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The Impact of Remittances on Economic Growth in South Asia

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June, 2015

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Abstract

As in many developing nations, international migrant workers' remittances are playing and will continue to play, a key role in economies of South Asia. Remittances are increasingly becoming an important source of external financing in economy embarking for reducing poverty and enhancing development at macro as well as micro level. Its' contribution is important in earning foreign exchange, Balance of Payment support, boosting domestic aggregate demand, contributing to the GDP and stimulating of economic activities. The essence of this study is to examine the macroeconomic implications of cross-border remittances for economic growth prospects of South Asian economies; Bangladesh, India, Pakistan and Sri Lanka for the period, 1980-2012. The Random-effects panel model and OLS method are carried out for the empirical analysis. Using annual data from these countries, this study found that remittances contribute significantly to economic growth in Bangladesh and Pakistan in the short-run and in Sri Lanka in the long-run. There is no impact of remittances on economic growth in India.

The structure of the paper is as follows. The first chapter describes the overview of international migration of workers and remittances in South Asia. The second chapter examines the existing literature review on theoretical and empirical studies of remittances and economic growth. The third and forth chapters present the empirical models used in this study and

the results of the analysis, respectively. The paper ends with a conclusion and some policy implications of the findings of this study.

Key words: remittances, South Asia, International migration, economic growth, recipients, GDP per capita

Student Number: 2013-24001

Abbreviations and Acronyms

| | |
|------|---------------------------------|
| ADB | Asian Development Bank |
| WB | World Bank |
| BOP | Balance of Payments |
| ODA | Official Development Assistance |
| FDI | Foreign Direct Investment |
| OLS | Ordinary Least Square method |
| VECM | Vector Error Correction Model |
| ADF | Augmented Dickey Fuller test |
| GDP | Gross Domestic Product |

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CHAPTER ONE

Introduction

1.1 Background of the study

1.1.1 History and Trend in international migration, remittances and economic growth

Inward remittance flows to developing countries have grown steadily over the past 30 years. Global remittance inflows grew five-fold between 1980 and 2003 to reach US \$91 billion and rose thereafter to US \$333 billion by 2010 and US \$392 billion by 2013 (World Bank, 2013).

South Asia is a remittance economy. Among the regions in the world, South Asia is the second largest remittance recipient in 2009, following the East Asia and Pacific. The average annual growth rate of remittances was 39% from 2000 to 2008. In terms of origins of remittances to South Asia, the Middle East countries are the largest recipient of South Asian migrant workers and correspondingly, the amount of remittances originated from the three countries, UAE, Saudi Arabia, and Qatar are estimated to account over 60% of the total remittance inflow to South Asia.

India, Bangladesh, Sri Lanka, Pakistan and Nepal are major remittances receiving economies in the region. These countries send out a significant number of migrant workers annually who are spread all over the world and remittances sent by migrant workers have become a significant source of funds for economic development of these countries.

The export of labor from this region began in 1970s with the boost of oil rich economies in Middle East. Hence, Middle East countries are the main concentration of the migrant workers since 1970s. Majority of migrant workers from this region is housemaids and unskilled or low skilled workers. Women migrant workers are rapidly increasing as housemaids. Lack of adequate livelihood and employment opportunities at home is the prime driver for most such out-migration.

With the implementation of the economic liberalization program in India, the government lifted many regulations with regard to foreign exchange and travel abroad for work. As might be expected, a significant number of migrant workers began to travel to foreign countries, particularly to the Middle East. Moreover, the explosion in the information technology industry in the United States and other industrialized countries attracted a large number of South Asians, particularly Indians, to migrate to those countries. The overall consequence was a huge increase in the flow of remittances to South Asia.

Majority of Pakistanis settled in Western Europe, North America and also in oil producing Arab states (after 1973) is played an important role in Pakistan's economy and foreign exchange reserve. State Bank of Pakistan reported (2011) that the remittances sent to Pakistan by her migrant workers first time crossed US\$ 11 billion in the fiscal year 2010-2011 which is the highest amount in any fiscal year in the history of Pakistan. The main reason of this hike in remittances is due to an increase in worker

migration and higher skill levels of migrating workers have helped to drive and sustain the increase in remittances (World Bank 2011). Remittances inflow to Pakistan increases rapidly after 2000 and continue to register robust growth. Its' dependence on remittances, which are now nearly three times the level of international reserves, remains high. Actually in early 2000, Pakistan's foreign exchange system was liberalized, and since then spreads between the official exchange rate and the curb rate have been small. This may have resulted in a shift of remittance transfers from the Hawala (hundi) system to formal channels (Kock and Sun, 2011) in Pakistan.

Liberalization of economy of Sri Lanka in 1977, causing a surge in labour exports and thus remittances combined with government reforms of the exchange rate system during the same period resulting in a currency devaluation (Balakrishnan, 1980), an economic boom in the labour-scarce oil producing economies of the Middle East and the push factors of prolonged ethnic conflict and slow growth in the Sri Lankan rural economy explain the spiking nature of remittances in the late 1970s and growth thereafter (World Bank, 2004).

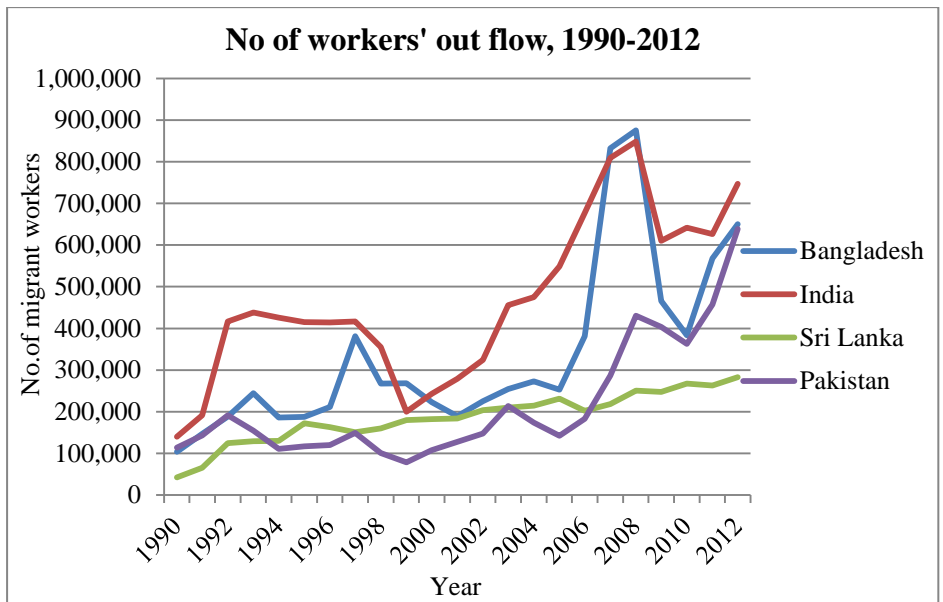
In 2013, over 2 millions Sri Lankans migrated for foreign employments. Recent trend is the estimated number of annual migrants is higher than the number of new entrants to the labor market. The bulk of such migrants are to be found in Middle East countries typically biased towards the categories of housemaid and low skilled workers. Female migrants made

up about 60-70 per cent of total migrants until 2005. But in recent years, the share of males leaving for foreign employments continue to increase as a result of effectiveness of the programs implemented by the Sri Lankan government to promote the migration of the skilled male workers, while discouraging female migration as housemaids. Skilled migrants estimated to make up about 25 per cent of total migrant workers and mostly seek better employments/financial opportunities abroad. Hence, the fundamental factor which fuels the growth of foreign employment earnings in Sri Lanka is the rapid increase of departures recorded over the past 20 years. In 2013, the total number of departures for foreign employments increased by 3.8 percent to 293,105 compared to 282,447 in 2012. The total private remittances increased up to about US \$ 6000 million in 2012 and it was 61.34 percent of total foreign exchange earnings of the country (Central Bank report, Sri Lanka- 2013).

Migration from Bangladesh and growth in remittances in its' economy go back to over the last three and a half decades starting from 1976. With nearly one half of Bangladesh's offshore labour employed in Saudi Arabia (Siddiqui, 2004), Bangladesh too experienced the benefits from growth in Western Asia during the 1970s. This explains their large growth in remittances during the late 1970s in line with the rising oil prices of the time. Bangladesh experienced a huge rise in the international migration during 2006 to 2008. Remittance inflows in the economy of Bangladesh are getting larger every passing year, matching with the increasing external

demand for its manpower over last decades. Indeed, a regular growth in the flow of remittances upended the development significance of remittances, both in social and economic sectors, in the eyes of policy strategists in Bangladesh.

Figure: 1



The formal remittance inflows to South Asia have been increasing from US \$16 billion in 2000 to US \$82 billion in 2010 and to US \$108 billion in 2012. It is represented a high proportion to India, Bangladesh, Pakistan and Sri Lanka as US \$103 billion in 2012 (World Bank report 2013).

India remains the largest recipient of officially recorded remittances in the world and received about US \$70 billion in remittances in 2013 (World Bank report-2013).

Pakistan and Bangladesh received remittances US \$15 billion and \$14 billion, respectively and rank seventh and eighth in the world in terms of volume of remittances they received in 2013 (World Bank report-2013).

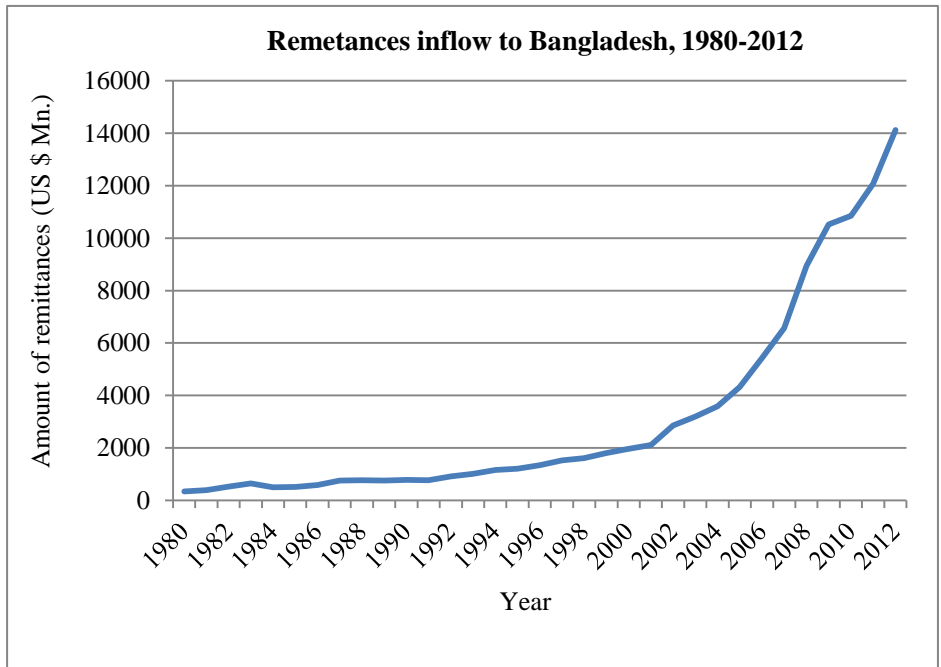
Table : 2 Remittances Inflows (US \$ Millions) 1980-2012

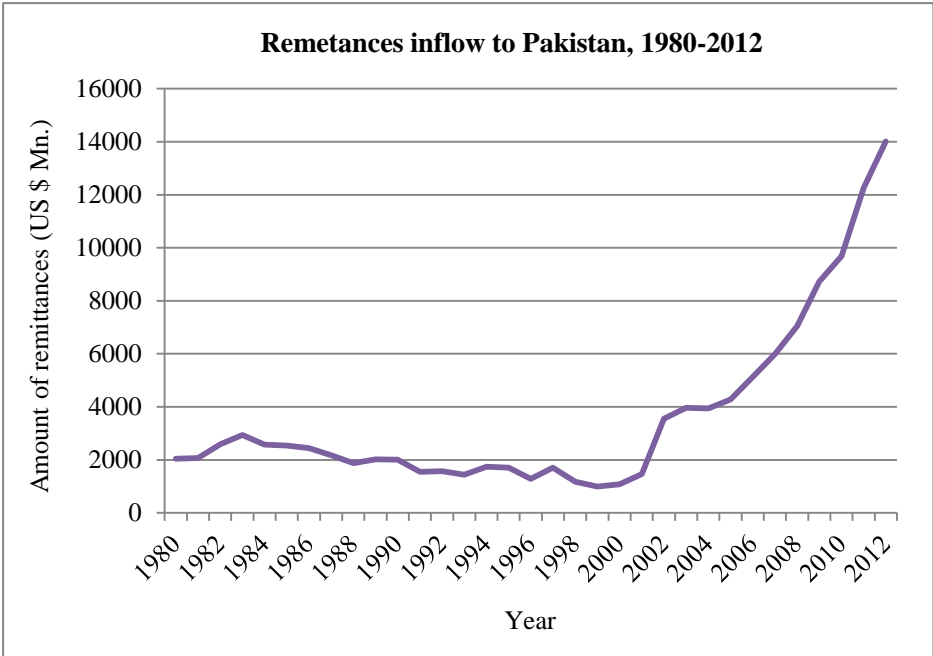
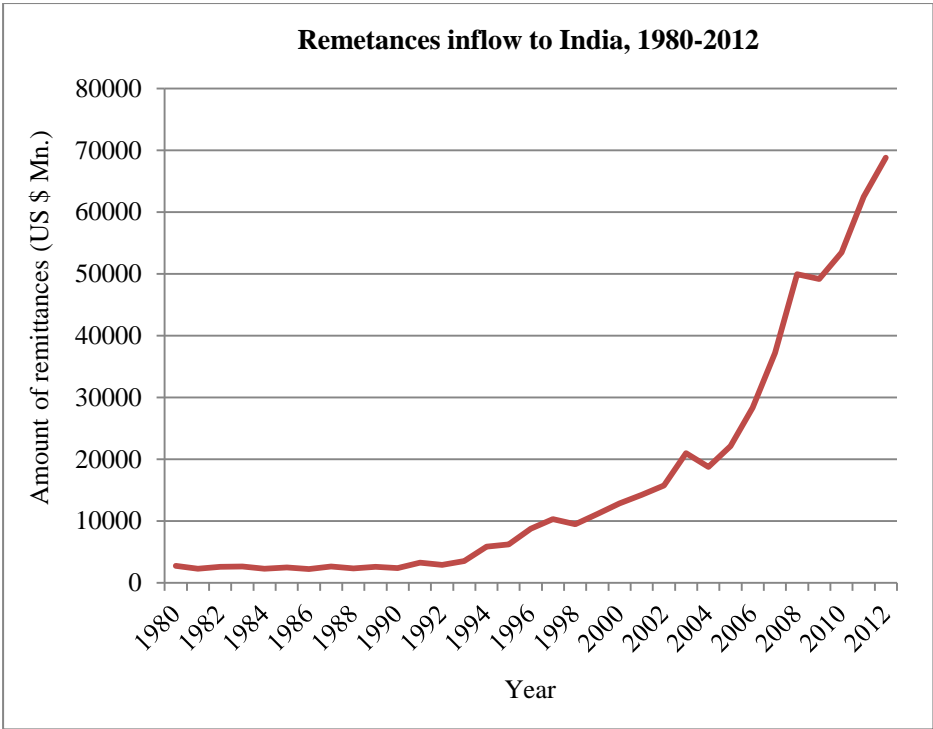
| Year | Bangladesh | India | Pakistan | Sri Lanka |
|------|------------|--------|----------|-----------|
| 1980 | 339 | 2,757 | 2,048 | 152 |
| 1981 | 381 | 2,301 | 2,067 | 230 |
| 1982 | 526 | 2,618 | 2,588 | 289 |
| 1983 | 642 | 2,660 | 2,940 | 294 |
| 1984 | 501 | 2,295 | 2,581 | 301 |
| 1985 | 502 | 2,469 | 2,537 | 292 |
| 1986 | 576 | 2,240 | 2,446 | 326 |
| 1987 | 748 | 2,665 | 2,181 | 350 |
| 1988 | 764 | 2,315 | 1,872 | 358 |
| 1989 | 758 | 2,614 | 2,017 | 358 |
| 1990 | 779 | 2,384 | 2,006 | 401 |
| 1991 | 769 | 3,289 | 1,549 | 442 |
| 1992 | 912 | 2,897 | 1,574 | 548 |
| 1993 | 1,007 | 3,523 | 1,446 | 632 |
| 1994 | 1,151 | 5,857 | 1,749 | 715 |
| 1995 | 1,202 | 6,223 | 1,712 | 809 |
| 1996 | 1,345 | 8,766 | 1,284 | 852 |
| 1997 | 1,526 | 10,331 | 1,707 | 942 |
| 1998 | 1,606 | 9,479 | 1,172 | 1,023 |
| 1999 | 1,807 | 11,124 | 996 | 1,072 |
| 2000 | 1,968 | 12,883 | 1,075 | 1,166 |
| 2001 | 2,105 | 14,273 | 1,461 | 1,185 |
| 2002 | 2,858 | 15,736 | 3,554 | 1,309 |
| 2003 | 3,192 | 20,999 | 3,964 | 1,438 |
| 2004 | 3,584 | 18,750 | 3,945 | 1,590 |
| 2005 | 4,315 | 22,125 | 4,280 | 1,976 |
| 2006 | 5,428 | 28,334 | 5,121 | 2,167 |

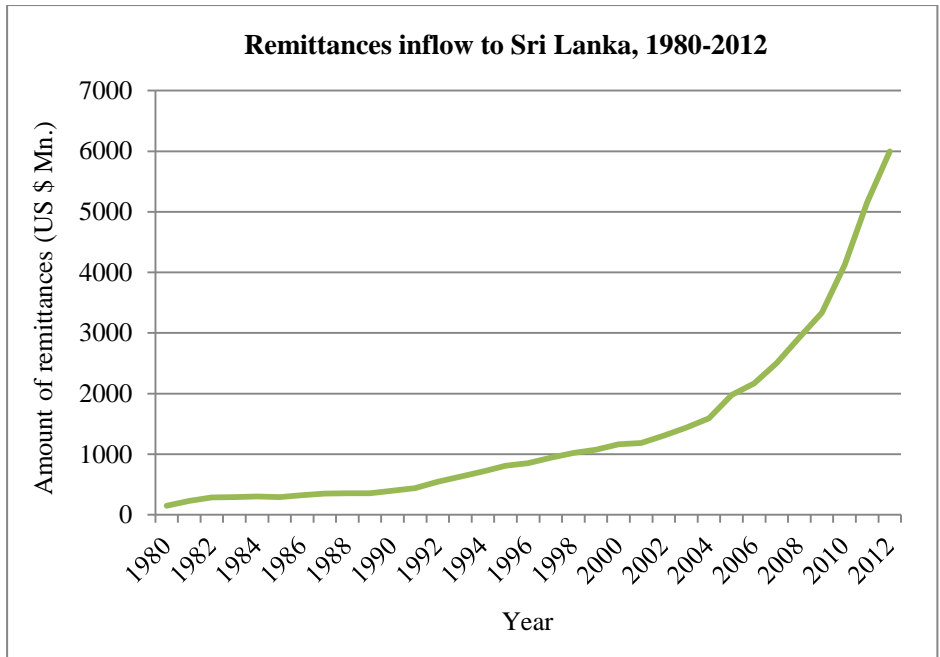
| | | | | |
|------|--------|--------|--------|-------|
| 2007 | 6,562 | 37,217 | 5,998 | 2,507 |
| 2008 | 8,941 | 49,977 | 7,039 | 2,925 |
| 2009 | 10,521 | 49,204 | 8,717 | 3,337 |
| 2010 | 10,850 | 53,480 | 9,690 | 4,123 |
| 2011 | 12,071 | 62,499 | 12,263 | 5,153 |
| 2012 | 14,120 | 68,821 | 14,006 | 6,000 |

Source: World bank

Figure: 2







Thus, the figure 2 shows that remittances income in Bangladesh, India, Pakistan and Sri Lanka has been increased significantly in the last 30 years, with some minor fluctuations. Especially, it is increasing rapidly after 2000.

Remittances as a share of GDP increased rapidly from 1.9% to 12.2% in Bangladesh and from 3.8% to 10.1% in Sri Lanka from 1980 to 2012. It has been increased from 1.4% in 1980 to 3.7% in 2012 in India. The contribution of remittances to GDP in Pakistan was 8.6% in 1980 and 6.2% in 2012.

The proportion of remittances occupy in the export earnings of these countries also increased during this period of 1980 to 2012. The total earnings Sri Lanka received via remittances in 2010 are approximately

US\$ 4175 million and the figure exceeds seven times the gross foreign exchange income from tourism during the same period.

Increase in remittance inflows has greatly assisted these countries to minimize the problem arising from shortages of foreign exchange reserve which is badly needed to pay the import bills. It is undeniable that during the earlier stage of development, developing countries like Bangladesh, India, Pakistan and Sri Lanka need the scarce foreign exchange to pay for its import requirements.

The immense increase in remittances in these countries over this period may be attributed to two significant factors. First, immigration between developing and developed countries has been increased dramatically in the past 30 years (World Bank report 2013). Second, transaction costs have declined as technological improvements have allowed for faster, lower cost mechanisms for the international transfer of payments between individuals (Guiliano & Ruiz-Arranz 2006).

Therefore, most governments in South Asian countries view worker migration as helping to curtail unemployment, reduce poverty and earn foreign exchange and make worker migration as one of the key economic policy priorities. Accordingly, over the years, the governments of these countries have facilitated labor migration to ease employments and foreign exchange shortfalls in the country with the relaxation of regulations on travel and foreign exchange convertibility to facilitate overseas work and

remittances. These efforts have resulted in increasing the number of migrants and remittance inflows over time.

1.1.2 The role of remittances

The long-run motivation for attracting increased remittance inflows is to promote economic growth and development in these recipient countries. In line with this ambition, understanding of the appropriate channels through which remittances influence economic performance is essential to formulating sound policies to maximize their overall impact on an economy. The major potential channels of the positive effects of remittance inflows on the growth and development prospects of these developing economies include how these remittances impact on domestic investment, balance of payments, ease domestic credit constraints, exports, diversification of economic activities, levels of employment and wages, human capital development and technological progress. On the contrary, remittance inflows may also have adverse effects on the growth and development prospects in a number of ways.

Despite the adverse effects, many studies have found that the benefits from workers' remittances to recipient countries are numerous. Remittances make up a significant proportion of GDP of many developing countries that understandably have become dependent on these payments. Remittances can finance the much needed investment in

developing countries and contribute to increase productivity and economic growth. They are believed to reduce poverty since it is usually the poor in developing countries who migrate and send back remittances. By raising incomes of households, remittances can also lead to higher consumption that can have a multiplier effect on aggregate demand and output. Remittances income mainly supports to improve education and health of poor. While development loans come with a liability and obligation to pay interest, remittances do not. Moreover, they cannot be wasted by governments since they are sent directly to the individuals for whom they are intended. It has also been argued that they are a more stable source of funding than foreign direct or foreign portfolio investments which tend to be particularly volatile in developing countries.

The central role of remittances in South Asian countries is to underpinning the balance of payments in these countries. Bangladesh has been able to avoid any serious imbalances in BOP's current account, although it has persistent merchandized trade deficits. Not only that, the export tradable sector has thus far remained unaffected from the Dutch Disease effects of remittances. Remittances covered more than 20% of imports in Sri Lanka and Pakistan in 2013. In Bangladesh, Pakistan and Sri Lanka, remittances are larger than the national foreign exchange reserves. All these countries (most notably, Pakistan) have instituted various incentives for attracting remittances.

Empirical studies have been found that remittances to Pakistan play a significant role on Pakistan's economy, performs beneficial functions as better balance of payments, reduction in poverty, reduce unemployment problem and improve the living standard of receiver households. Remittances are the second main external financial source of Pakistan economy after FDI. Some empirical studies are argued that mainly use of remittances in Pakistan is for household consumption but it is not remarkable for investment. As empirical studies indicate, Pakistan received significant amount of remittances during the last three decades (Kock and Sun, 2011), but volatility of remittances and use of consumption rather than productive investments were also observed.

Remittances remain a key source of external resource flows for these countries, far exceeding official development assistance (ODA), foreign direct investment (FDI) and more stable than private debt and portfolio equity flows. In 2012, remittances (officially reported) in Bangladesh, India, Pakistan and Sri Lanka were sixteen times larger than ODA and more than three times larger than FDI. Total remittances received by these countries increased from US \$ 72 billion in 2009 to US \$ 103 billion in 2012.

In India, remittances were equivalent to 15 percent of exports and covered 12 percent of imports in 2013. As well as remittances to India exceeded

earnings from IT services and remittances to Bangladesh were equivalent to 84% of garment exports in 2013 (ADB report-2013).

Table: 3 Remittances, FDI and ODA (US\$ billions) -2012

| | Remittances ^a | Foreign Direct Investment ^b | Official Development Assistant ^c |
|------------|--------------------------|--|---|
| Bangladesh | 14.1 | 1.3 | 2.2 |
| India | 68.8 | 24.0 | 1.7 |
| Pakistan | 14.0 | 0.9 | 2.0 |
| Sri Lanka | 6.0 | 0.9 | 0.5 |
| Total | 102.9 | 27.1 | 6.3 |

^a Current

^b Balance of Payments, current

^c Net current

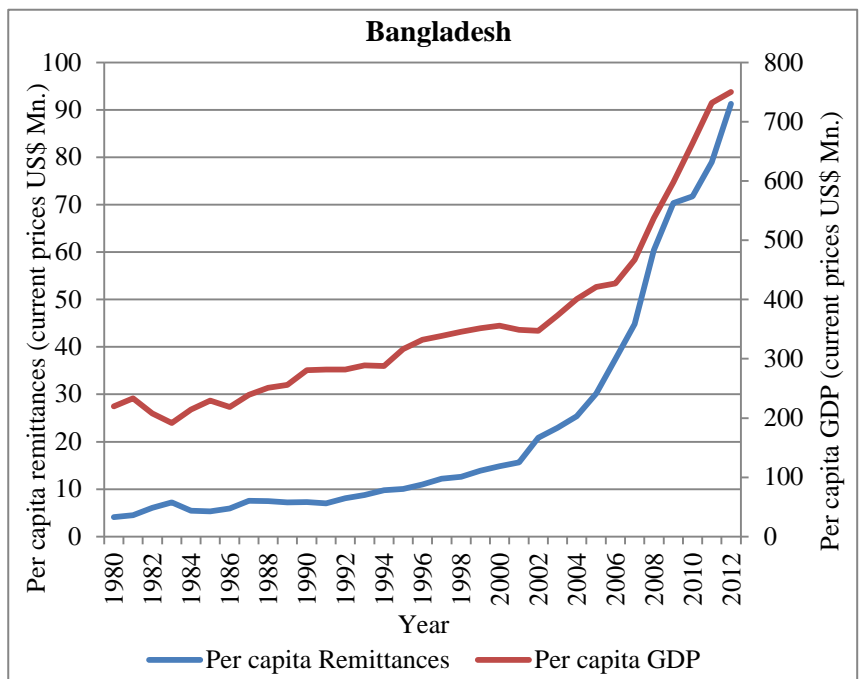
Source: World Bank, Workers' remittances and compensation of employees, received

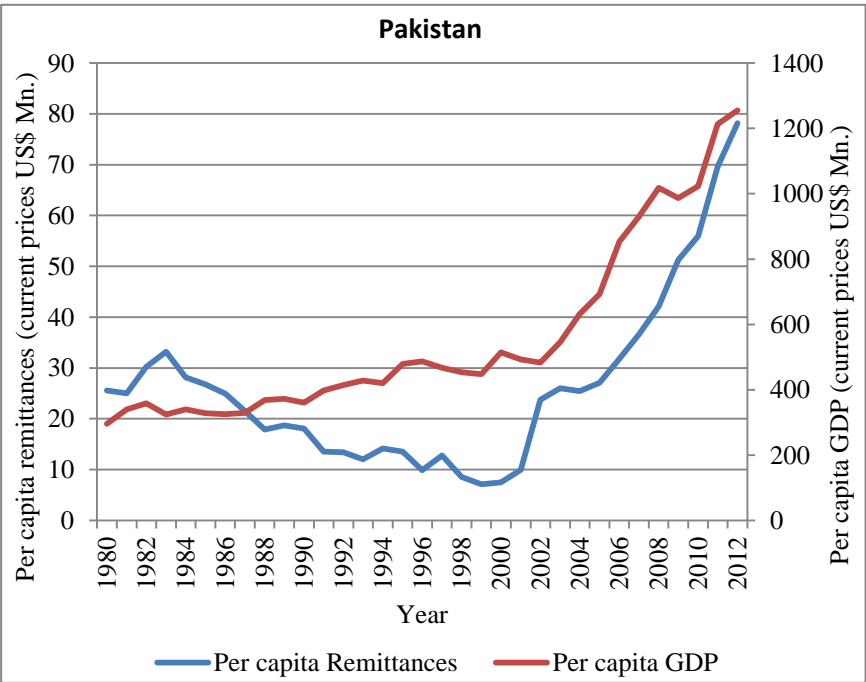
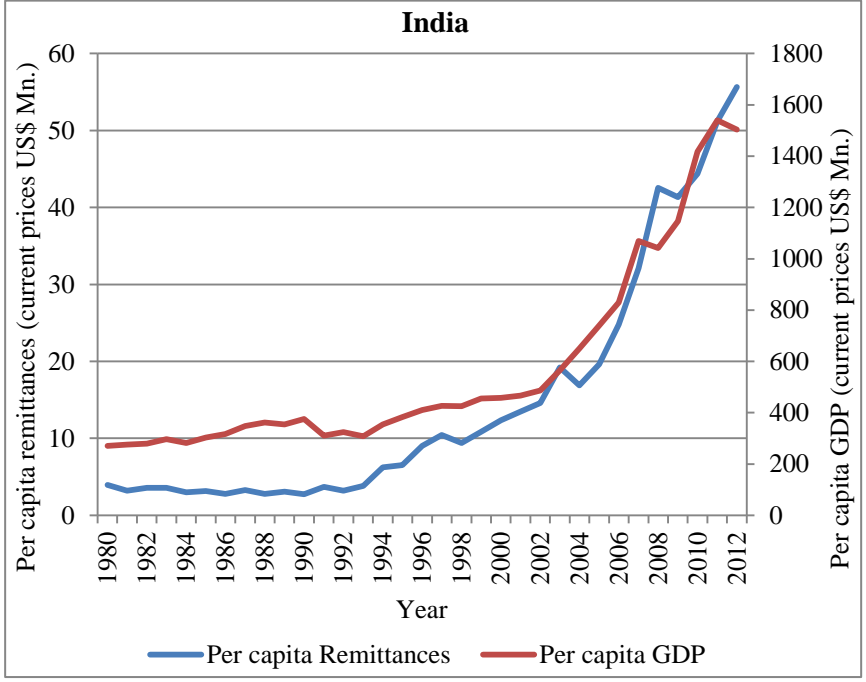
The macroeconomic implications of these flows are important in terms of the contribution to GDP growth, easing foreign exchange constraints and pressure on the exchange rate by providing valuable balance of payments (BoP) support. At the micro level, the ensuing development impacts of remittances as a means of transfer of wealth on socioeconomic factors are increasingly viewed with importance. Remittances have helped to improve the social and economic indicators like nutrition, living condition, housing, education, health care, social security and investment activities of the recipient households in these countries. Thus remittances have shown to push households out of poverty through improving their standards of living.

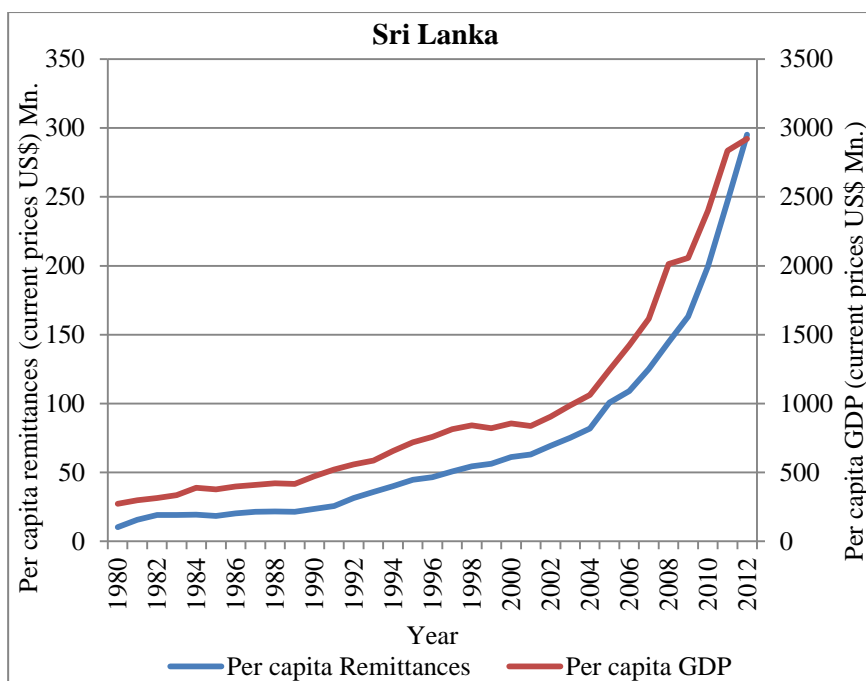
1.1.3 Remittances and economic growth

The following figure 3 shows the trend of GDP per capita and per capita remittances inflow in Bangladesh, India, Pakistan and Sri Lanka during the period of 1980-2012. It shows that the per capita remittances and GDP per capita are increasing over the period with some minor fluctuations.

Figures 3







1.2 Purpose of the study

The purpose of the study is to examine the impact of workers’ remittances on economic growth in selected South Asian countries namely; Sri Lanka, India, Bangladesh and Pakistan and to investigate the directional linkage between economic growth and remittances in these countries.

South Asia has a long history of labour export and remittance receipts. While much work has been undertaken on remittance receipts into Latin America and Africa, there is little empirical work on remittance inflows into South Asia, mainly due to lack of data availability.

While South Asia has been an important source of migrant workers for countries suffering from labour shortages, migrant workers’ remittances

have become an increasingly important source of income for the region. Especially, remittances sent by migrant workers to their home countries have played an important role in promoting economic development in these countries.

There is rapid increase in inflows of remittances have been seen in India, Bangladesh, Pakistan and Sri Lanka in last two decades. The possible reason for such increase in amount of remittances may include the intensive increase in immigration of people from developing countries to developed countries in last two decades.

However, a very little attention has been paid in the empirical studies to analyze the relationship between remittances and economic growth in these South Asian countries. Most of the empirical studies have used the cross sectional or panel data to analyze the impact of remittances on economic growth in Sub Saharan Africa and Latin America.

Some scholars argue that remittances have a positive impact on economic growth while others hold opposite view. Because of most remittances are used for consumption rather than productive investments by migrants and their families in developing countries. Moreover, as discussed below, the available empirical evidences on the relationship between remittances and economic growth are quite ambiguous. Hence, it is rationale to examine the impact of remittances on economies in South Asia as it is one of major remittances receiving regions in the world and it could help policy makers to design appropriate policies involved with the inflows of remittances to

maximize its' development benefits. In light of these considerations, this study makes an attempt to contribute to the existing literature by empirically examining the impact of remittances on economic growth in major remittances receiving countries in South Asia by using panel and time series data.

CHAPTER TWO

Review of Literature

2.1 Relationship between remittances and economic growth

The official recorded remittances are much lower than the actual remittances that take place through official and unofficial channels. Despite this under reporting, many studies have highlighted the important nexus between the international migration, remittances and economic development.

There is much debate on the role that remittances play in the economic development of less developed countries. Some argue against its impact due to conspicuous consumption. But overall literature provides sufficient evidence to support the hypothesis that remittances are beneficial recipient countries and significantly affect on poverty reduction and economic development.

Research on impacts of remittances on poverty using household data in cross-country analysis by Taylor, Mora, Adams (2005) is suggested that these transfers help reduce the level of poverty, but have an even greater influence on its severity and on the poverty gap.

Based on a dataset of 74 low and middle-income developing countries, Adams and Page (2003) found that remittances have a statistically significant impact on poverty reduction.

Moises Neil V. Serino and Donghun Kim (2011) found that remittances have a greater impact in alleviating poverty in countries located in the worst-off poverty distribution compared with those in the lower poverty.

Many research studies have found that remittances reduce poverty, but research on the effect of remittances on economic growth has been scant and has yielded mixed results.

There are studies that ascertain the existence of moral hazard associated with workers' remittances which causes the latter to have an adverse effect on GDP growth rate.

Chami et al. (2003) and Karagoz (2009) have found a negative relationship between workers' remittances and economic growth. Chami et al. used a panel of aggregate data of 113 countries and found that workers' remittances had a negative impact on real per capita GDP growth. He argued that since remittances are often used as a non-market substitute for wages to help protect recipients against negative income shocks, it is possible for the recipients to exploit the remitters by cutting down their work efforts and live off remittances. In this case, the recipients' contribution to production and output growth decreases. Due to this moral hazard, workers' remittances are found to be detrimental to the labour force

participation rate of remittances receiving countries which in turn reduces long-term output growth. Similarly, Karagoz used 1970-2005 time series data for Turkey and found a negative relationship between workers' remittances and economic growth. They argue that a significant inflow of workers' remittances can cause a decrease in the work effort of the recipients and labour force participation which in turn lowers output. The authors also affirm that remittances are countercyclical compensatory flows that are not often used for productive investment by recipients.

On the other hand, many scholars found that remittances enhance economic growth in recipient countries. Solimano (2003) found a positive association between remittances and economic growth for a panel of Andean countries.

Giuliano and Ruiz-Arranz (2005) and Mundaca (2005) suggest that the impact of remittances on economic growth depends on the level of financial development. This paper studied one of links between remittances and growth, in particular how local financial sector development influences a remittances covering about 100 developing countries. It is found that remittances boost growth in countries with less developed financial system by providing an alternative way to finance investment and helping overcome liquidity constraints. It is also provided evidence that there could be an investment channel through which remittances can promote growth

especially when the financial sector does not meet the credit needs of the population.

Christian Ahortor, R.K. and Deodat E. Adenutsi found in their study in 2009 that remittances enhance economic growth in small-open developing countries. It was empirically analyzed the macroeconomic implications of cross-border remittances for economic growth prospects of small-open developing economies for the period, 1996-2006. Using annual panel data from 31 small-open developing countries from Sub-Saharan Africa, Latin America and the Caribbean, this study argues that, contemporaneously, remittances contribute significantly to growth in small-open developing economies. It was found remittances, however, contribute more to long-run economic growth in Latin America and the Caribbean than to Sub-Saharan Africa. In dynamic terms, remittances retard growth, but with overall positive long-run growth impact across these developing economies.

In an empirical study on Asia Pacific in 2007, Jongwanich examined and found remittances do have a significant impact on poverty reduction through increasing income, smoothing consumption and easing capital constraints of the poor, they have only a marginal impact on economic growth operating through domestic investment and human capital development.

Evidence from South Asia, Arusha V. Cooray found that migrant remittances to have a positive and significant effect on economic growth. A

significant positive interactive effect of remittances on economic growth is detected through education and financial sector development. It is found that a 1 percent increase in remittances leads to a 0.02 percent increase in the growth rate.

Muhammad Javid, Umaima Arif and Abdul Qayyum, 2012 found in their study of Pakistan that remittances enhance economic growth in Pakistan in the long run. But in the short run, the effect of remittances on economic growth is negative, but however its' magnitude is small and negligible. This study was focused on the importance of remittances inflow and its implication for economic growth and poverty reduction in Pakistan for the period of 1973-2010. This empirical evidence shows that remittances affect economic growth positively and significantly. Furthermore the study also found that remittances have a strong and statistically significant impact on poverty reduction thus suggesting that there are substantial potential benefits associated with international migration for poor people in developing countries like Pakistan. So it is concluded that the importance of remittance inflows cannot be denied in terms of growth enhancement and poverty reduction that consequently improves the social and economic conditions of the recipient country.

Also, the relationship between workers' remittances and GDP growth has been analyzed for Pakistan for the period of 1973 to 2011 by Rashid Hussain and Ghulam Abbas Anjum in 2014. They found that workers' remittances have positive and significant link with GDP growth and it is

shown that remittances have 5.4 percent share in Pakistan GDP. Also this study was found that remittances inflow to Pakistan has countercyclical behavior, so as GDP growth of Pakistan declines at the same time remittances inflow to Pakistan increases.

Using time series data from 1976-2009, Junaid Ahmed, Khalid Zaman and Iqtidar Ali Shah suggested that the remittances have both the long and short-run relationship with economic growth of Pakistan. They found that remittances in the short and long-run stand out to be statistically significant and co-integrated to economic growth, however with low elasticity that is, 0.02 and 0.03, respectively.

Abu Sddique, E.A Selvanathan and Saroja Selvanathan investigated the causal link between remittances and economic growth in three countries; Bangladesh, India and Sri Lanka in South Asia. Using time series data over a 25-year period (1976-2006), they found that growth in remittances does lead to economic growth in Bangladesh. In India, there seems to be no causal relationship between growth in remittances and economic growth. But in Sri Lanka, a two-way directional causality is found, namely economic growth influences growth in remittances and vice-versa in short-run. But it was found further that there is no long- run relationship between economic growth and remittances in these countries.

Analyzing time series data from 1991-2012 in Pakistan, Waqas Bin Dilshad concluded that workers' remittances have an impact on economic

growth in Pakistan and there exists a significant positive relationship between workers' remittances and economic growth in Pakistan.

Pia.M.Orreinus, Madeline Zavodny, Jesus Catias and Roberto Coronado (2010) examined the aggregate effect of remittances on employment, school enrollment, wages and the wage distribution by using state-level data from Mexico during 2003-2007. They found that while employment, wages and school enrollment have risen over time in Mexican States, increasing remittances do not account for these trends. Remittances shift the wage distribution up and bolster the middle of the wage distribution.

However, a cross country study conducted by Dilip Ratha (2013) in 71 developing countries was found that remittances income in a household strongly and significantly corresponds with positive education and health outcomes. It is also shown that remittances increase household income and therefore a powerful anti-poverty force in developing countries. According to the study, a 10 percent increase in per capita official international remittances will lead to 3.5 percent decline in the share of people living in poverty. It concludes that remittance income helps to people bring out of poverty through increasing the level of income for the poor rather than the growth of economy as a whole.

Rita O. Koyame-Marsh found from an empirical study of ten sub-Saharan African countries, members of the Economic Community of West African

States (ECOWAS) by using time series data from 1976 to 2007 that workers' remittances do not stimulate economic growth in any of the ten ECOWAS countries. However, they seem to have a significantly negative impact on real output growth of Benin. An increase in the ratio of workers' remittances to GDP by 1 percentage point leads to a fall in real GDP growth by 1.4 percent per annum in country of Benin.

Cross-country analysis in Africa conducted by Anyanwu and Erhijakpor (2010) and in Latin America conducted by Barham & Boucher (1998) were found that remittances are related to greater income inequality.

However, other studies suggest that migration enhances the welfare of the rural poor disproportionately in sending countries through increasing remittances for example, in Mexico by Stark and Taylor (1980), in rural Egypt by Adams (1991) and in other regions by Portes (2009).

Evidences from Latin America, Africa, South Asia and other regions are suggest that remittances reduce the depth and severity of poverty, as well as indirectly stimulate economic activity (Adams 1991, Lachaud 1999, Fajnzylber & Lopez 2007, Adams 2006, Gupta et al. 2007, Anyanwu and Erhijakpor 2010, Ajayi et al. 2009).

Findings of the study conducted by Syed Tehseen Jawaid and Syed Ali Raza by employing annual time series data over the period of 1980 to 2009 for Korea and China are confirmed that there exists significant positive long-run relationship between remittances and economic growth in Korea, while, significant negative relationship exists between remittances and

economic growth in China. It further confirms the significant positive short-run relationship of workers' remittances with economic growth in Korea, while the results of China were insignificant in the short run. It is also found a unidirectional causality runs from workers' remittances to economic growth, in both China and Korea. This study is provided some empirical evidence of whether workers' remittances have contributed significantly to large open economies.

An empirical investigation of the effects of remittances on economic growth in 12 Central and Eastern European (CEE) developing countries covering the period of 1996-2010 conducted by Altin Gjini (2013) is found that remittances have had negative effects on growth of these CEE countries for the period analyzed. Thus, it is concluded that an increase in remittances by 10 percent decreases the output by about 0.9 percent.

Analyzing the effect of remittances on economic growth in 36 African countries for the period of 1980-2004, Bichaka Fayissa and Christian Nsiah have found that remittances positively affect on economic growth in these sample of African countries by providing an alternative way to finance investment and helping to overcome liquidity constraints. Accordingly, they found that a 10 percent increase in remittances of a typical African economy would result in about 0.4 percent increase in average per capita income.

Nicholas P. Glytsos investigated the impact of exogenous shocks of remittances on consumption, investment, imports and output in five Mediterranean countries from 1969-1997. The analysis reveals a uniform country performance of instability and uncertainty, with great temporal and inter-country fluctuations of remittances effects. The findings point to different inter-country priorities of remittance spending and to an asymmetric impact of remittance changes, in the sense that the good done to growth by rising remittances is not as great as the harm done by falling remittances. The diversification of output effects was explained by the relative weight of remittances in the economy, the liquidity generated by them and the phase of the business cycle, as well as the idiosyncratic behavior of individual countries. An asymmetry was detected in the way the economy reacts to positive or negative changes in remittance flows, i.e. induced growth decelerates faster as a result of falling remittances than it accelerates as a result of rising remittances.

After analyzing a sample of 39 developing countries using panel data from 1980–2004, Gyan Pradhana, Mukti Upadhyayb and Kamal Upadhyaya have concluded that remittances have a positive impact on economic growth although the impact is not very large in size for developing countries.

Another study conducted by Fayissa and Nsiah in 2010 examining the aggregate impact of remittances on the economic growth of 18 Latin American countries for the period 1980–2005 was found that remittances

enhance the economic growth of Latin American economies where the financial systems are less developed by providing an alternative way to finance investment and helping overcome liquidity constraints.

A study conducted by Kanu Success Ikechi and Ozurumba Benedict Anayochukwu in Ghana, Nigeria and South Africa was found that migrants remittances to have affected positively on the economic growth of these countries. Also, it has been examined the causality relationships and concluded that migrants' remittances are seen to cause economic growth in South Africa and Ghana and the situation was different for Nigeria, where economic growth was seen to cause migrants' remittances.

Nigel Driffield and Chris Jones (2013) examined the relative contributions of FDI, ODA and migrant remittances to economic growth in developing countries while further considering the importance of institutions when determining the relative effectiveness of these international capital flows. They argued that all sources of foreign capital have a positive and significant impact on growth when institutions are taken into account.

Lukman Raimi and O.D. Ogunjirin examined the possibility of fast-tracking sustainable economic growth and development in Nigeria through mainstreaming of the benefits of international migration and inflow of remittances from abroad for the period of 1970-2006 and found that there exists a negative relationship between the economic growth and net inflows of remittances in Nigeria.

Evaluating the economic impact of international remittances on developing countries covering 50 recent empirical studies based on household survey data, Richard H. Adams JR. concluded that while international remittances generally have a positive impact on poverty and health in the developing world, remittances can have negative effects on labour supply, education and economic growth. This qualitative review also emphasizes that more work is needed to resolve controversies in other areas regarding the impact of remittances.

Thus, previous literatures provide mix results on the relationship between workers' remittances and economic growth in recipient countries.

CHAPTER THREE

Research Design

3.1 Research Questions;

1. Do workers' remittances enhance economic growth in Bangladesh, India, Pakistan and Sri Lanka?

Overall literature on the impact of remittances on economic growth in recipient countries provides mixed results. Some scholars argue that remittance income stimulates economic growth directly or indirectly in recipient countries, while others have opposite view. Also, some scholars argue that there is no any impact of remittances on economic growth in some recipient countries since, those developing countries spend this income on consumption rather than productive activities or investment.

South Asia has a long history of labor export and remittances receipts which goes back to early 1970s. Also, remittances inflow to these countries is rapidly increasing over last decades keeping them dependence on this income. Few empirical studies have been done in this region to examine the impact of remittances on economic growth and some of those findings are also ambiguous.

2. What is the direction of causality between remittances and economic growth in these countries?

Some previous studies have found a causality relationship between remittances and economic growth in recipient countries as remittances causes economic growth and vice versa. Those studies argue that this causal relationship is unidirectional for many countries and bidirectional for some countries. When economy is growing, poor people's income increases resulting more people to move other countries for employments showing bidirectional causality.

3.2 Research Hypothesis;

Hypothesis 1. Workers' remittances enhance economic growth in selected South Asian countries.

I believe that remittances income contributes to economic growth in these countries, because of its' crucial role in these countries. It is rapidly increasing migration for foreign employments fueling to huge increase in remittances inflow into these countries for a long period. The benefits of remittances are numerous and those can be seen mainly in easing foreign exchange constraints, supporting Balance of Payment, eliminating credit constraints of poor and improving their education, nutrition and health. It is increasing savings and investments of poor, since many of migrant workers come from poor families in these countries (except Sri Lanka).

The governments of these countries have made further efforts to increase remittances income and its' use of productive way through facilitating for

foreign employments and encouraging those workers and their families for savings.

There is no substantial brain drain from this region since majority of migrants are unskilled or low skilled workers. Hence, the adverse effect of migration on economic growth is not heavy. Also, it has given an opportunity to obtain trainings in various fields for those workers. They return to home countries with income and knowledge. These people apply their knowledge in home countries and invest more in education and health of their children. Increasing income also has multiplier effect on output and economic growth.

Also, previous empirical studies conducted in these countries have been found that remittances contribute to economic growth. Therefore, my expectation about remittances and economic growth in these countries is in line with the conclusions of previous findings (Abu Sddique, E.A Selvanathan and Saroja Selvanathan in 2012, Arusha V. Cooray in 2012, Waqas Bin Dilshad in 2013, Rashid Hussain and Ghulam Abbas Anjum in 2014) and its' crucial role in these economies.

Hypothesis 2. There is bidirectional causality between remittances and economic growth to Sri Lanka and a unidirectional causality to Bangladesh, India and Pakistan.

Migrants from Sri Lanka are unique from other countries in that most come from families above the poverty line (Sriskandaraja, 2003). As the money

received from remittances is not necessary for survival, most Sri Lankan households choose to use this income for the education of family members, particularly young men. As education levels increase, output follows in a similar trend in the long-run. In addition, remittances are used by households to make small capital investments, with such funds playing a large part in financing industry growth. Remittances add to the country's revenue more than double what it receives from the tourism industry, one of its' most important industries, allowing for economic growth. Therefore, the government has given priority in its policy agenda to attract more remittances. As the economy grows, household income levels increase, causing more people to become financially able to travel. In this background, I expect that there is bidirectional causality between remittances and economic growth in Sri Lanka.

But, the situation is different for other countries in the region since, majority of migrants are very poor and mainly use of remittances on consumption, housing and their family welfare. Scholars argue that remittances are crucial in improving living standards of poor households in these countries. Also a substantial portion of remittances are still channeling through informal sector which hide to reap the economic benefits of remittances to the country (Hawala-hundai system in Bangladesh). When economy grows, it is not tended to move people other countries. It seems that even though, the rapid increase in remittance income contributes to economic growth in these countries, economic

growth does not promote remittances inflow, revealing a unidirectional causality.

Also some existing literature on the relationship between remittances and economic growth of these countries has been found that there exists a bidirectional causality to Sri Lanka and unidirectional causality to Bangladesh, India and Pakistan (Abu Sddique, E.A Selvanathan and Saroja Selvanathan in 2012).

3.3 Data and Methodology

Previous studies have generally used a broad definition of remittances that include three items in the IMF's Balance of Payment Statistics Yearbook (BOPSY) as workers' remittances, compensation of employees and migrant transfers. The analysis of my study is also based on these three types of inflows officially recorded as remittances.

However, it is estimated that a large proportion of remittance flows are transmitted through informal channels. A limitation of the study therefore, is that it is only able to capture official flows that are transmitted through formal channels.

Aggregate data of selected South Asian countries drawn from the World Bank for the period of 1980-2012 are used for the analysis. Panel data is used for the preliminary analysis. Panel data model is expressed by equation (1). The estimation of equation (1) requires some consideration of

possible country-specific factors that affect economic growth but are not easily measured. When the unobservable country-specific variables are correlated with the included independent variables, the model can generate misleading results. Therefore, I could potentially employ either fixed-effect or random-effect models.

However finally, the study examines how international migrants' remittances affect on economic growth in selected South Asian countries by using random effect model. To ascertain the impact of migrants' remittances on the economic growth of selected countries, Ordinary Least Square (OLS) regression method will be carried out on time series data.

To avert the emergence of spurious results, Augmented Dickey Fuller (ADF) unit root test will be carried out in order to test the stationary property of data and to determine the order of integration, while co-integration tests will be carried out to detect if there exists a long run relationship between remittances income and economic growth in these economies.

To examine the existence of short run and long-run relationship between economic growth and remittances in these countries, I will carry out Vector Error Correction Model (VECM) and Granger causality test.

The empirical model for estimations is developed as follows;

$$\Delta Y_{it} = \gamma Y_{it-1} + X_{it}\beta + \mu_i + \eta_t + u_{it} \quad (1)$$

$$\Delta Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 \text{Rempc}_{it} + \beta_3 \text{Inv}_{it} + e_{it} \quad (2)$$

Panel data model is expressed by equation (1), where ΔY_{it} is the first difference of GDP per capita in country i during t time. All control variables (one period lagged GDP per capita and investment) are captured by the vector X_{it} . μ_i is a country specific effect and η_t is a fixed time effect. u_{it} is a random error term that captures all other variables.

OLS method is expressed by equation (2), where ΔY_{it} is the first difference of GDP per capita in country i during t time. Y_{t-1} is denoted as one period lagged GDP per capita, $Rempc_{it}$ is denoted as per capita remittances, Inv_{it} is gross fixed capital formation (proxy of investment) and e_{it} is the error term. Thus, GDP per capita is a function of per capita remittances, investment and previous level of GDP per capita.

$$\Delta GDPpc_t = \sum_{i=1}^{p-1} \beta_i \Delta GDPpc_{t-i} + \sum_{i=1}^{p-1} \alpha_i \Delta Rempc_{t-i} + Z1 * EC1_{t-1} + \varepsilon_{1t} \quad (3)$$

$$\Delta Rempc_t = \sum_{i=1}^{p-1} M_i \Delta GDPpc_{t-i} + \sum_{i=1}^{p-1} N_i \Delta Rempc_{t-i} + Z2 * EC2_{t-1} + \varepsilon_{2t} \quad (4)$$

The VECM is expressed by equation (3) and (4), where β_i , α_i , M_i and N_i are short-run coefficients, EC1 and EC2 are called, error correction terms and ε_{1t} and ε_{2t} are residuals in the equations (3) and (4), respectively.

The $EC1_{t-1}$ is the lagged value of the residuals derived from the co-integrating regression of per capita remittances on GDP per capita, while $EC2_{t-1}$ is the lagged value of the residuals derived from the co-integrating regression of GDP per capita on per capita remittances.

To estimate how remittances affect per capita GDP, my models reflect several considerations. As noted above, remittances received can add to domestic consumption and savings. To the extent, that remittances help families in the source country to maintain a minimum standard of living. Remittances can raise the family members' productivity through improving health and education. A part of remittances can also raise savings and investment in the source country. This is the variable of my main interest and I include it directly in the models.

It is worth noting that I have included one period lagged GDP per capita (Y_{t-1}) as an explanatory variable (control variable) in these equations to remove certain econometric problems, particularly auto correlation among the explanatory variables.

Theoretically, investment is considered as the engine of a long-run sustained economic growth. This is capital stock in the economy and it represents the growth effects of factor accumulation. The strong positive association between investment and growth performance is a well established empirical fact in a number of recent studies, which show that the higher rate of investment (an increase in physical capital stock) leads to higher rate of economic growth. For example, Clements, Bhattacharya and Nguyen (2003), Khan and Kumar (1997), Easterly (1993), Easterly and Rebelo (1993), Barro (1991) and Khan and Reinhart (1990) found that increasing rate of physical capital leads to higher rate of economic growth.

Among the factors of production commonly recognized as crucial to growth, as suggested by Mankiw, Romer and Weil (1992) is human capital. Empirically, however, this variable does not perform very well. An important reason is that human capital that is supposed to reflect the status of education, training and health among the working population has eluded a clear definition or measurement. Therefore, I have included physical capital accumulation (gross fixed capital formation) as a proxy of investment in the models.

Accordingly, my empirical models (equation 1 and 2) suggest that economic growth depends on previous level of GDP, current remittances and investment.

CHAPTER FOUR

Analysis and Results

The random-effects estimation of panel data model yields the results as shown in column (3) of Table 4. The Hausman test verifies the superiority of the random-effects model since the fixed-effects model is found to be inconsistent. The regression shows a significant overall fit. The R^2 for panel model where cross-sectional random dominates 44% and the F ratio is significant at the 1% level.

I found that investment contributes significantly to economic growth (as shown in column (3) of table 4 which is consistent with economic theory and results of previous studies. Its' coefficient is statistically significant at the 1% level. One period lagged GDP per capita does not statistically significant. The main variable of interest however, is remittances. It is exhibited a positive and highly significance suggesting that remittances contribute significantly to economic growth in these countries. Holding other variables constant, an increase in per capita remittances by 1, increases GDP per capita by 1.23. Since, increase in remittances by 1 leads to increase in GDP per capita by 1.23 in these countries; I postulate a substantial contribution of remittances to overall growth. It is, however, an evident that not all remittances are spent on consumption but a fraction is saved and invested leading to some impact on long-term growth. As pointed out earlier, it is possible that measured remittances are an underestimate in actual remittances and the underestimates may vary

across years. If this is true, the precision with which the remittance coefficient is estimated could be lowered substantially.

The fixed effect estimates are also presented in column (2) of table 4.

Table 4: Fixed-effects and Random-effects estimates (Dependent variable: First difference of GDP per capita)

| | (2) | (3) |
|---------------------|---------------------|--------------------|
| Constant | 7.8098 (0.60) | -0.1270 (-0.01) |
| GDPpc(-1) | -0.0442 (-0.87) | -0.0140 (-0.32) |
| Rempc | 1.4532*** (3.10) | 1.234*** (2.99) |
| Inv. | 2.01E*** (2.30) | 1.60E*** (2.34) |
| No. of observations | 128 | 128 |
| No. of countries | 4 | 4 |
| R ² | 46% | 46% |
| Adj. R ² | 44% | 44% |
| F | 17.68*** | 35.22*** |

Notes: (1) The specification was run by using random effects (column 3) and fixed effects (column 2) models. The Hausman test, however, rejects fixed effects estimation. (2) The marks ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

I carried out OLS method by employing times series data for individual countries to ascertain the impact of remittances on economic growth in these countries and results are presented in table 5.

The coefficients of OLS estimation are positive and significant for Bangladesh and Pakistan suggesting that remittances contribute to economic growth in these two countries. But remittances are not significant

for economic growth in both India and Sri Lanka. Not only that, the coefficient of remittances is negative for Sri Lanka. Investment and one period lagged GDP per capita are highly significant at 1% level for all countries.

Table 5: OLS estimates (Dependent variable: First difference of GDP per capita)

| | Bangladesh | India | Pakistan | Sri Lanka |
|---------------------|-----------------------|------------------------|-----------------------|-----------------------|
| Constant | 83.2342*** (3.13) | 170.3818*** (11.08) | 61.8414*** (3.06) | 45.5000 (1.19) |
| GDPpc(-1) | -0.4846*** (-3.05) | -0.8851*** (-12.55) | -0.5677*** (-4.66) | -0.3542*** (-2.25) |
| Rempc | 0.9522** (2.04) | 0.0490 (0.03) | 2.0066*** (3.01) | -1.6904 (-0.93) |
| Inv | 7.51E*** (2.34) | 2.01E*** (15.07) | 1.70E*** (5.50) | 1.01E*** (4.31) |
| No.of observations | 32 | 32 | 32 | 32 |
| R ² | 64% | 92.8% | 62% | 70% |
| Adj. R ² | 61% | 92% | 58% | 67% |
| F | 17.01*** | 121.14*** | 15.03*** | 22.05*** |

Notes: (1) The marks ***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Finally, I investigate whether the two series of per capita remittances and GDP per capita are co-integrated and have a long run relationship.

Accordingly, VECM is carried out on time series data to find the short-run and long-run causal relationship between per capita remittances and GDP per capita in Bangladesh, India, Pakistan and Sri Lanka. Walt test is applied to detect the short-run causal relationship between these two series.

As can be seen from above Figure 3, there is an upward trend in both GDP per capita and per capita remittances series over time indicating that both series in their original form may not be stationary. Therefore, stationary properties of time series variables are examined by using Augmented Dickey Fuller (ADF) unit root test.

Results of unit root test are presented in table 6. Both time series for all countries have at least one unit root and hence they are non-stationary in their original form.

Results of table 6 show, that both time series are stationary at first difference of all countries.

Table 6: Results of ADF unit root test

| Country | Variable | ADF test stat. (ADF average critical value) | Order of integration |
|------------|------------------------|---|-------------------------|
| Bangladesh | GDP per capita | -5.893355 | 1(1) |
| | Per capita remittances | -5.367538 | 1(1) |
| India | GDP per capita | -9.728783 | 1(1) |
| | Per capita remittances | -5.276271 | 1(1) |
| Pakistan | GDP per capita | -5.363817 | 1(1) |
| | Per capita remittances | -4.405949 | 1(1) |
| Sri Lanka | GDP per capita | -17.63173 | 1(1) |
| | Per capita remittances | -11.01355 | 1(1) |

Notes: (1) Constant and time trend included. (2) The null hypothesis (H_0) is that a series non-stationary against an alternative hypothesis (H_1) of a series being stationary. (3) The rejection of the H_0 for ADF test is based on the critical values. (4) Lag lengths were automatically determined based on SI criteria.

The results of VECM estimation and Walt test are presented in table 7 and 8, respectively. It is presented the results of causality from per capita

remittances to GDP per capita. The results of VECM and Walt test of causality from GDP per capita to per capita remittances are presented in table 9 and 10, respectively.

As seen in table 7, there is no long-run causality from per capita remittances to GDP per capita in Bangladesh. But, Walt test results in table 8 confirm that there is short-run causality from per capita remittances to GDP per capita in Bangladesh. It is in line with OLS findings and some existing literature on remittances and economic growth in Bangladesh. As seen in table 9 and 10, there is no either long-run or short-run causality from GDP per capita to per capita remittances in Bangladesh.

There is no either long-run or short-run causality from per capita remittances to GDP per capita in India since the coefficients are not significant (table 7 and 8). These results are consistent with results of OLS method and some existing literature on the relationship between these two series in India. As well as there is no long-run causality from GDP per capita to per capita remittances (table 9). Even though it seems that there exists a shot-run causality from GDP per capita to per capita remittances (table 10).

There exists a bidirectional causal relationship between per capita remittances and GDP per capita (table 8 and 10) in Pakistan in the short-run. But, there is no significant causality from per capita remittances to GDP per capita or vice versa in the long-run (table 7 and 9).

The results seen in table 7 confirm that there is a long-run causality from per capita remittances to GDP per capita in Sri Lanka even though there is no short-run causality (table 8). The coefficient of long-run co-integrating equation is statistically and highly significant. According to the OLS method, it was found that remittances do not contribute to economic growth in short-run in Sri Lanka. Even though findings of VECM confirm that per capita remittances have a long-run causality on GDP per capita. Also, it is found that GDP per capita doesn't have causality on per capita remittances in long-run (table 9). But there exists a short-run causality (table 10).

Table 7: VECM estimation (Dependent variable; First difference of GDP per capita)

| | Bangladesh | India | Pakistan | Sri Lanka |
|------|---------------------|--------------------|--------------------|-----------------------|
| C(1) | -0.1036* (-1.79) | -2.3082 (-0.57) | -0.3187 (-0.74) | -0.8020*** (-2.48) |
| C(2) | -0.1184 (-0.54) | 1.7712 (0.58) | -0.1037 (-0.23) | 0.3882 (1.24) |
| C(3) | -0.3788* (-2.05) | 1.4513 (0.70) | -0.0784 (-0.16) | 0.6004*** (2.55) |
| C(4) | 0.2876* (1.79) | 2.1791 (0.81) | -0.0180 (-0.05) | 1.1058*** (4.17) |
| C(5) | -0.0301 (-0.18) | 1.9730 (0.57) | 0.1567 (0.35) | -0.3706 (-0.80) |
| C(6) | 3.3172*** (3.22) | -0.2876 (-0.16) | 0.6466 (0.90) | -6.0349 (-1.12) |
| C(7) | 4.1174*** (3.59) | 0.3717 (0.36) | -0.1634 (-0.31) | -3.3453 (-0.68) |
| C(8) | 5.6233*** (3.13) | 2.6818 (0.85) | -0.1135 (-0.20) | 6.1371 (1.33) |
| C(9) | 0.7646 (0.40) | 0.6498 (0.29) | 3.1040 (0.65) | -9.0375 (-1.64) |

| | | | | |
|---------------------|---------------------------------|----------------------------------|-------------------------------|-----------------------------------|
| C(10) | -8.7489 ^c (-0.96) | -21.4153 (-0.54) | 5.6586 (1.33) | 46.3434 ^{c***} (2.48) |
| C(11) | | -18.0019 (-0.56) | 2.7021 (0.76) | |
| C(12) | | -31.3972 (-0.61) | 10.2126 (2.54) | |
| C(13) | | 1.9898 (0.06) | 8.5878 (1.49) | |
| C(14) | | -7.8878 (-0.47) | 6.9017* (2.13) | |
| C(15) | | -28.9219 (-0.77) | -1.6685 (-0.42) | |
| C(16) | | -51.1669 (-0.49) | 7.1318 ^c (0.09) | |
| C(17) | | -31.7464 (-0.29) | | |
| C(18) | | -99.9042 ^c (-0.54) | | |
| R ² | 87% | 85% | 75% | 91% |
| Adj. R ² | 80% | 41% | 34% | 87% |
| F stat. | 13.2*** | 1.96 | 1.82 | 20.5*** |

Notes: (1) The C(1) is the error correction term or coefficient of co-integrating equation in long run. (2) H₀ for C(1) is that there is no long-run causality from per capita remittance to GDP per capita. (3) The mark c indicates constant. (4) Others are coefficients of short run causality equation (5) Optimal lag lengths were selected according to the lag length criteria; 4 for Bangladesh and Sri Lanka and 8 for India and 7 for Pakistan.

Table 8: Results of Walt test (Dependent variable; First difference of GDP per capita)

| Country | Test Statistic | Value | df | Probability |
|------------|----------------|---------|---------|-------------|
| Bangladesh | F-statistic | 9.5390 | (4, 18) | 0.0003 |
| | Chi-square | 38.1559 | 4 | 0.0000 |
| India | F-statistic | 0.7721 | (8, 6) | 0.6425 |
| | Chi-square | 6.1771 | 8 | 0.6274 |
| Pakistan | F-statistic | 2.3051 | (7, 9) | 0.1211 |
| | Chi-square | 16.1360 | 7 | 0.0239 |
| Sri Lanka | F-statistic | 1.4810 | (4, 18) | 0.2494 |
| | Chi-square | 5.9238 | 4 | 0.2049 |

Notes: (1) H_0 is that there is no short-run causality from per capita remittances to GDP per capita. (2) Walt test examines (H_0) that short-run coefficients jointly are zero. (3) If P value of Chi-sq. is less than 5%, H_0 is rejected confirming existence of a short-run causality.

Table 9: VECM estimation (Dependent variable; First difference of per capita remittances)

| | Bangladesh | India | Pakistan | Sri Lanka |
|-------|-------------------------------|--------------------|---------------------|-------------------------------|
| C(1) | 0.0564 (1.03) | -1.0094 (-0.46) | -0.0440* (-2.14) | 0.2416 (0.74) |
| C(2) | 0.4765 (1.7) | 0.4481 (0.41) | -0.3384 (-0.97) | 0.5034 (1.15) |
| C(3) | -0.3856 (-1.22) | 0.7525 (0.86) | 0.0843 (0.27) | 0.7301* (1.85) |
| C(4) | 0.3782 (0.76) | 0.0998 (0.07) | -0.2034 (-0.78) | 0.0598 (0.16) |
| C(5) | -0.0173 (-0.03) | 0.0721 (0.08) | -0.4226 (-1.42) | -0.0554 (-0.12) |
| C(6) | -0.0268 (-0.44) | 0.2455 (0.54) | -0.0606 (-0.14) | -0.0222 (-0.88) |
| C(7) | -0.0730 (-1.43) | 1.7527 (1.7) | -0.2915 (-1.22) | 0.0122 (0.64) |
| C(8) | -0.0053 (-0.12) | 1.5312 (0.54) | 0.1865 (0.64) | 0.0483** (2.25) |
| C(9) | 0.0018 (0.04) | 0.0805 (0.03) | -0.0700* (-2.15) | -0.0168 (-0.44) |
| C(10) | 3.6481 ^c (1.46) | -0.0064 (-0.08) | -0.0167 (-0.47) | 0.0773 ^c (0.05) |
| C(11) | | -0.0408 | -0.0409 | |

| | | | | |
|---------------------|---------|---------------------|-----------------------|---------|
| | | (-0.73) | (-1.54) | |
| C(12) | | -0.0309 | -0.1188*** | |
| | | (-0.42) | (-3.57) | |
| C(13) | | 0.0043 | -0.0537 | |
| | | (0.04) | (-1.01) | |
| C(14) | | -0.0452 | -0.0420 | |
| | | (-0.94) | (-1.07) | |
| C(15) | | -0.0473 | 0.0190 | |
| | | (-1.7) | (0.46) | |
| C(16) | | 0.0105 | 12.2893 ^{c*} | |
| | | (0.12) | (2.19) | |
| C(17) | | -0.0245 | | |
| | | (-0.41) | | |
| C(18) | | 2.6516 ^c | | |
| | | (0.52) | | |
| R ² | 70% | 92% | 84% | 95% |
| Adj. R ² | 55% | 70% | 56% | 93% |
| F stat. | 4.61*** | 4.08** | 3.07** | 40.8*** |

Notes: (1) The C(1) is the error correction term or coefficient of co-integrating equation in the long run. (2) H_0 is that there is no long-run causality from GDP per capita to per capita remittances. (3) The mark c indicates constant. (4) Others are coefficients of short run causality equation. (5) Optimal lag lengths were selected according to the lag length criteria; 4 for Bangladesh and Sri Lanka and 8 for India and 7 for Pakistan.

Table 10: Results of Walt test (Dependent variable; First difference of

per capita remittances)

| Country | Test Statistic | Value | df | Probability |
|------------|----------------|---------|---------|-------------|
| Bangladesh | F-statistic | 0.6053 | (4, 18) | 0.6638 |
| | Chi-square | 2.4212 | 4 | 0.6588 |
| India | F-statistic | 2.1190 | (8, 6) | 0.1879 |
| | Chi-square | 16.9523 | 8 | 0.0306 |
| Pakistan | F-statistic | 2.1566 | (7, 9) | 0.1402 |
| | Chi-square | 15.0965 | 7 | 0.0348 |
| Sri Lanka | F-statistic | 3.1809 | (4, 18) | 0.0384 |
| | Chi-square | 12.7238 | 4 | 0.0127 |

Notes: (1) H_0 is that there is no short-run causality from GDP per capita to per capita remittances. (2) Walt test examines (H_0) that short-run coefficients jointly are zero. (3) If P value of Chi-sq. is less than 5%, H_0 is rejected confirming existence of a short-run causality.

Also I applied Granger causality test to find the causal relationship between per capita remittances and GDP per capita in these countries. The results are presented in table 11. Accordingly, per capita remittances do cause GDP per capita in Bangladesh and Sri Lanka confirming existence of unidirectional causality. But per capita remittances do not cause GDP per capita or vice versa in both India and Pakistan. It confirms that there is no significant relationship between remittances and economic growth in India. But there is a causality from remittances to economic growth in Pakistan. The results of Granger causality test are in line with the results of OLS and VECM for India.

Table 11: Pairwise Granger Causality Tests

| Country | Null Hypothesis: | Obs. | F-Statistic | Prob. |
|------------|--------------------------------------|------|-------------|--------|
| Bangladesh | DGDPpc does not Granger Cause Drempc | 27 | 0.62392 | 0.6514 |
| | Drempc does not Granger Cause DGDPpc | | 7.43268 | 0.0010 |
| India | DGDPpc does not Granger Cause Drempc | 26 | 0.90008 | 0.4856 |
| | Drempc does not Granger Cause DGDPpc | | 1.10514 | 0.3861 |
| Pakistan | DGDPpc does not Granger Cause Drempc | 25 | 1.47833 | 0.2774 |
| | Drempc does not Granger Cause DGDPpc | | 2.87597 | 0.0636 |
| Sri Lanka | DGDPpc does not Granger Cause Drempc | 26 | 2.34087 | 0.0965 |
| | Drempc does not Granger Cause DGDPpc | | 3.81916 | 0.0216 |

Panel data model confirms that remittances are highly significant for promotion of economic growth in these countries and these findings are consistent with previous studies (Arusha V. Cooray in 2012).

As indicated above, my results establish that remittances play a significant role in the promotion of economic growth in Bangladesh in the short-run. The contribution of remittances to economic growth in Bangladesh could be due to increase in expenditure. Additionally, despite remittances spending on investment being low, even a small portion can help to alleviate liquidity constraints and directly contribute to economic growth in the short-run. But, high cost of sending money through official channels continues to be an obstacle to the utilization of remittances for development purposes, as people seek out informal channels as their preferred means for sending money home. Therefore, Bangladesh couldn't reap the benefits of remittances in long-run economic growth. These findings are in line with the findings of previous studies (Abu Sddique, E.A Selvanathan and Saroja Selvanathan in 2012). There is a bidirectional

causal relationship between remittances and economic growth in the short run and no any relationship in the long-run.

Also remittances play a significant role in economic development in Sri Lanka in the long -run. This is a result of government policies aimed at increasing international migration of workers and remittances since 1977. Also, it is encouraged savings of workers and their families introducing various kinds of foreign currency savings accounts and investments such as in SMEs. The migrant workers', relatively are not very poor resulting high savings and investments at household level improving education. Therefore, remittances have a substantial contribution to economic growth in the long-run.

But on the other hand, there are some adverse effects of migration. This outflow reduces the economic growth since its influence in labour force participation in the country. Also, remittances indirectly affect labour supply by encouraging some remittance recipient-households to work less. This could reduce domestic labour supply and economic growth in short-run. The present outflow of migrant workers is over 200,000 per annum and the growth of foreign employment has surpassed the rate of labour force increase in the country. The percentage of migrant workers from the total employed population of Sri Lanka has increased to 24.1% in 2009 and 25% by 2013 which stood at 13.5% in 2000. Thus, remittances do not contribute to economic growth and have some adverse effects in the short-run.

Even though India is the largest recipient of remittances in the world, remittances do not cause economic growth. Per capita remittances are very low in India due to large population. It may be remittances in India are used mostly for consumption and improving standard of living rather than using it on profit-driven investments.

Remittances inflow into Pakistan is getting larger than ever before. But, its' contribution to economic growth is negligible in the long-run, since, those workers and their families spend these income manly on consumption. Therefore, it seems that there is indirect impact through multiplier effect on economic growth in short-run. These results are consistent with the previous studies conducted in Pakistan (Rashid Hussain and Ghulam Abbas Anjum in 2014, Waqas Bin Dilshad in 2013). Also increase in migration and higher skilled levels of migrating workers have helped to reduce economic growth in the long-run in Pakistan.

CHAPTER FIVE

Conclusion

In this study, I attempted to provide an analytical answer to an important economic issue whether remittances contributed to economic growth in selected South Asian countries. The empirical results drawn from the analysis are representative of ongoing research on the determinants of output growth. As it is always difficult to draw precise conclusions from the regression analysis, nevertheless, the findings drawn from this study should be treated as suggestive and obviously much more remains to be done in this area in South Asian region since it is one of the major remittances recipient regions and its' highly dependency on remittances. The results found in this research have led me to the following major conclusions.

The study mainly focused on the importance of remittances inflow and its implication for economic growth in India, Bangladesh, Pakistan and Sri Lanka. By using the random effect model for panel data, I analyzed the impact of remittances on economic growth and found that remittances affect economic growth positively and significantly for these countries.

Also I carried out OLS method on time series data. I found that remittances have significant and positive impact on economic growth in Bangladesh and Pakistan and no significant effect for Sri Lanka and India.

Further I employed the VECM and Walt test to find the causal relationship between remittances and economic growth in long-run and short-run. I found that remittances have causality on economic growth in Bangladesh

in short run and in Sri Lanka in long run. Remittances do not cause economic growth in India in short run or long run at all. Remittances have causality on economic growth in Pakistan in short-run but there is no long-run causality.

By using Granger causality test, I found a unidirectional causality runs from remittances to economic growth in Bangladesh and Sri Lanka. And there is no significant relationship between remittances and economic growth in India and Pakistan in long-run.

Remittances contribute to economic growth and have bidirectional causality in Bangladesh in the short-run. Remittances do not contribute to economic growth and have a unidirectional causality on economic growth in India in short-run. Remittances contribute to economic growth and have bidirectional causality in Pakistan in short-run. Remittances do not contribute to economic growth in Sri Lanka. But, this is not consistent with existing literature on remittances and economic growth in Sri Lanka since, it has been found that remittances enhance economic growth in Sri Lanka. Therefore, this result is ambiguous and much more researches are needed to examine the impact of remittances on economic growth in Sri Lanka. I found that remittances have unidirectional causality on economic growth in long-run.

These findings do not however, give insights on all the channels through which remittances may affect growth. In particular, I did not explore the degree of financial development and other possible measures of countries'

characteristics such as institutional aspects that may explain this effect. Those omitted variables can be influenced and changed the results. My analysis was only taken into account the remittances inflow through formal channel and it did not account for remittances inflow which channeled through informal sector. These are some limitations of this study which affect to my findings.

Therefore, it is necessary to attract all remittances income into formal sector and conduct research in this field to ascertain the impact of remittances on economic growth. Especially, further researches are needed to examine the impact of remittances on economic growth considering financial and institutional development in these countries. Also the other areas for research might be to examine the effect of remittances on education and health improvements which have direct impact on economic growth.

However, there are few empirical studies conducted on the relationship between remittances and economic growth in these South Asian countries mainly due to lack of data. Therefore, to some extent the findings of this study contribute to the existing literature on remittances and economic growth in these countries. And also this is provided some policy implications for policy makers to design the policies involved with remittances to maximize its' development benefits.

Accordingly, these findings and overall literature suggest that remittances through international migration of labour have substantial potential benefits

for developing countries. In the long run the remittance inflow can lead to sustainable growth as the impact of remittance broaden and enlarge over the time. So the government should formulate the sound policy that enhances the amount of remittances by reducing the transaction cost of transferring the remittances through formal channel and encouraging the migrant workers and their families to invest in productive economic activities.

Given the significant contemporaneous positive contribution of remittance inflows to economic growth, the following policy recommendations are advanced for consideration by the governments in these developing economies in Asian sub-region.

- Policy focus should be directed at encouraging domestic savings and investments from traditional sources to increase remittance inflows so as to boost rapid economic growth of these economies in the long-run.
- Policymakers should be created an effective system to attract more remittance inflows into their economies through the formal financial sector. These remittances also should be channeled into the productive sectors of the economy.
- Specific policy aimed at promoting human capital development through higher secondary school enrolment should be designed to spur rapid economic growth in the long-run.
- Policies should be designed to give these developing countries a

big push for rapid economic take-off since economic growth is mostly propelled by its backlash in this region.

- Efforts should be made at improving good governance and eliminating or minimizing corruption and other forms of inefficiencies within the public sector so that the negative effects of excessive government spending on long-run growth would be reduced.

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Annexture (List of Table)

**Table : 1 Out flows of migrant workers (officially reported),
1990-2012**

| Year | Bangladesh | India | Pakistan | Sri Lanka |
|------|------------|---------|----------|-----------|
| 1990 | 103,814 | 139,861 | 113,787 | 42,625 |
| 1991 | 147,131 | 191,502 | 142,818 | 64,983 |
| 1992 | 188,124 | 416,784 | 191,506 | 124,494 |
| 1993 | 244,508 | 438,338 | 154,529 | 129,076 |
| 1994 | 186,326 | 425,385 | 110,936 | 130,027 |
| 1995 | 187,543 | 415,334 | 117,048 | 172,489 |
| 1996 | 211,714 | 414,214 | 119,629 | 162,576 |
| 1997 | 381,077 | 416,424 | 149,029 | 150,283 |
| 1998 | 267,667 | 355,164 | 100,706 | 159,816 |
| 1999 | 268,182 | 199,552 | 78,093 | 179,735 |
| 2000 | 222,686 | 243,182 | 107,733 | 182,188 |
| 2001 | 188,965 | 278,664 | 127,929 | 184,007 |
| 2002 | 225,256 | 323,973 | 147,422 | 203,773 |
| 2003 | 254,190 | 455,456 | 214,039 | 209,846 |
| 2004 | 272,958 | 474,960 | 173,824 | 214,709 |
| 2005 | 252,702 | 548,853 | 142,135 | 231,290 |
| 2006 | 381,515 | 676,912 | 183,191 | 201,948 |
| 2007 | 832,609 | 809,453 | 287,033 | 218,459 |
| 2008 | 875,005 | 848,601 | 430,314 | 250,499 |
| 2009 | 465,351 | 610,272 | 403,528 | 247,126 |
| 2010 | 383,150 | 641,356 | 362,904 | 267,507 |
| 2011 | 568,062 | 626,565 | 456,893 | 262,961 |
| 2012 | 650,450 | 747,041 | 638,587 | 282,447 |

Source: Sri Lanka Bureau of Foreign Employment (SLBFE), Pakistan Bureau of Emigration and Overseas Employment, Ministry of Overseas Indian Affairs, Bureau of Manpower, Employment and Training i Bangladesh (BMET)

Table : 12 Variable description and source of data

| Variable | Description | Data Source |
|----------|--|-----------------------------------|
| GDPpc | Gross Domestic Product per capita, measured in current US\$) | World Bank development indicators |
| Rempc | Personal remittances received (per capita), measured in current US\$ | |
| Inv. | Gross fixed capital formation, measured in current US\$) | |