Impact of Overseas Remittances on Economic Growth: Evidences from Bangladesh

Wadood, Syed Naimul and Hossain, Md. Amzad

Associate Professor, Department of Economics, University of Dhaka,
Assistant Professor, Department of Economics, University of Dhaka

1 July 2015

Impact of Overseas Remittances on Economic Growth: Evidences from Bangladesh

Syed Naimul Wadood*
Md. Amzad Hossain**

Abstract

Overseas remittance earnings have become a major source of financial inflow for Bangladesh economy in recent years. However, the advantages of this huge remittance inflow may not be effectively channeled to the economic development via investment and/or efficiency effect. Therefore, the objective of this study is to investigate the nexus between remittances and economic growth in Bangladesh. Using time series data over a 40 year period 1972-2013, this paper investigates the causal link between overseas remittances and economic growth in Bangladesh by employing a number of econometric techniques namely Johansen Cointegration approach, Vector Error Correction (VEC) Model and the Granger Causality test. The cointegration test suggests that there exists a long-run relationship between remittance and economic growth in Bangladesh. Further, the result of Granger Causality shows that remittances do lead to economic growth in Bangladesh.

Key Words: Remittance, Co-integration, Vector Error Correction Model, Johansen test for cointegration, Granger causality test, ECM Stability test

JEL Classification: J01, J61, O4

Introduction

Overseas remittance earnings have become a major source of financial inflow for Bangladesh economy in recent years. Remittance earnings, as equivalent to share of Bangladesh's Gross Domestic Product (GDP), have been consistently on the increase and by 2012 this has reached an equivalent of 12 percent (World Bank, 2012). A slightly fluctuating, but overall sustained inflow like this one for the last four decades, has arguably boosted the economy in many different ways. It has been argued that this has helped employment generation, reduction of unemployment, increases in the foreign exchange reserves and also immensely contributed to an acceleration of overall national economic development (Ministry of Finance, 2014). World Bank (2012) argues

_____

* Associate Professor, Department of Economics, University of Dhaka, Dhaka-1000, Bangladesh
** Assistant Professor, Department of Economics, University of Dhaka, Dhaka-1000, Bangladesh

that remittances contribute to growth of output in the economy by augmenting consumption and investment demand as well as savings. One interesting empirical query that follows from this discussion is, *whether remittance earnings foster economic growth of Bangladesh*.

There are many ways in which remittance inflows can have macro-economic impact on Bangladesh economy. Such as, if major portion of remittance is used as saving, in the long run this can be turn into investment by financial intermediaries. If major portion of remittance is used in health and education by the beneficiary family, this can help to build up human capital. In the long run this can contribute in the economic growth of Bangladesh. Even if the major portion of remittances is used in the consumption, this may contribute to stimulate the aggregate demand of the economy, thus contribute to the growth of output and employment in the short run.

Despite its vital importance, only a scant number of studies have attempted to explore the empirical relationship between remittances and economic growth in Bangladesh. This study aims to fill that gap in the literature.

Literature Review

In the recent years, remittances have been found as one of the important sources of foreign finances following foreign direct investment (FDI), especially for a number of developing countries (Giuliano & Ruiz-Arranz, 2009; Adenutsi, 2011; Rao & Hassan, 2011).

Whether remittances foster economic growth is an unsettled issue amongst economists. Those who argue remittances do not contribute to economic growth point to its expenditure on conspicuous consumption (Rahman et al. 2006), that these are being spent on conspicuous consumption rather than for the accumulation of productive assets (Stahl and Arnold, 1986). On the other hand, those that argue for positive growth-enhancing effects of remittances focus on the multiplier effects of consumption (Stahl and Arnold, 1986), development of the financial institutions that handle remittance payments (Aggarwal et al. 2006), use of remittances as foreign exchange (Ratha 2005), and the role of remittances as an alternative to debt that helps alleviate individuals' credit constraints in countries where micro-financing is not widely available (Guilamo and Ruiz-Arranz, 2006).

A number of studies have attempted to address the impact of remittances on economic growth as well as poverty alleviation. Aggarwal et al. (2006) conducted a study of 99 countries over the period 1975-2003 and find that remittances have a positive effect on bank deposits and credit to GDP ratio. The authors then interpolate the positive effect on economic growth by invoking existing studies showing the positive impact of these two variables on economic growth. Taylor (1992) and Faini (2001) also find a positive association between remittances and economic growth. Taylor (1999) finds that every dollar Mexican migrants send back home or bring back home with them increases Mexico's GNP from anywhere between USD 2.69 and USD 3.17. In contrast, Spatafora (2005) finds that there is no direct link between per capita output growth and remittances. Meanwhile, in one of the larger cross country surveys, Chami et al. (2003) conclude that remittances have a negative effect on economic growth across a sample of 113 countries. The paper argues that there is a negative association between remittances and economic growth as remittances discourage recipients to work. Thus, the low productivity of remaining labors worsens the economic situation in remittance receiving countries.

Remittance is claimed to help reduce poverty as most of this fund is used as income support of the recipient families; often these are poor households in the home countries. In view of that, remittances also help to reduce the income gap in the country of origin (Admas, 1989; Barham & Boucher, 1998; and Docquier & Rapoport, 2003). Besides, Quartey and Blanson (2004) noted that the remittance inflows to Ghana increased during the economic shocks and it helped to reduce the adverse impact of economic shocks on household welfare. In addition, some statistical evidences showed that the remittances have improved the purchasing power on consumption goods (Stahl & Habib, 1989 and Glytsos, 1993) as well as the investment in properties (Durand et al, 1996).

It is to be noted that there is a group of researchers who have found mixed results about the linkage between remittances and economic growth. Glytsos (2005) analyzed that remittances have positive relationship with economic growth. Nevertheless an asymmetric impact of remittances volatility is found in Glytsos's study. The cost of decrease in growth due to remittances is greater than the contribution of remittances to growth. Similar results are found in the studies by Jackman et al (2009) where remittances can bring additional strength to an

economy if it is at upward trend but remittances also can be harmful if it is at downward trend. Therefore, an economy should not rely heavily on remittances as an income source.

The debate on the relationship between remittances and economic growth in the remittance receiving countries still remains unsolved. Furthermore to the best of our knowledge, no study has focused on the relationship between remittance and economic growth in the context of Bangladesh. This study aims to fill the gap.

Trends in Migration and Remittance

Remittances sent by overseas migrants contribute quite significantly to the economic development of the country through augmenting foreign exchange reserves and income. Workers' remittances flow, as equivalent to percentage of GDP, has been showing increasing trend year by year since the inception of manpower export in 1976 (Figure 1). Remittances sent by the overseas migrants have increased from USD 23.71 million in 1976 to USD 14,338 million in 2012-13, preceded by USD 12,734 million in 2011-12 (Bangladesh Bank, 2014). The contribution of remittance to Gross Domestic Products (GDP) has grown from a meager less than 1 per cent in 1977-78 to around 12 per cent in 2012-13.

**Figure 1: Share of remittance as a percentage of GDP**
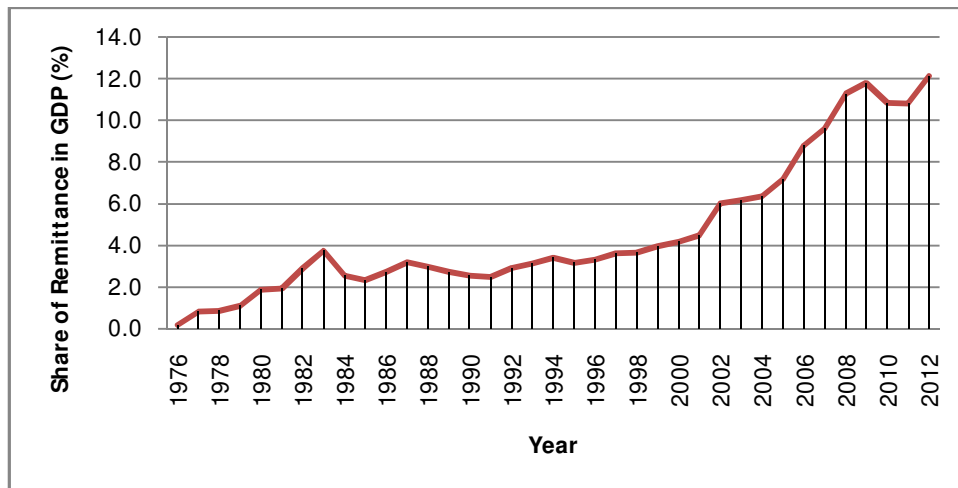
This rapid growth in overseas remittance earnings has been made possible by a rapid increase in overseas migration (here growth of remittance earnings has been principally propelled by growth

in the stock of number of migrant workers, not by growth in remittance per worker (World Bank, 2012)). Being a hugely labor surplus country Bangladesh participates in the supply side of the global labor market. Each year a large number of people of this country voluntarily migrate overseas for both long- and short-term employment. Figure 2 shows the trends in oversees employment from the period of 1976 to 2012. A total number of around 8.30 million manpower has been exported up till 2012 since the inception of manpower export in 1976. Up till 2006 the number of overseas employment grew steadily without a few exceptions. There was a sharp rise in overseas employment in 2007 and 2008 followed by a sharp decline in 2009. This sharp decline can be attributed to the ongoing Global Financial Crisis at that time.

Female migration from Bangladesh is almost an "uncommon" phenomenon. During the period of 1991-1995, only 9,308 females migrated from Bangladesh which constituted only 0.98 percent of the total migrants. The percentage of female migrants dropped to 0.42 percent during the period of 1996-2000 (Siddiqui, 2005). However, Figure 2 shows the trend in female migration from Bangladesh during the period of 2001-2007 which depicts that Bangladeshi migrant workers were predominantly male. Female migrants constituted only 66,076, among a total of 2,408,196 migrants from 2001-2007, which is less than 3 percent of the total migrants of Bangladesh. Recently there have been fast increases in the number of female migrant workers.

Figure 2: Trends in overseas employment
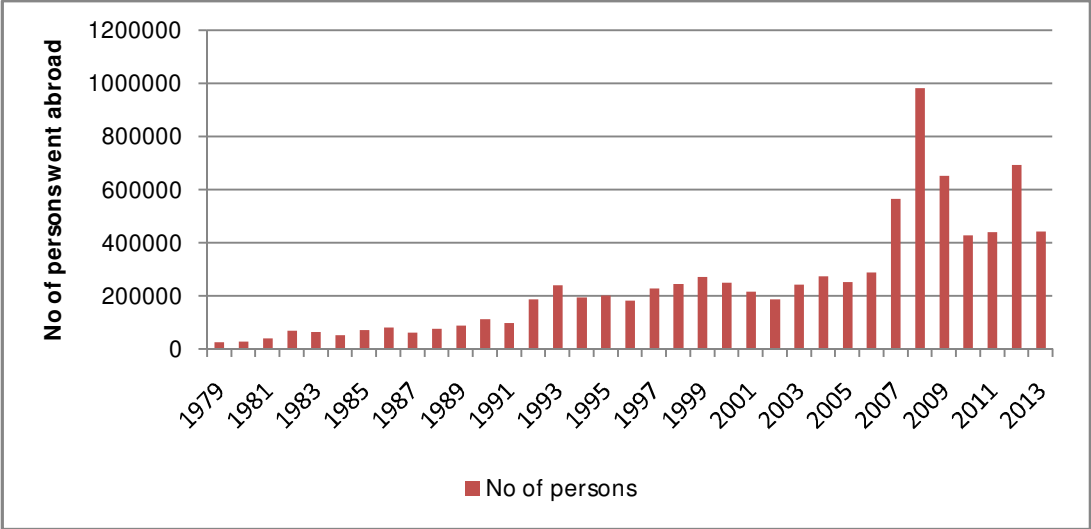
It has been observed that most of the expatriates are working in Saudi Arabia, the U.A.E., Malaysia, the U.K., Kuwait, the U.S.A., Oman and Singapore. Besides, new employment

opportunities for Bangladeshi workers have also been created in Bahrain, Qatar, Jordan, South Korea, Brunei, Mauritius, Italy and other countries. During 1976 to October 2013, Saudi Arabia ranked by far the first and foremost destination for Bangladeshi migrants and accounted for about 30 percent of total manpower export.

Figure 3: Major destination countries
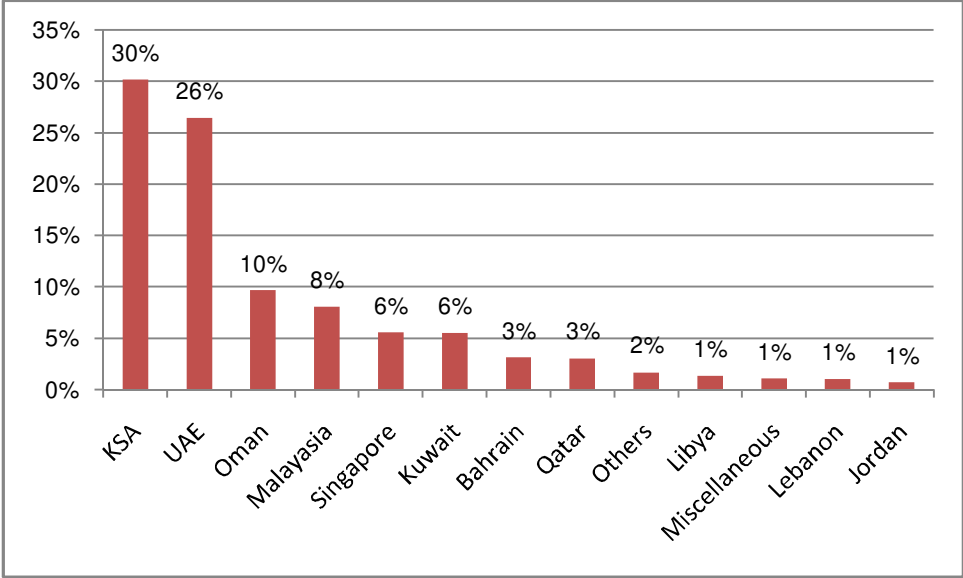
The labour market for Bangladeshi migrants, however, is not static. For example, during the 1970s Saudi Arabia, Iraq, Iran and the Libya were some of the major destination countries. While Saudi Arabia has remained the top destination, Malaysia and the UAE also became important receivers for last several years. Malaysia used to be the second largest employer of Bangladeshi workers. However, since the Asian financial crisis of 1997, the number of Bangladeshi migrants to Malaysia has decreased and the U.A.E. has taken the place (Siddiqui, 2005). By 2013, the UAE and Oman have become the second and third important destinations of Bangladeshi migrants occupying 26 percent and 10 percent migrants, respectively. Saudi Arabia alone constitutes slightly less than one-third share of overseas employment. Saudi Arabia and the U.A.E., both are the destinations of more than half of the exported manpower of Bangladesh. Other important destinations of Bangladeshi migrants are the Kuwait, Bahrain, Qatar, Oman etc.

Figure 4: Trend in overseas expatriates classified by major countries

.
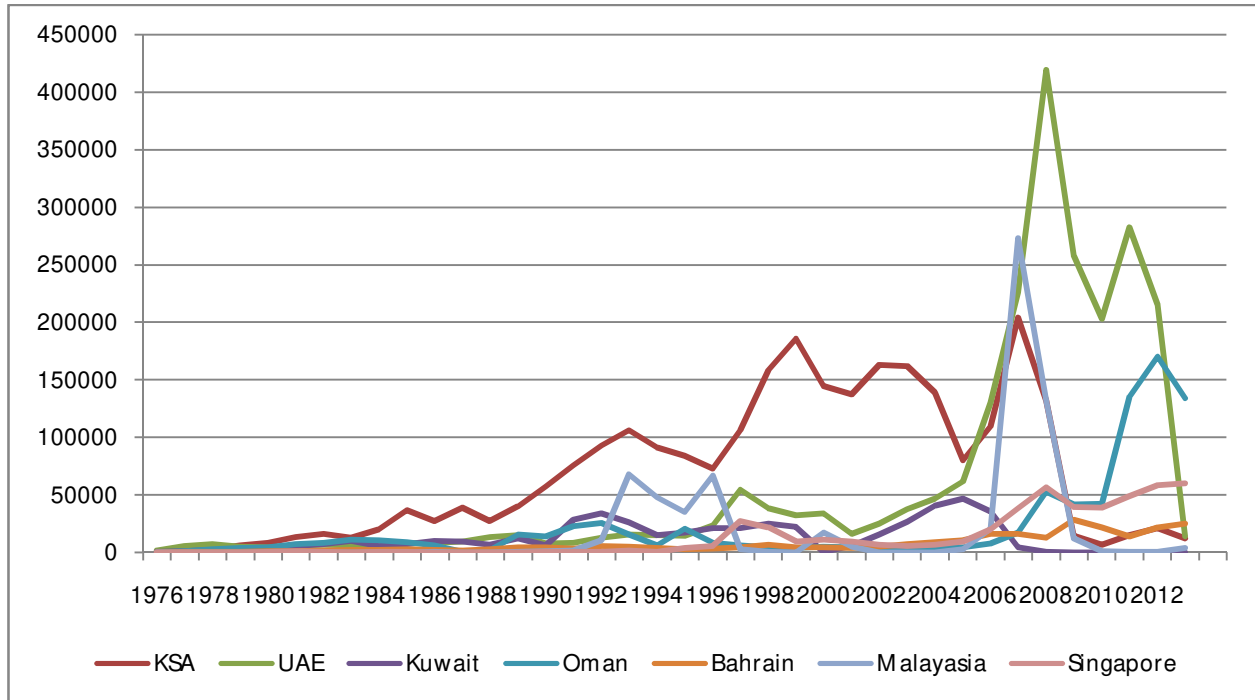
It is also noticed that every year the number of overseas employment classified by destination countries vary according to demand and supply conditions in the international manpower market as well as negotiations and/or conditions set by different government agencies.

Various categories of migrant workers from Bangladesh like professionals, skilled, semi-skilled, and unskilled labor force are employed in different countries. Doctors, engineers, teachers and nurses are considered as professional workers, while manufacturing or garment workers, drivers, computer operators and electricians are considered as skilled. Tailors and masons are considered as semi-skilled, and housemaids, agricultural workers, hotel workers and menial workers as unskilled workers. About 8.7 million Bangladeshi workers got overseas employment during 1976 to 2013. Out of them, the highest 51.3 percent are unskilled worker followed by 31 percent of skilled, 15 percent of semi-skilled and 2.5 percent of professional (BMET, 2014).

The Model

The model proposed in this paper is built upon the following neoclassical aggregate production function with remittance as an additional variable.

$$GDPPC = f(Investment, Remittance)$$

Where

GDPPC= Gross Domestic Product (GDP) Per capita

Investment= Investment as a share of GDP

Remittance= Remittance as a share of GDP

For the estimation purpose, the above equation can be represented by the following logarithmic reduced form equation:

$$lnGDPPC_t = \alpha_0 + \alpha_1 investment_t + \alpha_2 remittance_t + u_t$$

The particular co-efficient of concern is α_2, which shows the impact of natural log of remittance share of GDP on natural log of per capita GDP.

Data

All the data used in this model has been taken from the World Development Indicators (of the World Bank) over the period 1976-2012. The GDPPC data will be taken in logarithmic form. This is because the first difference of a logarithmic series shows the growth of the series.

Methodology

Stock and Watson's (1988) observation that co-integrated variables share common stochastic trends provide a very useful way to understand co-integration relationships (Enders, 2004). If the variables are co-integrated, then there is a valid relationship and any divergence from a stable equilibrium state must be stochastically bounded (Banerjee et al., 1993). A necessary condition for integration, however, is that the data series for each variable exhibited similar statistical properties, that is, they were integrated to the same order with evidence of some linear combination of the integrated series.

The first step taken will be the analysis of the dynamic properties of the variables, aimed at understanding if the variables are integrated to the same order, by testing for the presence of unit roots. Two different tests will be applied: the Augmented Dickey-Fuller (ADF) test, and the Phillip-Perron (PP) test. These were run with and without a time trend and a constant. The ADF is the most commonly used test, but sometimes it behaves poorly, especially in the presence of serial correlation. Dickey and Fuller corrected for serial correlation by including lagged differenced terms in the regression, however, the size and power of the ADF has been found to be sensitive to the number of these terms. The Phillips and Perron tests are non parametric tests of the null of the unit root and are considered more powerful, as they use consistent estimators of the variance.

The presence of a unit root in each of the series will indicate that co-integration tests in one form or another can be performed for the four variables in the present study. A vector of variables is said to be co-integrated if each variable in the vector has a unit root in its uni-variate representation, and some linear combination of these variables is stationary (Engle and Granger, 1987). Three alternative approaches for testing co-integration have been discussed in the literature. These are the two-step procedure, developed by Engle and Granger (1987), the dynamic ordinary least square (OLS) procedure developed by Stock and Watson (1988), and the system approach developed by Johansen (1988, 1991).

Engle and Granger (1987) stated that a linear combination of two or more non-stationary series may be stationary and if such a stationary linear combination exists then the non-stationary time series are said to be cointegrated. More specifically, if two variables X_{1t} and X_{2t} contain stochastic trends and are integrated of the same order, say I(1), the variables are said to be cointegrated if the equation

$$x_{1t} - \beta x_{2t} = u_t$$

is I(0). The stationary linear combination is called the cointegrating equation and may be interpreted as a long-run equilibrium relationship among the variables.

Although the Engel-Granger procedure is a single-equation, regression residual-based test, it does have several shortcomings. First, it has no systematic procedure for separate estimation of the multiple co-integrating vectors. Second, it relies on a two-step estimator. Various methods

have been developed that avoid these problems. The Johansen (1988) and Stock and Watson (1988) maximum likelihood estimators circumvent the use of two-step estimators and can estimate and test for the presence of multiple co-integrating vectors. Furthermore, these estimators permit the test of restricted versions of the co-integrating vector(s) and the speed of adjustment parameters. Both these procedures depend mainly on the relationship between the rank of the matrix and its characteristic roots (Enders 2004).

Therefore, Johansen's approach will be used in this study because of its useful properties, particularly that it does not depend upon the method of normalization chosen. Johansen's method is a maximum likelihood technique that assumes the model is fully and correctly specified. For this method, knowledge of both the short run and the long-run dynamics of the system are required.

Co-integration between the variables concerned implies while the variables may behave in a differently in the short run, they will converge toward a common behavior in the long run. If this property is verified, the characteristics of the dynamic relationship between the variables can be described by a **Vector Error Correction Model** (VECM). The short-run adjustment parameter of this type of model can be interpreted as a measure of the extent of error correction, while the long run multiplier can be interpreted as a measure of the degree of transmission of one variable to the other (Prakash, 1999).

Another important implication of cointegration and the error correction representation is that cointegration between the variables implies the existence of causality (in the Granger sense) between them in at least one direction (Granger, 1988). Granger (1969) proposed an empirical definition of causality based only on its forecasting content: if x_t causes y_t then y_{t+1} is better forecast if the information in x_t is used, since there will be a smaller variance of forecast error. This definition has caused considerable controversy in the literature as it really indicates precedence, rather than instantaneous causality that most economists profess. Nevertheless, if two variables are integrated, then one variable is found to Granger-cause the other and/or vice versa. Therefore, Granger causality provides additional evidence as to whether, and in which direction, transmission is occurring between two series.

 Therefore, the analysis will be started by investigating the dynamic properties of the variables, through tests for the presence of unit roots, and then be proceeded with co-integration tests, and

with the specification of ECMs and **Granger causality test**. Various post-estimation tests will also be performed.

Results

The order of integration for all the variables of concerned namely, GDP per capita, Share of Investment in GDP and Share of Remittance in GDP has been determined employing ADF test and PP tests with and without trend. Table 1 presents the unit root test results. Both of the ADF and PP tests suggest that there is insufficient evidence to reject the null hypothesis of non-stationarity of all of the variables. This is true for both types of specifications - with and without a deterministic trend. However, both the tests reject the null hypothesis of non-stationarity when applied to the differenced series, implying that all series are $I(1)$.

Table 1: Stationarity tests

Variables	Augmented Dicky-Fuller Test				Phillip-Perron Test				Order of Integration
	In Level		In First Difference		In Level		In First Difference		
	Without Trend	With Trend	Without Trend	With Trend	Without Trend	With Trend	Without Trend	With Trend	
GDP per capita	0.61 (0.99)	-2.19 (0.49)	-5.50 (0.00)	-5.58 (0.00)	0.09 (0.97)	-2.45 (0.35)	-8.34 (0.00)	-8.37 (0.00)	I(1)
Investment	-0.79 (0.82)	-2.81 (0.19)	-6.65 (0.00)	-6.62 (0.00)	-0.87 (0.79)	-2.84 (0.18)	-7.251 (0.00)	-7.18 (0.00)	I(1)
Remittance	0.86 (0.99)	-0.89 (0.95)	-4.40 (0.00)	-4.82 (0.00)	0.87 (0.99)	-0.73 (0.97)	-4.53 (0.00)	-4.78 (0.00)	I(1)

Once it is identified that all the variables are integrated of order one, test for cointegration has been performed by applying the Johansen method. Both the trace test and maximum Eigen value test (Table 2) suggest one cointegrating relation between the series, implying a long-run relationship between the variables.

Table 2: Johansen tests for cointegration

	Null Hypothesis	Alternative Hypothesis	Trace Statistics	5 percent Critical	1 percent Critical	Number of cointegrating

				value	value	equation
λ TRACE TEST	$r = 0$	$r \geq 1$	32.83	29.68	20.04	1
	$r \leq 1$	$r \geq 2$	11.20	15.41	6.65	
λ MAX TEST	$r = 0$	$r \geq 1$	21.63	20.97	20.04	1
	$r \leq 1$	$r \geq 2$	10.48	14.07	6.65	

Once it is found that there has been cointegration among the variables of concern, Granger causality test is performed to see the direction of causality. The test statistic (Table 3) suggests that while the null hypothesis that the remittance does not Granger causes the GDP per capita can be safely rejected, the null hypothesis that capital does not Granger cause the GDP per capita can't be rejected. However, it is found that Capital and Remittance jointly affects GDP per capita.

Table 3: Granger causality test result

Null Hypothesis	Chi-Square	p> Chi-Square
Capital does not Granger causes GDP per capita	1.64	0.44
Remittance does not granger causes GDP per capita	19.61	0.00
Capital and Remittance do not granger causes GDP per capita	23.85	0.00

To study the short term adjustment behavior an error correction model will be estimated. Once it is determined there is one cointegrating equation between the domestic variables concerned, the parameters of the cointegrating VECM for these variables will be estimated. From the VECM (Table 4) it can be seen that the adjustment coefficients have the correct signs and their magnitudes imply rapid adjustment toward the equilibrium. The estimate of the error correction coefficient in GDP equation is -0.28 and is statistically significant. That means, almost 28 percent of the error term is being corrected each period.

Table 4: Result of Vector Error Correction Model (VECM)

VARIABLES	(1) Δlngdppc	(2) Δinvestment	(3) Δremittance
ecm(-1)	**-0.287*****	**2.536****	**0.961**
	(0.0898)	**(1.047)**	**(0.932)**
LD.lngdppc	0.256*	3.911**	0.553
	(0.146)	(1.702)	(1.514)
LD.investment	-0.00725	0.248*	0.0731
	(0.0127)	(0.148)	(0.131)
LD.remittance	-0.00709	0.185	0.345
	(0.0212)	(0.247)	(0.220)
Constant	0.0569***	-0.0375	0.116
	(0.0161)	(0.188)	(0.167)
Observations	35	35	35

Standard errors in parentheses.
LD stands for Lagged Difference. Δ Stands for first difference
*** p<0.01, ** p<0.05, * p<0.1

Finally it can be seen that the long-run relationship among the variables of concern (Table 5). It is also seen that investment has a significantly positive impact on GDP per capita and it is statistically significant. This is in line with the classical growth model such as Harrod-Domar model and which suggests that investment promotes growth. It can also be seen that Remittance has a significantly positive impact on GDP per capita.

Table 5: Cointegrating equation

Dependent Variable: GDP per capita			
Regressor	Coefficient	Standard Error	t-Ratio[p-value]
Share of capital	0.023	.011	1.98[.048]
Share of Remittance	0.98	.016	6.00[.000]
Constant	4.79	.	.

N.B: Johansen normalization restriction imposed

Next some VECM post-estimation tests are performed. First the Eigen value stability condition in the error-correction model (VECM) fit is checked. This test allows us to verify whether the number of cointegrating equations is misspecified or whether the cointegrating equations which are assumed to be stationary are actually non-stationary. In this type of test, the companion

matrix of a VECM with k endogenous variables and r cointegrating equations has k-r unit eigenvalues. If the process is stable, the moduli of the remaining eigenvalues are strictly less than one. Our VECM specification imposes 2 unit moduli. The graph of the eigenvalues shows that there is only two unit Eigen value and none of the remaining eigenvalues appears close to the unit circle (Figure 5). Thus, the stability check does not suggest that our model is misspecified.

Figure 5: VECM stability test

The VECM specification imposes 2 unit moduli
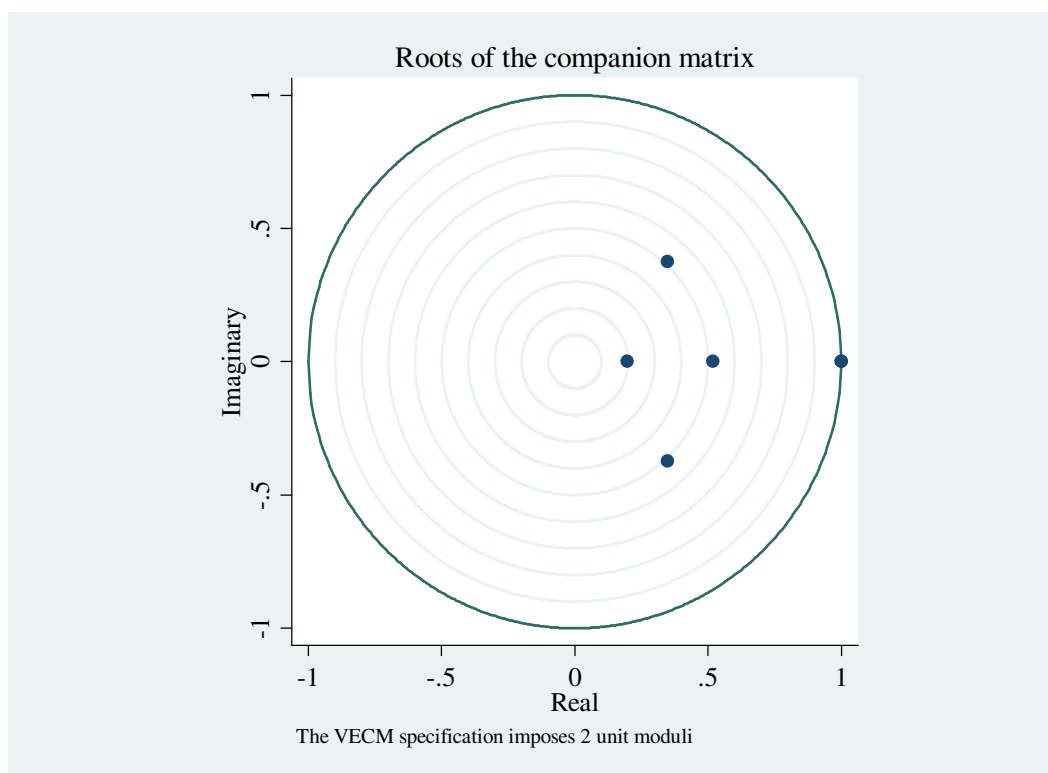
Conclusion and Policy Suggestions

In this paper an investigation has been undertaken to explore the causal relationship between remittances and economic growth in Bangladesh using data for the period 1976 to 2012. For this investigation, various time series econometric techniques such as unit root test, cointegration, Vector Error Correction Model and causality have been employed. The analysis reveals that the two time series, remittances and economic growth, are both I(1) and are cointegrated. The causality between remittances and economic growth are examined afterwards. The results show that there is a one-way causal relationship from remittances to economic growth in Bangladesh.

The causality of remittances on economic growth in Bangladesh could be due to a number of factors, including the multiplier effect, whereby injected capital through consumption indirectly contributes to economic development and growth through the flow on effect. Additionally, despite remittance spending on investment being low, even a small portion can help to alleviate liquidity constraints and directly contribute to growth. This is especially compelling for Bangladesh given that employment overseas helps somewhat in alleviating unemployment pressures at home.

The empirical results of this study reveals therefore that appropriate policy to explore more foreign employment and more proficient use of remittances would help the economic development of Bangladesh. In essence, the beneficial consequences of foreign remittances may lead us towards the path of adopting a "foreign employment" policy so as to "bring in" more of the same. In this regard, some policy considerations under different objective headings are offered below.

First, high fees charged by financial institutions, coupled with insufficient ATM facilities are still pushing some workers into remitting money home through the Hundi system (D8 2008). While the Bangladesh Ministry of Finance made headway in curtailing Hundi transfer when they introduced strict time limits on official transfers and promoted electronic banking, competition within the banking sector needs to be encouraged to mitigate fees and harness a greater number of formal remittances.

Second, there are also significant gender issues that must be addressed if migration and remittance payments are to be effectively utilized. Women are of particular concern in the workforce. Currently, women migrants are an immensely unutilized asset. This is largely due to government restrictions on the number of unskilled and semi-skilled women who can migrate.

Third, the overseas migration in Bangladesh traditionally have been limited to mostly Middle East and only recently in some South-East Asian countries. But as the macroeconomic data suggests remittance received from countries like the USA, the UK and Italy has been significant despite smaller migration trends to these countries. This may imply higher remittance earning per migrant worker in these countries compared to the traditional ones in the Middle East. Therefore GOB should take steps to explore new market opportunities.

Fourth, It is also important that institutions introduce new savings instruments as well as further opportunities whereby migrants can channel their remittance funds into productive sectors of the economy (World Bank 2005). Education in financial planning and business development/management would be effective in harnessing the development impact of remittances. As mentioned earlier, remittance income is used primarily for consumption purposes. While this is valuable to the economy via the multiplier effect, channeling remittance into investment need to be prioritized.

Finally, while it is clear that remittances improves welfare, it is the households that are better able to afford the initial cost of the overseas migration that benefit the most (World Bank 2007). Policy initiatives such as the expansion of social programs in microfinance and skills development, and the lowering of interest rates on pre-departure loan schemes (World Bank 2005) could provide the necessary help for struggling households not yet meeting the initial cost of migration.

References

Adams, R. H.Jr. (1989). "Workers' Remittances and Inequality in Rural Egypt". Economic Development and Cultural Change, 38, 45-71.

Adenutsi, D. (2011). "Financial Development, International Migrant Remittances and Endogenous Growth in Ghana", Studies in Economics and Finance, 28(1), 68-89.

Aggarwal, Reena, Demirguc-Kunt, Asli and Martinez Peria, Maria Soledad (2006). "Do Workers' Remittances Promote Financial Development?", World Bank Policy Research Working Paper No. 3957.

Banerjee, A., Dolado, J., Galbraith, J. W. and Hendry, D. F. (1993), "Co-integration, Error Correction, and the Econometric Analysis of Non-Stationary Data", Oxford University Press, New York.

Bangladesh Bank (2014), "Annual Report 2012-2013", Bangladesh Bank, Dhaka.

Barham, B. & Boucher, S. (1998). "Migration, Remittances and Inequality: Estimating the Net Effects of Migration on Income Distribution". Journal of Development Economics, 55, 307-331.

BBS (2014), "Statistical Pocketbook of Bangladesh 2013", Bangladesh Bureau of Statistics, Statistics and Information Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2011), "Preliminary Report on Household Income & Expenditure Survey- 2010", Bangladesh Bureau of Statistics, Statistics and Information Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

BMET (2014). Bureau of Manpower Employment and Training, Government of the Peoples' Republic of Bangladesh, Dhaka. (From http://www.bmet.org.bd) ,accessed on 14th December, 2014.

Chami, R., Barajas, A., Cosimano, T., Fullenkamp, C., Gapen, M. &Montiel, P. (2003)."Macroeconomic Consequesces of Remittances".Occational Paper No.259, Internationl Monetary Fund.

D8 Secretariat. (2008). "High Fees Drive Bangladesh Remittance Into Informal Channels", Developing 8 Organisation for Economic Cooperation.

Docquier, F.& Rapoport, H. (2003). "Remittances and Inequality: A Dynamic Migration Model". Bonn, Germany: IZA discussion paper 808.

Durand, J., Kandel, W., Parrado, E.A. & Massey, D.S. (1996). "International migration and development in Mexican communities". Demography, 33, 249-269.

Enders, W., (2004), "Applied Econometric Time Series", John Wiley & Sons, New\ York.

Engle, R. E. and Granger, (1987) C. W. J., "Cointegration and Error-Correction: Representation, Estimation, and Testing", Econometrica, Vol. 55, pp.251 – 276.

Faini, R. (2001). "Development, Trade, and Migration". Washington D.C.: IMF.

Giuliano, P. & Ruiz-Arranz, M. (2009)."Remittances, financial development and growth"Journal of Development Economics, 90, 144-152.

Glytsos, N. P. (2005). "The contribution of remittances to growth: A dynamic approach and empirical analysis". Journal of Economic Studies, 32 (6), 468-496.

Glytsos, N.P. (1993). "Measuring the income effects of migrant remittances: a methodology approach applied to Greece".Economic Development and Culture Change, 42, 131-168.

Jackman, M., Craigwell, R. & Moore, W. (2009). "Economic volatility and remittances: evidence from SIDS". Journal of Economic Studies, 36(2), 135-146.

Johansen, S.,(1988) "Statistical Analysis of Cointegration Vectors", Journal of Economic Dynamics and Control, Vol. 12, pp.231 – 254.

Johansen, S.,(1991) "Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models", Econometrica, Vol. 59, pp. 1551 – 1580.

Ministry of Finance (2014), "Bangladesh Economic Review 2014", Economic Advisors' Cell, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh.

Prakash, A.B., (1999), "The Transmission of Signals in a Decentralized Commodity Marketing System". The case of the UK Pork Market, PhD. Thesis, Wye College, University of London.

Quartey, P., &Blanson, T. (2004). "Do migrant remittances minimize the impact of macro-volatility on the Poor in Ghana?" Global Development Network.

Rao, B.B.& Hassan, G.M. (2011). "A panel data analysis of the growth effects of remittances". Economic Modelling, 28 (1-2), 701-709

Ratha, D. (2005). 'Remittances: A Lifeline for Development'. Finance and Development, vol. 42.

Siddiqui, T. (2005). International Labour Migration from Bangladesh: A descent work perspective. Working Paper No.66, Policy Integration Department, National Policy Group, International Labour Office, Geneva.

Spatafora, N. (2005). "Two current issues facing developing countries", World Economic Outlook, International Monetary Fund, Washington, DC.

Stahl, C., & Arnold, F. (1986). "Overseas Workers' Remittances in Asian Development". InternationalMigration Review, vol. 20, no. 4, 899-925.

Stahl, C.W. & Habib, A. (1989). "The impact of overseas workers' remittances on indigenous industries: evidence from Bangladesh". The Developing Economies, 27, 269-285.

Stock, J. and Watson, M.,(1988) "Testing for Common Trends", Journal of American Statistical Association, Vol. 83, pp.1097 – 1107.

Taylor, J.E. (1992). 'Remittances and Inequality Reconsidered: Direct, Indirect and Intertemporal Effects.' Journal of Policy Modelling, vol. 14, no. 2. 187-208.

Taylor, J.E. 1996. "International migration and national development". Population Index, 62(2):181-212.

Taylor, J.E. (1999). "The New Economics of Labour Migration and the Role of Remittances in the Migration Process" International Migration, 37 (1): 63- 88.

The Daily Star (29th December, 2014), "Manpower Export Goes Up 1 pc, Remittance 5 pc: Reveals Refugee and Migratory Movements Research Unit based on BMET statistics", Staff Correspondent.

World Bank (2005). "Migrant Labour Remittances in the South Asia Region." Report No. 31577

World Bank (2007). "Sri Lanka Poverty Assessment: Engendering Growth with Equity, Opportunities and Challenges", Report No. 36568-LK.

World Bank (2012). "Bangladesh: Towards Accelerated, Inclusive and Sustainable Growth Opportunities and Challenges", Report No. 67991, Volume II: Main Report, June, 2012, Poverty Reduction and Economic Management Sector Unit South Asia Region, World Bank.