Remittance Inflows and Economic Development in SAARC Region

Mohammad Mohidul Islam

Doctoral Candidate in Regional Economics
School of Economics, Huazhong University of Science and Technology, Wuhan, China

Abstract
Developing countries having a stable population growth or experiencing population dividend have been earning foreign currencies by exporting manpower with varying levels of skills including skilled, semi-skilled and unskilled labors abroad. The inflow of foreign currencies from the expatriates, known as remittance, can play an important role in the economic development and might be considered as a major source of international reserves in comparison with export earnings from goods and FDI inflows respectively. Considering the importance of wage remittances in socioeconomic development in the developing economies, this study tries to investigate the impact of wage remittances on the economic development of the SAARC countries (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) using panel data for the period 2011 to 2020. The empirical analysis is performed employing the econometric techniques of panel data regression approach in order to examine whether the relationship between remittances and economic growth in these countries are significant or not. The findings of the study reveal that wage remittances have significant positive influence on economic development in the SAARC region, but the impact is not substantial because the remittances are mostly spent for bearing household expenditures rather than savings and domestic investments.

Keywords: Wage Remittances, Economic Development, Panel Data, and SAARC Region.

**JEL Classification:** C23, O11 and O15.

1. Introduction

The flow of foreign currency from abroad to home country by the migrant workers is generally termed as remittance. Remittance has been considered as a rapidly growing source of foreign currency earnings for many developing countries in the economic integration process of globalization. In most cases, remittance inflows improve the living standard of the migrants and as such, the migrant's community can change their status by gaining substantial welfare into the poverty reduction measure. Now a days, remittance has established itself in the leading position of foreign exchange earning sources, especially in the cheap labor-oriented economies. Remittances boost up economic growth as well as promote the livelihood standard of deprived people in different parts of the world. In addition, remittance transfers allow people, both sender and recipient to involve themselves as players of increasing financial and social inclusion through getting access to financial services. Remittances also play an important role to foster the home country's economy by maintaining the bridge through economic dependency on the global

economy along with the succession of sustainable improvement in the local economy. In many developing countries, the huge amount of remittance inflows often may have an important and crucial role in the line of macroeconomic considerations compared with other internal flows of resources into the overall economy.

Wage earners remittances are one of the foremost global financial assets of the world economy. Specifically, in developing countries like Bangladesh it contributes significantly in the current account balance. In Bangladesh after export of readymade garments, remittance is recorded as the second highest source of foreign currency receipts. This study aims to observe the impacts of wage remittances on the economies of the SAARC countries namely; Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. According to the global data on remittances, total earnings was US$ 649 billion in 2020 of which SAARC countries' earnings amounted to US$ 147 billion with India in the top position in the world with US$ 83.1 billion. Positions of other countries in the SAARC region are Pakistan-6th (US$ 26.1 billion), Bangladesh-8th (US$ 21.8 billion). In 2020, the rest of the SAARC countries earned the following volume of remittances respectively, such as Nepal (US$ 8.1 billion), Sri Lanka (US$ 7.1 billion), Afghanistan (US$ 0.8 billion), Bhutan (US$ 0.08 billion) and Maldives (US$ 0.005 billion).

Figure 1. Remittance Inflows in 2020 in SAARC Countries (in billion US$)
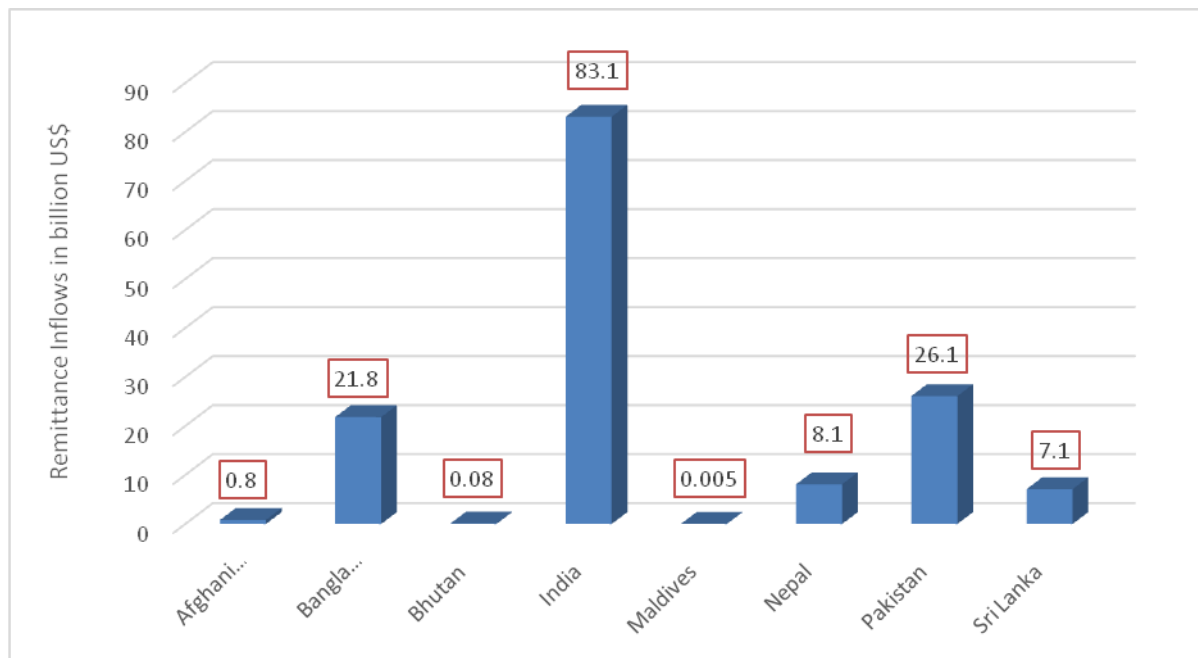
Source: The World Bank Data.

1.1 Objective of the Study

The present study is a modest attempt to investigate the relationship between wage remittances and economic growth in the SAARC region. Using panel data over the period of 2011 to 2020, the objective of the study is to analyze the impact of wage remittances on economic development

of the SAARC countries. The empirical analyses are performed employing a panel regression approach. All the data included in the study have been collected from the World Bank.

The organizations of this paper are as follows. Section 2 contains review of literatures, section 3 includes empirical framework, section 4 presents the current features, section 5 discusses the findings of the analysis, and finally, section 6 incorporates the conclusion and suggestions.

2. Review of Literatures

To understand the relationship between remittances and economic development across the world, we reviewed some studies that have been conducted on developing economies.

Chami et al. (2003) studied the role of remittances for capital development employing the panel data of 113 countries for the period of 1970 to 1998. The results identify the significant negative long-run influence of workers' remittances on economic growth, while the remittances are not considered as a source of capital for economic development.

Fayissa and Nsiah (2008) analyzed the impact of remittances on economic growth using panel data from 1980 to 2004 for 37 African countries and the results indicate a significant positive relationship between remittances and economic growth. This study concludes that in financially less developed countries, remittances promote economic growth and act as an alternative source of investment financing.

Mohammed (2009) explored the workers' remittances and economic growth relationship in seven MENA countries considering the panel data regression from 1975 to 2006. The findings show the positive and significant relationship between remittances and economic growth in MENA countries.

Das and Chowdhury (2011) empirically checked the impact of workers' remittances on economic growth using the panel data over the period of 1985 to 2009 of 11 top remittance recipient developing countries. Performing panel cointegration and pooled mean group approach, the outcomes show that a significant positive relationship exists between remittances and economic growth. They also pointed out that the remittances should be used more in the productive sector by the proper policy implications.

Jawaid and Raza (2012) investigated the effect of workers' remittances on economic growth for five South Asian countries (Pakistan, India, Bangladesh, Sri Lanka & Nepal) utilizing time-series data from 1975 to 2009. The results suggested that a positive relationship exists between remittances and economic growth in all countries except Pakistan.

Lubambu (2014) studied the role of remittances in the developing countries after the global financial crisis in 2008. The findings of the study explain that remittances have become the major source of foreign currencies in the developing countries and also state that the nexus between remittances and development shows the complex relationship due to migration while global interdependence is found to be at all levels of social, economic and political aspects.

Wadood and Hossain (2015) observed the overseas remittances and economic growth relationship in Bangladesh using time series data from 1972 to 2013. This study concluded the existence of the long-run relationship between remittance and economic growth while the causality is running from remittance to economic growth.

Meyer and Shera (2017) carried out the study that analyzed the effect of remittances on economic growth in six European developing countries (Albania, Bulgaria, Macedonia, Moldova, Romania, and Bosnia Herzegovina) considering panel data for the period 1999-2013 and the finding of the study revealed that remittances have a significant positive effect on economic growth.

Olayungbo and Quadri (2019) examined the relationship between remittances and economic growth using panel data for the period of 2000 to 2015 of 20 sub-Saharan countries. The results of this study indicate that remittances and financial development have the positive association with economic growth both in short run and long run.

Lacheheb and Ismail (2020) conducted study to identify the relationship between remittance and economic growth for the panel of 93 low income and middle-income countries over the period 2009 to 2017. This study finds the result that remittance shows significant negative relationship with economic growth after removing outliers.

Sutradhar (2020) investigated the influence of remittances on economic growth of four South Asian countries, namely Bangladesh, India, Pakistan and Sri Lanka. The empirical study revealed that remittances have a negative influence on output growth in Bangladesh, Pakistan and Sri Lanka while it has a positive influence on growth in India. This study also indicated that a joint significant and negative effect of remittances on economic growth exists in these four countries.

After carefully reviewing the different studies that analyzed the remittances-economic growth relationship around the world, it is required to revisit the issue of remittances and economic development relationship in the South Asian region using recent data, since most of the SAARC countries are the high remittance recipients.

3. Empirical Framework

For the econometric analysis, the dependent variable is the national income of the economy and independent variables in our considerations are remittances, trade balance, consumption, investment, population and external debt. The natural log of per capita income has been considered as a proxy of national income. Proxy of independent variables are natural log of remittances, trade balance as percent of GDP, consumption as percent of GDP, investment as percent of GDP, population growth and external debt as percent of GDP. We expect the sign of remittance, trade balance, consumption, investment to be positive and the sign of population and external debt to be negative.

The notations of variables are mentioned below:

PCIL = Natural log of per capita income

REML = Natural log of wage remittances

TRBPGDP = Trade balance as percent of GDP

CONPGDP = Consumption as percent of GDP

INVPGDP= Investment as percent of GDP

POPG = Population growth with respect to previous year

EDPGDP = External debt as percent of GDP

$PCIL = \beta_0 + \beta_1 REML + \beta_2 TRBPGDP + \beta_3 CONPGDP + \beta_4 INVPGDP + \beta_5 POPG + \beta_6 EDPGDP$ (1)

We will apply three econometric models as follows:

1. Pooled regression model

2. Fixed effect or LSDV model

3. Random effect model

The major problem of pooled regression model is that it does not distinguish between various countries that we have. The fixed effect model allows heterogeneity among the countries to have its own intercept value. In case of random effects model, it assumes all countries have a common mean value for the intercept.

Model (1) presented above is just general shape of the equation that will be tested. The panel data consisting of repeated observations of the same unit have been utilized for the countries of SAARC region in our study. The data set mainly covers the most recent decades' annual data from 2011 to 2020. Our panel data is balanced which allows control of variables, which cannot be observed and measured, for example, cultural factors among countries.

A fixed effect model (FE) considers explanatory variables as non-random. This fact is in contrast with the random effects model (RE) which considers explanatory variables are derived from random events. In panel data analysis, the concept "fixed effects estimator" is applied to identify unobservable time invariant effects in the regression model parameters. A FE model is suited to study the type of impact factors which change over time. This technique explores the relationship between independent variables and dependent variable within the same unit. It is logical that every country has its own individual characteristics that probably can affect the independent variables. In case of FE, we assume that the variables are influenced by an individual characteristic. In terms of econometrics, we talk about the correlation between the error term and explanatory variables. FE techniques destroy the effect of these characteristics of the explanatory variables, so we can estimate the net effect of independent variables. The important characteristic of FE model is that these effects are unique to each country, so there should be no correlations with the characteristics of other countries. Every country is different from other country, so the constant error term should not be correlated with others. FE models are usually incorporated to examine the factors of change within an entity.

The concept "random effects model" (RE) is based on the logic that the difference between the units (countries) is random and uncorrelated with the explanatory variables included in the model. The fundamental difference between the FE and RE is the link between the individual effects and regressors in the model. In fact, such effects might be random or to some extent correlated with the explanatory variables.

## 4. Current Features of Remittance Inflow in Bangladesh
The following part discusses on the very recent past features of remittance inflows in Bangladesh when the country as well as the other countries of the world have deeply suffered from the Covid-19 pandemic outbreak. As South Asian countries are the high remittance recipient

countries, Bangladesh like other countries of this region have also experienced large remittance inflows by the more or less same causes during the pandemic period.

Bangladesh basically exports semi-skilled and unskilled migrant workers in the international labor market. In the Covid-19 pandemic situation, the demand for labor, mainly less-skilled labor, has been reduced across the world and recently a huge number of expatriates has returned home who have been terminated from their jobs. The main reason behind the increased remittance inflow in recent time could be the fact that the migrant workers have returned home with their entire lifelong savings. Another reason for the huge remittance inflows could be the reduced use of the illegal channel for sending money from abroad due to the Covid-19 outbreak.

Around 60% of workers' remittance to the country comes from Middle East countries. Unlike other parts of the world, the Covid-19 spread-out in Middle East countries were not so severe and hence the remittance inflows were not largely affected by the pandemic situation, although a huge number of Bangladeshi migrant workers have been losing their job around the world. In the early stages of the pandemic (March-May, 2020), workers' remittance inflows had shown a declining trend compared with the same period of the previous year (2019). After that, remittance inflows have been surprisingly high. In the month of July 2020, remittance volume reached its highest ever record for a single month. In March 2020, the remittance inflow growth was -12.51% compared with the same month of the last year. While the remittance inflow growth was -13.93% in May, in June the growth jumped to 33.94% and in July its growth peaked with a tremendous increase of 62.71%.

Figure 2. Monthly Remittance Inflow Volume in Bangladesh
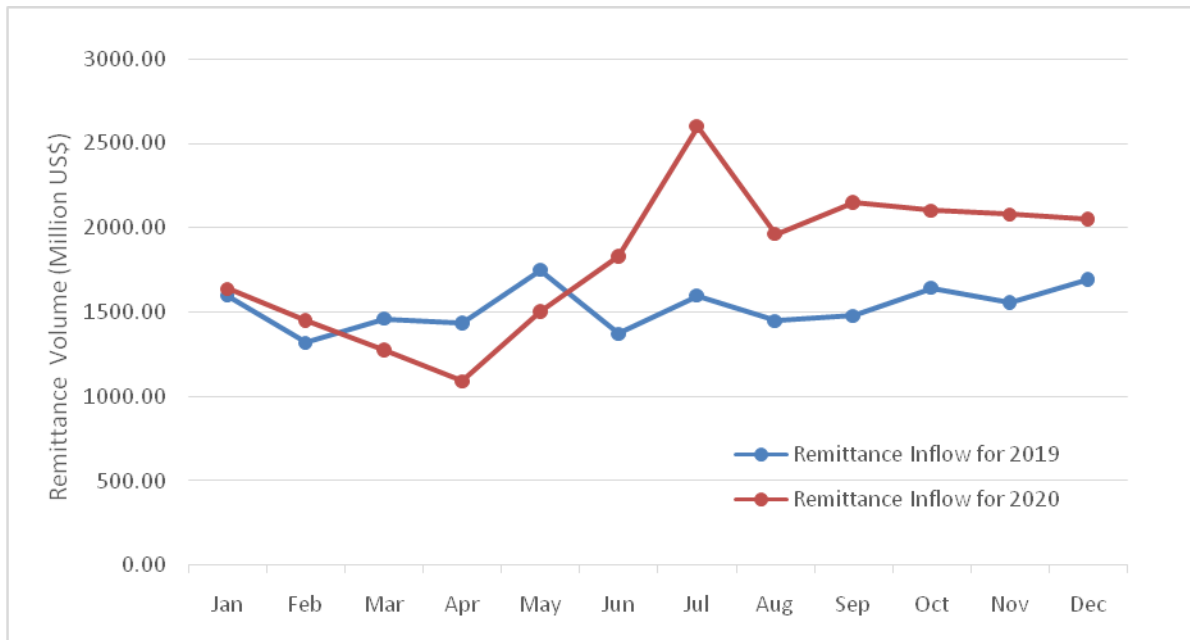
Source: Bangladesh Bank (BB).

5. Results and Discussions

This portion of the paper describes the descriptive statistics, multiple regression analysis, results of diagnostic tests followed by a discussion of the outcomes.

Table 1. Descriptive Statistics

	PCIL	REML	TRBPGDP	CONPGDP	INVPGDP	POPG	EDPGDP
Mean	7.53	21.18	-9.73	67.96	30.43	1.73	38.33
Median	7.36	22.65	-7.14	69.49	30.01	1.20	24.19
Maximum	9.27	25.15	16.61	89.16	69.48	4.57	130.74
Minimum	6.20	14.91	-33.69	27.74	9.74	-0.27	12.35
Std. Dev.	0.82	3.28	10.91	16.20	13.34	1.17	30.65
Skewness	0.42	-0.75	-0.23	-0.55	0.68	0.95	1.54
Kurtosis	2.41	2.15	3.27	2.50	3.33	3.25	4.31
Jarque-Bera	3.5101	9.9447	0.9351	4.8835	6.5819	12.2534	37.4925
Probability	0.1729	0.0069	0.6265	0.0870	0.0372	0.0022	0.0000
Observations	80	80	80	80	80	80	80

Source: Author's calculation by using the World Bank data.

From the descriptive statistics table 1, we found only PCIL and TRBPGDP follow normal distribution. Standard tests for stationary are mostly applicable in case of large samples. In this study, stationary test has not been done as the sample size is very small.

Table 2. Evaluations of the Model

Estimation Method	Pooled Regression		Fixed Effects		Random Effects	
	Coefficient	P-value	Coefficient	P-value	Coefficient	P-value
β_0	8.9571	0.0000	4.3270	0.0004	8.9571	0.0000
REML	0.0283	0.3608	0.1202	0.0268	0.0283	0.0071
TRBGDP	0.0034	0.7381	0.0011	0.8850	0.0034	0.3157
CONPGDP	-0.0366	0.0000	0.0021	0.6762	-0.0366	0.0000
INVPGDP	-0.0012	0.8991	0.0064	0.2466	-0.0012	0.7030
POPG	0.1219	0.1562	0.1389	0.0006	0.1219	0.0000
EDPGDP	0.0084	0.0010	0.0021	0.3624	0.0084	0.0000
F-Statistic	37.5553		202.8255		37.5553	
Adjusted R-Squared	0.7351		0.9707		0.7351	

Source: Author's calculation by using the World Bank data.

After estimating pooled regression, the different diagnostic tests are employed in order to check the assumptions of OLS like; normality, autocorrelation, multicollinearity and heteroscedasticity. The estimated residuals follow all the OLS assumptions, as the pooled regression denies the heterogeneity among countries, we will not consider the pooled regression analysis for our interpretation. We presented in table 2, the evaluations based on three different models (OLS, FE

and RE). In table 2, the estimation shows the same result in pooled and random effect estimation, it may happen when the models have some variables that change over time. While the Fixed effects model results show the somewhat different picture although all the models express the impact of remittances on economic growth where it has a clear indication that remittances have a positive impact on economic development. So far, as the pooled regression accepted the homoscedasticity assumption, but in practice, there exists heterogeneity among countries and that's why pooled regression estimations have not been used in our interpretation. We will choose one of the remaining models i.e., fixed effects model and random effects model by applying the Hausman test. The null hypothesis is

H_0: The random effects model is the best fitted model

Against alternative hypothesis

H_1: The fixed effect model is the best fitted model

Table 3. Correlated Random Effects-Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section Random	595.1900	6	0.0000

Source: Author's calculation by using the World Bank data.

In table 3, the Hausman specification test indicates the result that the null hypothesis of the random effects model being the best fitted model has been rejected at highly statistically significant level. Therefore, it is suggested that the fixed effects model is the best fitted one which represents the remittances and economic growth relationship appropriately.

The best fitted model is as follows:

PCIL = 4.3270 + 0.1202 REML + 0.0011 TRBPGDP + 0.0021 CONPGDP + 0.0064 INVPGDP + 0.1389 POPG + 0.0021 EDPGDP   (2)

A 1% increase in remittance growth is associated with a 0.1202% increase in the per capita income growth in SAARC region. The estimated model explains 97% of the total variation in per capita income growth by the considered explanatory variables.

6. Conclusion and Suggestions

The findings of the study indicate that wage remittances have significant positive influence on economic growth in the SAARC region, although the impact is not very substantial. In this region, remittances are mostly used to meet up the household expenses rather than being invested in income generating activities. Therefore, remittance inflows should be utilized in promoting savings in order to boost up domestic investments.

The inflow of foreign currencies from the expatriates plays an important role in the economic development and is considered as a major source of international reserves in comparison with export earnings from goods and FDI inflows respectively. Remittances have set up the transitional driving force of economic growth and poverty reduction in this region. Since remittances increase the ability to pay for import payments, build up foreign exchange reserves, and uphold household income, the governments of this region should take proper initiatives to

increase remittance inflows and parallelly establish the necessary scopes for utilizing the remittances in employment creation activities which will foster inclusive economic development.

However, it would be expected that further studies will fulfil the research gap by incorporating more explanatory variables, higher frequency data with a large number of observations and other suitable methodologies.

References

Chami, R., Fullenkamp, C., & Jahjah, S. (2003). Are Immigrant Remittance Flows a Source of Capital For Development? *IMF Working Paper, WP/03/189, IMF Institute.*

Cooray, A. (2012). The Impact of Migrant Remittances on Economic Growth: Evidence from South Asia. *Review of International Economics, 20*(5), 985-998.

Das, A., & Chowdhury, M. (2011). Remittances and GDP Dynamics in 11 Developing Countries: Evidence from Panel Cointegration and PMG Techniques. *The Romanian Economic Journal, XIV*(42).

Fayissa, B., & Nsiah , C. (2008). The Impact of Remittances on Economic Growth and Development in Africa. *Departmentof EconomicsandFinance Working Ppaper Series, Middle Tennessee State University.*

Jawaid, S., & Raza, S. (2012). Workers' Remittances and Economic Growth in South Asia. *MPRA Paper No. 39001.*

Lacheheb, Z., & Ismail, N. (2020). The Impact of Remittance on Economic Growth in Low and Middle Income Countries. *International Journal of Academic Research in Economics & Management, 9*(2), 61-70.

Lubambu, K. (2014). *The Impacts of Remittances on Developing Countries.* Directorate-Generalfor External Policiesofthe Union. Switzerland: European Parliament's Committee on Development.

Meyer, D., & Shera, A. (2017). The Impact of Remittances on Economic Growth: An Econometric Model. *EconomiA, 18*(2), 147-155.

Mohamed, S. (2009). Workers' Remittances and Growth in MENA Labor Exporting Countries. *Working Papers from International Network for Economic Research - INFER, No 2009.10.*

Olayungbo, D., & Quadri , A. (2019). Remittances, Financial Development and Economic Growth in Sub-Saharan African Countries: Evidence from a PMG-ARDL Approach. *Financial Innovation, 5*:9.

Sutradhar, S. (2020). The Impact of Remittances on Economic Growth in Bangladesh, India, Pakistan and Sri Lanka. *International Journal of Economic Policy Studies, 14*(1), 275-295.

Wadood, S., & Hossain, M. (2015). Impact of Overseas Remittances on Economic Growth: Evidences from Bangladesh. *MPRA Paper No. 81657.*

World Bank, 2020. World Development Indicators. World Bank, Washington, DC.