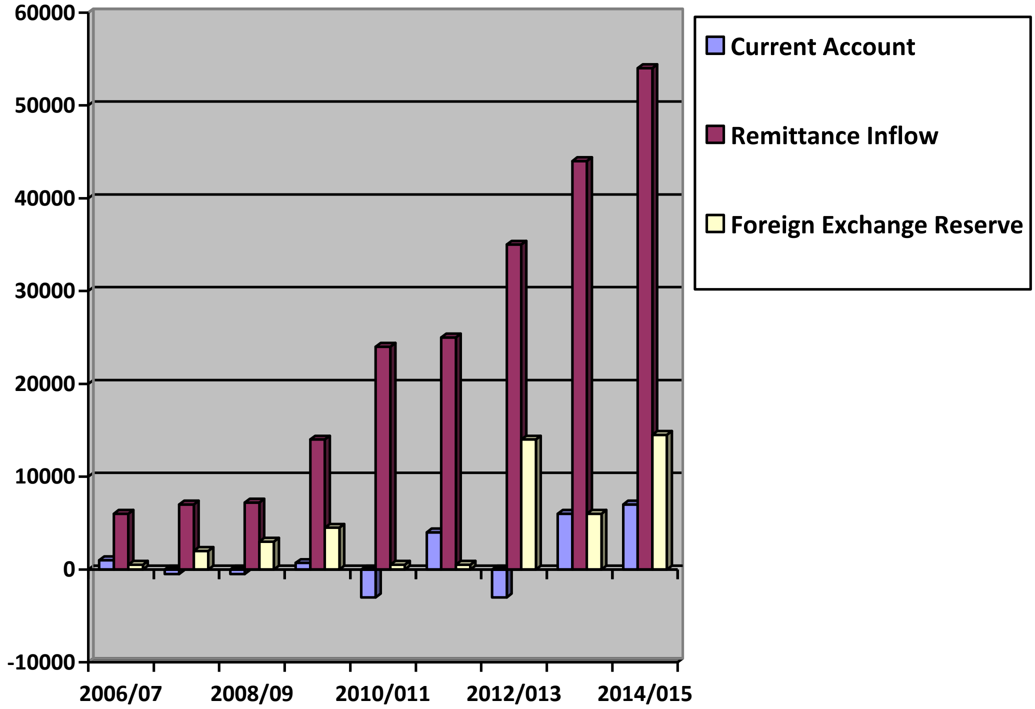
Remittance inflows	Share of GDP(%), 2012	2013e (US$ million)
Nepal	24.7	5210
Bangladesh	12.2	13,776
Sri Lanka	10.1	6,690
Pakistan	6.1	14,626
India	3.7	69,969
Bhutan	1.0	19
Maldives	0.1	3
Afghanistan	…	385

Source: Economic Survey 2013/014.

Above table clarifies that India received the highest amount of remittances in South Asia whereas Nepal was the highest recipient of a share of its GDP in 2012. As a share of total remittance inflow, India receives about 60.7% and Nepal 5.1% only. It shows that by reducing remittance costs and migrant recruitment costs $100 billion savings could be obtained in migrant annually by developing countries. The average growth of remittance inflows over the last five years has been around 14% and increased the number of migrant workers and the higher incentives to send more money back home. Increased remittance inflows are greatly improving banking sector liquidity in FY 2014.

4.8 Remittance Inflow

FIGURE 5: REMITTANCE INFLOW



Source: Economic Survey 2013/014.

This figure illustrates that workers' remittances raised from FY 2006/07 and reached up to Rs. 5,200 billion by 2015. The net transfer grew by 1.3 percent to Rs.420.66 billion in the review period as against a growth of 38.5 percent during the same period of the previous fiscal year.

Grants dropped by 24.7 percent during the review period while that of pension increased marginally by 0.3 percent. During the same period of the previous fiscal year, grants had increased steeply by 85.3 percent. Under Current Account, Rs. 7.63 billion was received as net capital transfer during the review period. Capital account had remained in a surplus of Rs.12.64 billion during the same period of the previous fiscal year. Under the financial account, foreign direct investment of Rs. 2.67 billion was recorded in the review period. This figure stood at Rs. 1.8 billion in the corresponding period of the previous year. Currency and deposit liabilities reached to Rs.6.43 billion during the review period. As compared to 2014, the total foreign exchange reserve rose by 6.1 percent to Rs. 705.73 billion in 2015. Such reserve had increased by 22.5 percent to Rs. 653.42 billion in the same period of the previous year. Reserve with Nepal Rastra Bank grew by 3.6 percent totaling Rs. 593.05 billion in 2015 as against Rs. 572.40 billion in 2014. Likewise, the reserve with banks and financial institutions has grown by 21.2 percent to Rs.112.68 billion during the review period.

4.9 Correlation of GDP, Remittance, Revenue, ODG and FDI

Correlation is a measure of the relationship between two variables. It can indicate a predictive relationship that may applied in practice.

TABLE 3: CORRELATION OF GDP, REMITTANCE, REVENUE, ODG AND FDI

Coefficients	GDP	ODG	FDI	Revenue	Remittance
GDP	1.0000				
ODG	0.9670	1.0000			
FDI	0.7738	0.6568	1.0000		
Revenue	0.9900	0.9501	0.8127	1.0000	
Remittance	0.9818	0.9231	0.8351	0.9954	1.0000

Source: calculated data using Gretl and result in Appendix.

Above result shows the multiple correlations has positive results on external and internal resources. i.e. FDI (0.77), official grant (0.96), remittance (0.98) and internal revenue (0.99). With the GDP, they have highly positive correlation coefficient. The correlation among remittance, foreign aid and FDI have also positive coefficients. While the positive correlation with trade gap, remittances option deals with the unfavorable situation in the economy because remittance is not inspiring economic growth in comparison to FDI. Indeed, remittances do support in the critical economic situation.

4.10 Regression analysis

TABLE 4: CALCULATION OF REGRESSION ANALYSIS MODEL 01

Variable	coefficient	Standard error	t-stat
Constant	319989	24181.4	13.23***
Remittance	2.85627	0.115559	24.72***
F value	610.9266		
DW coefficient	0.797754		
R^2	0.972927		
Adj.R^2	0.971334		

Source: Author's calculation by using Gretl software

In this model the dependent variable is GDP. Here, the coefficient of variable shows that how these variable influence the dependent variable i.e. coefficient of remittance (2.856) means that if remittance rises by 1 rupees then the GDP increases by 2.85 rupees. The economic interpretation of R^2 is that these variables influence GDP by 97.29%. D=0.9714 means that there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

TABLE 5: CALCULATION OF REGRESSION ANALYSIS MODEL 2

Variable	coefficient	Standard error	t-stat
Constant	229230	33890.1	6.764***
Remittance	2.33708	0.272958	8.562***
ODG	9.18961	1.95871	4.692***
FDI	-11.6442	10.6711	-1.091
F value	722.1140		
DW coefficient	1.134693		
R^2	0.993123		
Adj.R^2	0.991748		

Source: Author's calculation by using Gretl software

Here the dependent variable is GDP. So the regression model shows that FDI is negatively influenced while ODG and remittance have a positive influence on GDP. The coefficient of each variable shows that how these variable influence the dependent variable. i.e. coefficient of remittance 2.33 means that if remittance goes up by 1 rupees then the GDP increases by 2.33 rupees. The economic interpretation of R^2 is that these variables influence GDP by 99.31 percent. D=1.13 means there is a positive autocorrelation among the disturbances. The t value of remittance indicates that it is statistically significant.

TABLE 6: CALCULATION OF REGRESSION ANALYSIS MODEL 03

Variable	coefficient	Standard error	t-stat
Constant	268230	46459.7	5.773***
Remittance	3.75792	1.20742	3.112 ***
ODG	11.3741	2.64541	4.300***
FDI	-12.6555	10.5455	-1.200
Revenue	-2.54314	2.1068	-1.207
F value	558.4512		
DW coefficient	1.540915		
R^2	0.993772		
Adj.R^2	0.991992		

Source: Author's calculation by using Gretl software

Here the dependent variable is GDP. So the regression model shows that FDI and revenue are negatively influenced while ODG and remittance have a positive influence on GDP. The coefficient of each variable shows that how these variable influence the dependent variable. i.e. coefficient of remittance 3.75 means that if remittances increase by 1 rupees than the GDP rises by 3.75 rupees. The economic interpretation of R^2 is that these variables influence GDP by 99.37 percent. D=1.54 means there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

TABLE 7: CALCULATION OF REGRESSION ANALYSIS MODEL 04

Variable	coefficient	Standard error	t-stat
Constant	150993	34174.9	4.418***
ODG	7.03445	2.82506	2.490**
FDI	-3.76745	12.7566	-0.2953
Revenue	3.84949	0.589607	6.529***
F value	469.4856		
DW coefficient	0.925340		
R^2	0.989462		
Adj.R^2	0.987355		

Source: Author's calculation by using Gretl software

Here the dependent variable is GDP. So the regression model shows that FDI is negatively influenced while ODG and revenue have a positive influence on GDP. The coefficient of each variable shows that how these variable influence the dependent variable. i.e. coefficient of revenue is 3.849 means that if revenues increase by 1 rupees than the GDP rises by 3.849 rupees. The economic interpretation of R^2 is that these variables influence GDP by 98.94 percent. D=0.925 means there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

1. Notes: * means significant at the 10% level, ** means significant at the 5% level /*** means significant at the 1% level.

R^2= degree of explanation of the dependent variable;

Adj-R^2= proportion of variation adjusted to the degrees of freedom;

F= F statistic for the joint significance of all coefficients;

DW= Durbin-Watson statistics for the presence of autocorrelation and *Gretl* program has been applied to the econometric analysis.

2. The critical value of F is far low. It means the chance of Prob>F = 0.0000. So, an alternative hypothesis is accepted. Hence, there is remittance and other variables (model as a whole) have effects on dependent variable (GDP).

Sources: Data from different sources calculated from table one and detail results in the appendix.

From the above-mentioned information, remittance is supporting the growth of the GDP. The real GDP growth shows that remittance has a little effect, from 2001 to 2008 the rate was decreased by 5.60 to 4.70. FDI volume is 8.5 which is 3.5 times lower than ODA. Although, economic growth is slowing down and remittance and other effects fail to verify directly due to political instability. Moreover the use of remittance, it does not enhance countries competitiveness. The productive workforce should use at home (Nepal) for maximizing the real value-add on national production factor so that industrial base could be established. The government should have to make a strong policy to manage remittance flow and have to use it in the productive sector.

4.11 Calculation of regression analysis results (Logged value)

TABLE 8: CALCULATION OF REGRESSION ANALYSIS RESULTS (LOGGED VALUE) MODEL 01

Variable	coefficient	Standard error	t-stat
Constant _l	8.98702	0.323128	27.81***
Rmittance_l	0.390372	0.0288562	13.53***
F value _l	183.0125		
DW coefficient	0.375429		
R^2	0.915005		
Adj.R^2	0.910006		

Source: Author’s calculation by using Gretl software

Here the dependent variable is log (GDP). The coefficient of variable shows that how these variable influence the dependent variable i.e. coefficient of remittance (0.390372) means that if remittance rises by 1 rupees then the GDP increases by 0.390 rupees. The economic interpretation of R^2 is that these variables influence GDP by 91.50%. D=0.3754 means that there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

TABLE 9: CALCULATION OF REGRESSION ANALYSIS RESULTS (LOGGED VALUE) MODEL 02

Variable	coefficient	Standard error	t-stat
Constant	5.20404	0.563200	9.240***
Remittance_l	0.162277	0.0352623	4.602***
ODG_l	0.524922	0.0858745	6.113***
FDI _l	0.146742	0.0428846	3.422***
F value	254.5519		
DW coefficient	2.151495		
R^2	0.980736		
Adj.R^2	0.976883		

Source: Author's calculation by using Gretl software

Here the dependent variable is log (GDP). The coefficient of variable shows that how these variable influence the dependent variable i.e. coefficient of remittance (0.162277) means that if remittance rises by 1 rupees then the GDP increases by 0.162 rupees. The economic interpretation of R^2 is that these variables influence GDP by 98.07%. D=2.151 means that there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

TABLE 10: CALCULATION OF REGRESSION ANALYSIS RESULTS (LOGGED VALUE) MODEL 03.

Variable	coefficient	Standard error	t-stat
Constant	5.08687	0.189036	26.91 ***
Remittance_l	0.0548639	0.0153662	3.570***
ODG_l	0.0982587	0.0484821	2.027*
FDI_l	0.000463049	0.0196333	0.02358
Revenue_l	0.588150	0.0537857	10.94 ***
F value	1729.990		
DW coefficient	1.630778		
R^2	0.997981		
Adj.R^2	0.997404		

Source: Author's calculation by using Gretl software

Here the dependent variable is log (GDP). The coefficient of variable shows that how these variable influence the dependent variable i.e. coefficient of remittance (0.0548639) means that if remittance rises by 1 rupees then the GDP increases by 0.054 rupees. The economic interpretation of R^2 is that these variables influence GDP by 99.797%. D=1.63 means that there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

TABLE 11: CALCULATION OF REGRESSION ANALYSIS RESULTS (LOGGED VALUE) MODEL 04

Variable	coefficient	Standard error	t-stat
Constant_l	4.67473	0.199903	23.39***
ODG _l	0.0744441	0.0641256	1.161
FDI _l	-0.0165497	0.0254338	-0.6507
Revenue_l	0.710910	0.0552322	12.87***
F value _l	1291.167		
DW coefficient	1.096226		
R^2	0.996142		
Adj.R^2	0.995371		

Source: Author's calculation by using Gretl software

Here the dependent variable is log (GDP). The coefficient of variable shows that how these variable influence the dependent variable i.e. coefficient of revenue (0.710) means that if remittance rises by 1 rupees then the GDP increases by 0.710 rupees. The economic interpretation of R^2 is that these variables influence GDP by 99.61%. D=1.09 means that there is a positive autocorrelation among the disturbances. The t value of remittance shows that it is statistically significant.

Notes: * means significant at the 10% level, ** means significant at the 5% level /*** means significant at the 1% level

R^2= degree of explanation of the dependent variable;

Adj-R^2= proportion of variation adjusted to the degrees of freedom;

F= F statistic for the joint significance of all coefficients;

DW= Durbin-Watson statistics for the presence of autocorrelation and *Gretl* program has been applied to the econometric analysis.

The critical value of F is far low. It means the chance of Probability>F = 0.0000. So, the alternate hypothesis is accepted. Hence, there is remittance and other variables (model as a whole) have effects on dependent variable (GDP).

Rem t-value falls within the critical t-value in model two and three, hence, it has accepted the null hypothesis. However, model one is higher than critical standard t-value. Thus, there is positive effect as a whole model but individually the results are not consistent. Hence, remittance has individually positive effects on GDP in model one only.

Sources: Data from different sources logged and calculated; descriptions of variables are in the appendix.

In comparison, the improved results show that ODG and FDI have slightly less contribution than remittances though remittances contribution is very low compared to revenue. Thus, from above table(s), there is a contradiction in the individual results but reliability in the overall model that shows positive effects of remittance on GDP. So, we cannot reject the effects of remittance even if it is insufficient.

4.12 Test of economic variables

4.12.1 Normal distribution test

TABLE 12: NORMAL DISTRIBUTION TEST

Jarque-Bera test	
p-value = 0.153622	$\alpha = 0.05$

Source: Author's calculation by using Gretl software.

To test whether there is a normal distribution of residuals in the model Jarque-Bera test is used .The Gretl output is used in this project.

The hypotheses to test normality are H_0: normal distribution of random variables and H_1: no normal distribution of random variables at $\alpha = 0.05$. The p-value is equal to 0.153622, which is higher than the level of significance, therefore, the null hypothesis cannot be rejected. The random variables are normally distributed for this model.

4.12.2 Homoscedasticity test

TABLE 13: HOMOSCEDASTICITY TEST

Breush-Pagan Test	
p-value = 0.907148	$\alpha = 0.05$

Source: Author's calculation by using Gretl software.

To test if the variance of residual variables is constant and finite, we can use for example Breusch-Pagan test or White test. The White test is more general and it is used for models with more than 30 observations. The Breusch-Pagan test is applied in this project to detect heteroscedasticity (the opposite of homoscedasticity) using Gretl software.

The hypotheses to test homoscedasticity are H_0: homoscedasticity in the model and H1: heteroscedasticity in the model at $\alpha = 0.05$. The p-value is equal to 0.907148, which is lower than the level of significance, therefore, we reject the null hypothesis.

4.12.3 Test for autocorrelation:

TABLE 14: TEST OF AUTOCORRELATION

Breush-Godfrey Test	
p-value = 0.349	$\alpha = 0.05$

Source: Author's calculation by using Gretl software.

The first detection of autocorrelation calculated in this study showed that the Darwin-Watson test is not sufficient for identification of autocorrelation. Another test has to be used, such as Breusch-Godffrey test or Cochrene-Orrcute method. Breusch-Godffrey test is used to detect autocorrelation in the model in this project. The hypotheses to test autocorrelation are H_0: no autocorrelation in the model, H_1: autocorrelation in the model at $\alpha = 0.05$. The p-value is equal to 0.349, which is higher the level of significance, therefore, we cannot reject the null hypothesis. There is no autocorrelation in the model.

5 Results and Discussion

It is clear that, worker's remittance inflow has positive effects on growing GDP to some extent in Nepal. The economic growth may not have effects because remittances fund has not any value added from the government as well as private sector. Rather, it has been invested in real estate and luxury items. Education plays a vital role in shifting economy, as well as to uplifting their status. This study shows that it pushes low skilled and uneducated human resources for the support of family. A large amount of remittance money has poured into the non-productive area. Government policy has not yet concentrated on education, training and managing labour participation for the international market. Remittance policies are concerned to having right direction of remittance use. Due to poor management of foreign employment initial cost is relatively higher. Similarly, the cost of fund transfer is costly and risky because of poor banking service system. (Pant, 2008). There is not any government policy for the use of remittance money, and, money will divert to a non-productive area like real estate sector, ornaments and gambling. (Chami et.al. 2008). At this stage, government policy should be active and strong to accumulating capital through remittances saving. Crafting favourable policy may attract the remittances fund for development purposes. Foreign direct investment and internal resources mobilization are two aspects to reduce the dependency on remittances income, the growth depends on the capital accumulation Process since the total factor productivity has not contributed to pushing forward the economic growth of Nepal (Khatiwada 2002, 31-43). It depends on government policy to use remittance in the productive sector. However, remittance has not contributed yet significantly for economic growth largely because of faltering policy in the use of productive sector. Moreover, workers' remittances fund depends heavily on low-skilled labour force participation. Policy factor is always vital to get desired effects from remittances. The government of Nepal has provisioned a subsidized loan for foreign employment to get relief (MOF 2009b) from an alarming unemployment rate of 46 percent (CIA 2009). The promotion policy is not sufficient for the long-term growth. Though poverty has reduced, economic growth has not been increasing so far in Nepal. The average growth of last 30 years has about four percent (NPC 2002). It has declined to 2.5 percent in FY 2006/07 in Nepal (NPC 2007, 29).Government policy is crucial to train the low skilled labours before sending them abroad, provide them to learn foreign knowledge and skill. Thus, the hypothesis of remittances fund for development and skilled labour participation have positive impacts.

6 Conclusion

Remittance has been developing as a major resource for poor people. Resource factor has an important role in generating the value in the economy. Remittance inflow does support to collect the necessary capital. Although, high geopolitical restriction of Nepal, resource accumulation is very important for the long-term growth to overcome these problems. Also, Nepal is getting support since 1990 as it entered to economic liberalization which attracts foreign investment.

There is not any solid social theory that could have managed the remittance economy for the benefit of a specific community, region or a nation. But, many studies continuously go through researches and experiments which are helpful to overcome the policy making process.

This study is based on the findings that verify in the specific context of Nepal along with own experiments. This study is mainly concerned with physical and human capital resources, where social capital is described by social network theory. Human resource is an important resource which covers the physical resource, knowledge, skill and technology. Skilled emigrant's workers are comparatively competitive in the international market so that their return scheme becomes essential. Qualified persons such as doctor, engineer, intellectuals, scholars, scientists and economists are energetic in society to craft a suitable policy on utilizing the acquired amount of remittances and other receipts. Furthermore, skilled labour force participation is essential to acquire knowledge along with fund generation.

Policy implementation is crucial to change the current divergent practice into the convergent approach. Controlling the migration could be costly for developing country like Nepal. Vocational training and education are basic criteria before departure for foreign employment. By counselling, developing schemes and providing investment friendly environment could be other requirements for a better economy.

Remittance has pushed towards more consumption, not only in names of education, health and basic needs but also in real estate, luxury goods, ornaments, casino and others non-productive sectors. Proper and good investment environment should be created in the sector of health, education.

Remittance policy should aim to attract technology and skills. Nepal has lost in the sustainable recovery of opportunity cost, from sending active human resource. It depends on how the government could create a beneficial environment at home to attract them. The policy option may decide to increase the number and the quality of returnees i.e. the number with skills and technologies they gain while serving abroad for a long time. So the managed foreign labour employment policy helps to restructure the economy in the long run for economic growth. Remittances support economic growth if capital, enhancing and returning emigrant workers together. Which ultimately, improves the factor productivity of Nepal.

Thus, workers remittance has positive effects on the GDP growth. Remittance proves a sustainable and reliable source for the government to fulfil the resource gap. Remittance has provided acute support for governmental fundraising. However, the political stability and policy strategy are important factors for achieving the economic growth as well.

7 Recommendations

Worker's remittances income has the positive influence on the increase of GDP but the economic growth is at the level of maintaining. This study shows that the government policy is vital to use available remittances fund for productive use. There are two options to improve the quality of human resources, extracting global resources without reducing the domestic economic efforts and the policy to train the unskilled labours, making capable them to learn foreign knowledge and skill before sending abroad is very important.

Though the management of remittance inflow is difficult, it can still serve the interest of poor people in a developing country. Remittance income is transferred through informal channels in the absence of efficient banking and non-financial channel. So, further study should be on formalizing the remittance through available electronic banking, electronic transfer and its impact on remittance economy. It is believed that the application of electronic banking reduces the cost of remittance.

Remittance amount have to finance into the field of industrialization of agricultural and other small enterprises, which makes the national economy more sustainable. It can make a positive change in the economy for that, the government has to provide a skills development training. For this purpose, following activities have to be performed, i) Provision of mobile training centre should be conducted to focusing a people in the remote areas; ii) Foreign employment welfare fund should be used to provide appropriate training to develop entrepreneurship of the returnee migrants and remittance recipients; : iii) Pre-departure skill development training should be provided to the foreign employee that they can earn more and send more remittance that can be used for income generating activities not only for the daily consumptions and repay loan; iv) foreign employment should be made accessible for the poor people providing loan without collateral from the banking channel with least interest rate. Finally, foreign employment should be optional for migrants rather than compulsion for the survival of their families. An effective use of remittance in the productive sector creates job opportunities in the country. This leads to lowering dependency on remittances and the sustainable economic growth and development.

Thus, this study has to work out a balanced judgment of the econometric analysis as well as paid attention on such overlooked aspects that carried out by quantitative assessment. It suggests the revision over the claim that remittances income has a huge impact on economic growth.

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9 Appendix

List of Supplements…

For Multicollinearity test :

```
Correlation Coefficients, using the observations 1995 - 2013
5% critical value (two-tailed) = 0.4555 for n = 19

          GDP_    Internal_Rev_     Remittance             ODG
        1.0000           0.9905         0.9864          0.9394  GDP_
                         1.0000         0.9973          0.9105  Internal_Rev_
                                        1.0000          0.8867  Remittance
                                                        1.0000  ODG

          FDI_
        0.8377  GDP_
        0.8763  Internal_Rev_
        0.8948  Remittance
        0.6734  ODG
        1.0000  FDI_
```

```
Model 1: OLS, using observations 1995-2013 (T = 19)
Dependent variable: GDP_

                coefficient    std. error    t-ratio    p-value
  --------------------------------------------------------------
  const         319989         24181.4        13.23     2.22e-010 ***
  Remittance         2.85627       0.115559   24.72     9.17e-015 ***

Mean dependent var   727395.7   S.D. dependent var   455518.4
Sum squared resid    1.01e+11   S.E. of regression   77123.69
R-squared            0.972927   Adjusted R-squared   0.971334
F(1, 17)             610.9266   P-value(F)           9.17e-15
Log-likelihood      -239.7133   Akaike criterion     483.4267
Schwarz criterion    485.3156   Hannan-Quinn         483.7463
rho                  0.585021   Durbin-Watson        0.797754
```

```
Model 3: OLS, using observations 1995-2013 (T = 19)
Dependent variable: GDP_

                   coefficient    std. error    t-ratio   p-value
  ---------------------------------------------------------------
  const            268230         46459.7        5.773    4.82e-05 ***
  Remittance            3.75792       1.20742    3.112    0.0076   ***
  ODG                  11.3741        2.64541    4.300    0.0007   ***
  FDI_                -12.6555       10.5455    -1.200    0.2500
  Internal_Rev_        -2.54314       2.10686   -1.207    0.2474

Mean dependent var   727395.7   S.D. dependent var   455518.4
Sum squared resid    2.33e+10   S.E. of regression   40762.70
R-squared            0.993772   Adjusted R-squared   0.991992
F(4, 14)             558.4512   P-value(F)           2.89e-15
Log-likelihood      -225.7536   Akaike criterion     461.5073
Schwarz criterion    466.2295   Hannan-Quinn         462.3065
rho                  0.211348   Durbin-Watson        1.540915

Excluding the constant, p-value was highest for variable 5 (FDI_)
```

```
Model 4: OLS, using observations 1995-2013 (T = 19)
Dependent variable: GDP_

                   coefficient    std. error    t-ratio   p-value
  ---------------------------------------------------------------
  const            150993         34174.9        4.418    0.0005   ***
  ODG                   7.03445       2.82506    2.490    0.0250   **
  FDI_                 -3.76745      12.7566    -0.2953   0.7718
  Internal_Rev_         3.84949       0.589607   6.529    9.54e-06 ***

Mean dependent var   727395.7   S.D. dependent var   455518.4
Sum squared resid    3.94e+10   S.E. of regression   51223.59
R-squared            0.989462   Adjusted R-squared   0.987355
F(3, 15)             469.4856   P-value(F)           4.78e-15
Log-likelihood      -230.7493   Akaike criterion     469.4986
Schwarz criterion    473.2763   Hannan-Quinn         470.1379
rho                  0.499613   Durbin-Watson        0.925340

Excluding the constant, p-value was highest for variable 5 (FDI_)
```

```
Model 4: OLS, using observations 1995-2013 (T = 19)
Dependent variable: l_GDP_

                    coefficient   std. error   t-ratio    p-value
  ---------------------------------------------------------------
  const              4.67473      0.199903     23.39     3.24e-013 ***
  l_ODG              0.0744441    0.0641256     1.161    0.2638
  l_FDI_            -0.0165497    0.0254338    -0.6507   0.5251
  l_Internal_Rev_    0.710910     0.0552322    12.87     1.65e-09  ***

Mean dependent var   13.32227   S.D. dependent var   0.602136
Sum squared resid    0.025175   S.E. of regression   0.040968
R-squared            0.996142   Adjusted R-squared   0.995371
F(3, 15)             1291.167   P-value(F)           2.55e-18
Log-likelihood       35.99038   Akaike criterion    -63.98077
Schwarz criterion   -60.20301   Hannan-Quinn        -63.34142
rho                  0.362013   Durbin-Watson        1.096226

Log-likelihood for GDP_ = -217.133

Excluding the constant, p-value was highest for variable 10 (l_FDI_)
```

OLS test for logged Model 3

```
Model 3: OLS, using observations 1995-2013 (T = 19)
Dependent variable: l_GDP_

                    coefficient   std. error   t-ratio    p-value
  ---------------------------------------------------------------
  const             5.08687       0.189036     26.91     1.87e-013 ***
  l_Remittance      0.0548639     0.0153662     3.570    0.0031    ***
  l_ODG             0.0982587     0.0484821     2.027    0.0622    *
  l_FDI_            0.000463049   0.0196333     0.02358  0.9815
  l_Internal_Rev_   0.588150      0.0537857    10.94     3.05e-08  ***

Mean dependent var   13.32227   S.D. dependent var   0.602136
Sum squared resid    0.013177   S.E. of regression   0.030679
R-squared            0.997981   Adjusted R-squared   0.997404
F(4, 14)             1729.990   P-value(F)           1.09e-18
Log-likelihood       42.14068   Akaike criterion    -74.28137
Schwarz criterion   -69.55917   Hannan-Quinn        -73.48219
rho                  0.161609   Durbin-Watson        1.630778

Log-likelihood for GDP_ = -210.982

Excluding the constant, p-value was highest for variable 10 (l_FDI_)
```

```
Model 2: OLS, using observations 1995-2013 (T = 19)
Dependent variable: l_GDP_

                  coefficient   std. error   t-ratio   p-value
  -----------------------------------------------------------
  const            5.20404      0.563200       9.240    1.40e-07 ***
  l_Remittance     0.162277     0.0352623      4.602    0.0003   ***
  l_ODG            0.524922     0.0858745      6.113    1.99e-05 ***
  l_FDI_           0.146742     0.0428846      3.422    0.0038   ***

Mean dependent var   13.32227   S.D. dependent var   0.602136
Sum squared resid    0.125721   S.E. of regression   0.091550
R-squared            0.980736   Adjusted R-squared   0.976883
F(3, 15)             254.5519   P-value(F)           4.39e-13
Log-likelihood       20.71239   Akaike criterion    -33.42478
Schwarz criterion   -29.64703   Hannan-Quinn        -32.78544
rho                 -0.150502   Durbin-Watson        2.151495

Log-likelihood for GDP_ = -232.411
```

```
Model 1: OLS, using observations 1995-2013 (T = 19)
Dependent variable: l_GDP_

                  coefficient   std. error   t-ratio    p-value
  ------------------------------------------------------------
  const            8.98702      0.323128      27.81     1.29e-015 ***
  l_Remittance     0.390372     0.0288562     13.53     1.58e-010 ***

Mean dependent var   13.32227   S.D. dependent var   0.602136
Sum squared resid    0.554695   S.E. of regression   0.180635
R-squared            0.915005   Adjusted R-squared   0.910006
F(1, 17)             183.0125   P-value(F)           1.58e-10
Log-likelihood       6.611043   Akaike criterion    -9.222085
Schwarz criterion   -7.333207   Hannan-Quinn        -8.902412
rho                  0.812063   Durbin-Watson        0.375429

Log-likelihood for GDP_ = -246.512
```

Breusch-Pagan test for heteroskedasticity
OLS, using observations 1995-2013 (T = 19)
Dependent variable: scaled uhat^2

	coefficient	std. error	t-ratio	p-value
const	1.50853	1.88854	0.7988	0.4378
Internal_Rev_	-1.78599e-05	8.56417e-05	-0.2085	0.8378
Remittance	1.41022e-05	4.90804e-05	0.2873	0.7781
ODG	-2.35456e-05	0.000107533	-0.2190	0.8298
FDI_	3.22458e-06	0.000428663	0.007522	0.9941

Explained sum of squares = 2.03477

Test statistic: LM = 1.017387,
with p-value = P(Chi-square(4) > 1.017387) = 0.907148

Breusch-Godfrey test for first-order autocorrelation
OLS, using observations 1995-2013 (T = 19)
Dependent variable: uhat

	coefficient	std. error	t-ratio	p-value
const	-5185.74	47354.5	-0.1095	0.9145
Internal_Rev_	0.594109	2.24318	0.2649	0.7953
Remittance	-0.322737	1.27907	-0.2523	0.8047
ODG	-0.773265	2.82695	-0.2735	0.7887
FDI_	0.310422	10.6636	0.02911	0.9772
uhat_1	0.250514	0.297705	0.8415	0.4153

Unadjusted R-squared = 0.051655

Test statistic: LMF = 0.708096,
with p-value = P(F(1,13) > 0.708096) = 0.415

Alternative statistic: TR^2 = 0.981451,
with p-value = P(Chi-square(1) > 0.981451) = 0.322

Ljung-Box Q' = 0.942466,
with p-value = P(Chi-square(1) > 0.942466) = 0.332

Jarque- Bera test table

```
Test for normality of uhat3:

 Doornik-Hansen test = 8.15085, with p-value 0.016985

 Shapiro-Wilk W = 0.864511, with p-value 0.0116605

 Lilliefors test = 0.187187, with p-value ~= 0.08

 Jarque-Bera test = 3.74653, with p-value 0.153622
```

Table: GDP, Remittance, ODG and FDI after 1995 (In Rs.Millions)

Year	Gross Domestic Product	Internal Revenue	Remittance	Official Development Grant	Foreign Direct Investment
1995	248913	27893	4284	7583	2208
1996	280513	30374	5595	9743	757
1997	300845	32938	6988	10920	3316
1998	342036	37251	10315	11648	1151
1999	379521	42894	36818	11286	2184
2000	410194	48894	47216	12046	1494
2001	430397	50446	47536	12651	2137
2002	460325	56230	54203	13842	1361

2003	500699	62331	58588	19558	1584
2004	548485	70123	65541	21072	1429
2005	611118	72282	97689	18851	2606
2006	675859	87712	100145	18218	2356
2007	755257	107623	142683	20993	4070
2008	909528	142211	209700	17620	5142
2009	1083415	177991	231730	38545	1829
2010	1248482	198376	253550	45922	2852
2011	1387482	244374	359600	40810	6437
2012	1522853	296021	434600	35229	9195
2013	1724596	354500	543300	40000	9081

Sources: Data collected and calculated from different economic surveys (2012/013 and 2013/014), the ministry of Finance, Government of Nepal.