
EFFECTS OF REMITTANCE AND FDI ON THE ECONOMIC GROWTH OF BANGLADESH

Riduanul Mustafa¹, S.M. Rakibul Anwar²

¹ Lecturer - Economics, Department of Business Administration, Bangladesh Army International University of science and Technology, Comilla, Bangladesh.

² Lecturer - Finance, Department of Business Administration, Bangladesh Army International University of science and Technology, Comilla, Bangladesh

ABSTRACT

This paper aims to investigate the association of Remittance flows and foreign direct investment (FDI) with the gross domestic product of Bangladesh. This paper uses time series data of all the variables and uses econometric approach to carry out the estimation. This paper uses least square estimation (OLS) method with stationary time series data. The finding of the paper is that there is an existence of a positive and robust association of remittance flows and FDI with the gross domestic product (GDP) of Bangladesh

Keywords: Foreign direct investment (FDI), Remittance flows, Gross domestic product (GDP)

INTRODUCTION

Bangladesh is one of the most emerging nations of south Asia. This countries is considered to be one of the fastest growing economy. The most exciting thing about its economy is that instead of many political and economic instability in past days it still managing a GDP growth rate of over 6% for the last half decades(Trading Economics 2016).But the recent trends to a fall in Bangladesh's remittance income(Alo 2017) and instable Foreign Direct Investment(FDI)(j 2015).In this particular paper will try to find out as there is any association of remittance and FDI flows in Bangladesh with its GDP. There are disagreements among the theories about the contribution of FDI and remittances in the economic growth. Many thing that these variables has a little effect on the country's economic growth. While on the other side some other believes of strong association of remittance and FDI with economic growth. This paper has chosen an econometric model to find out association of remittance and FDI with countries GDP and will try to find out a statistically significant result which could go either way.

Literature Review

There is always a curiosity among the policymakers that how remittances and FDI works in the economy. Many considered that they usually plays the same role. For the sustainable economic

growth of Bangladesh, remittance plays a very vital role. But the flows of remittances come in both official and unofficial ways(Siddiqui 2004).IMF study suggest a negative robust association between remittance and GDP growth. Moreover, the research concluded that remittance do not work as capital flows. Remittances are used as a substitute of labor income.(Chami, Fullenkamp et al. 2005).Another study suggest that Income differential between home and host countries is positively associated with remittance(Barua 2007).An empirical study run by IMF, suggest that remittances have a little impact on the economic growth of the recipients country. The study doesn't find any evidence of positive impact of remittance on economic growth while examining on the data of 84 countries(Barajas, Chami et al. 2009). Additional study on the impact of FDI, Remittance and export on real GDP on Bangladesh, India, Pakistan and Sri Lanka also find the evidence of positive impact. The paper uses ARDL model as the data were not stationary at level(Rahman 2009).It is also revealed in another study that incorporation of remittance impact on growth with other growth variable have a significant positive impact on economic growth. This has impact through education and financial sector development(Cooray 2012).While examining the impact of trade liberalization on Bangladesh it been found that trade liberalization has a positive impact on the economic growth of Bangladesh(Manni and Afzal 2012).A positive relation found between remittance and domestic exchange rate. An important finding is that unskilled labor force are the main source of remittance for Bangladesh. But their wages are low with comparison to semi-skilled and skilled workers. While examining the impact of macroeconomic variables in home and host country for remittance flow, it is observed that inflation plays a key role in this matter. It is becoming a great challenge for Bangladesh to maintain a positive growth of remittance with low wage(Begum and Sutradhar 2012).In a different research it is stated that FDI in Bangladesh is not appreciated because of many reasons like uneven ratios of saving and investment.(Saha and Kumar 2012).Another study examines the relationship between FDI, official development assistance (ODA) and remittance also concluded that all these have positive impact on growth when the impact of institution is considered. These factors are contributing for the development of the developing countries. Contribution of aid in growth is not clear but with good bureaucratic environment it seems different. The paper also states that by using 3SLS the observed that robustness of the association is much stronger while institution taken under consideration.(Driffield and Jones 2013).By using multiple regression model is been found evident that domestic investment have positive association with economic growth but growth is not significantly related with FDI and trade openness(Tabassum and Ahmed 2014).Another study conducted to find out the relationship between growth and FDI of Bangladesh also find a significance relationship between these two variable. The paper also stated some factor for which Bangladesh can attract foreign direct investment(FDI).The finding also suggest that Bangladesh not yet successful enough to create favorable environment to attract FDI(Faruk 2015).FDI flows in Bangladesh contributing a lot for economic growth through GDP

,Export and Investment spending. Emphasis is given for policies to protect the flows of FDI from any collapse (Islam 2015).An statistically significant and positive relationship is depicted between economic growth and remittance for Bangladesh by using ARDL(auto regressive distributive lagged) model(Majumder and Donghui 2016).Many researcher concluded that remittance working as a major source of poverty alleviation, But the direct macroeconomic effect is yet to clarify.

Methodology

In this article we wanted to find out whether there exists any relationship between GDP with remittance earning by working group outside the country and Foreign Direct Investment .To estimate the relationship between dependent and independent variables Ordinary Least Square (OLS) estimation process has been chosen .As we know the OLS estimator is best linear unbiased estimator among all estimator(Hill, Griffiths et al.). Which is known as BLUE. That is why we have chosen the OLS estimator for our estimation. Again we will observe the estimation output either they are explaining the population or not. Is there exist a linear or nonlinear relationship between independent and dependent variables. we will also observe that the explanatory variables jointly can explain the dependent variable or not. Which will be explained by the probability of F Statistics. Residuals are also very important factor for biasness of data. So our residuals will pass through some tests like Serial correlation LMtest and Histogram normality test. Finally, we will test Ramsey RESET test to observe the stability of the model. If our estimation shows statistically significant output through all those process then we will reach towards our conclusion about the topic.

Estimation analysis

In our estimation we have chosen OLS estimation process. As we want to observe the influence of external factors on GDP. We have chosen GDP (in million US dollar) as our dependent variable. On the other hand as our explanatory variable we have chosen Remittance (in million US dollar) flows coming from other countries through our factor abroad. We also considered Foreign Direct Investment (FDI as a percentage of GDP) as our explanatory variable. We want to investigate whether this two element has any influential effect on our GDP. The estimation equation is as follows:

$$y = \beta_1 + \beta_2x_1 + \beta_3x_2 + \epsilon_1$$

Arranging our dependent and independent variables as per the equation we get our estimation equation

$$GDP = \beta_1 + \beta_2 Remmitance + \beta_3 FDI + \epsilon_1 (1)$$

Where GDP is our dependent variable, β_1 is intercept term, β_2 is the coefficient of remittance which shows the effect of remittance on GDP, β_3 is the coefficient of FDI which shows the effect of FDI on GDP. We have included an error term (ϵ_1) in the model.

By using econometric software E-views we have estimated the equation 1 and the following outcome is observed, So the estimated equation is:

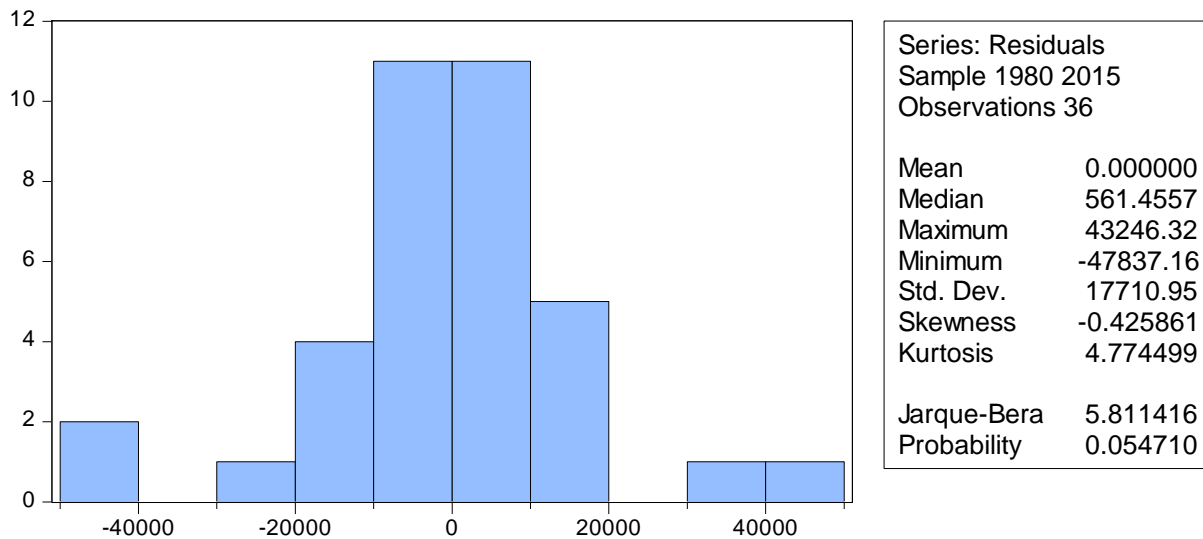
$$\widehat{GDP} = 13024.53 + 2784.176 \text{ Remmitance} + 67387.96 \text{ FDI} + \hat{\epsilon}_t$$

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13024.53	7997.231	1.628630	0.1129
REMITTANCE	2784.176	2406.010	1.157175	0.0255
FDI	67387.96	12252.48	5.499944	0.0000
R-squared	0.864538	Mean dependent var		57155.56
Adjusted R-squared	0.856329	S.D. dependent var		48120.91
S.E. of regression	18239.75	Akaike info criterion		22.54025
Sum squared resid	1.10E+10	Schwarz criterion		22.67221
Log likelihood	-402.7245	Hannan-Quinn criter.		22.58631
F-statistic	105.3058	Durbin-Watson stat		0.999627
Prob(F-statistic)	0.000000			

From the above estimation we can see that both the explanatory variable has the positive association with the dependent variable. P-value for both the variable is less than 5%. So this is a desirable outcome for the estimation. The R-square of the estimation is 0.86 which is very high. It means that our equation can explain 84% of the actual outcome. The probability for F statistic is also less than 5% which means that both the explanatory variable can jointly effect the dependent variable. The Durbin Watson statistic is also good. So we can say that our estimation is good one. But before concluding we need a close observation of our residuals and need to check any misspecification in the model. At first we will observe the serial correlogram LM Test. We have chosen Breusch-Godfrey serial correlation test. By this test we can know that our residuals are serially correlated or not. The null (H_0) hypothesis of the model is residual is not serially correlated.

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	2.603503	Prob. F	0.0405
Obs*R-squared	28.80775	Prob. Chi-Square	0.0916

As we cannot reject null at 5% level it indicates that residuals are not serially correlated. After that we wanted to know that our residuals are normally distributed or not. To test that we have tested jerque-bera normality test(Jarque and Bera 1987) .the null (H_0) of this test is residuals are normally distributed.



The data shows that we cannot reject null that residuals are normally distributed. Rather residuals are normally distributed. Finally to detect the stability of the model we go through a stability test which is ramsey Reset test(Shukur and Mantalos 2004).The RESET test proposed by Ramsey (1969) is a general misspecification test, which is designed to detect both omitted variables and inappropriate functional form. Null (H_0) hypothesis in this test is that there is no misspecification in the model. The estimation output is as follows.

Ramsey RESET Test		
Equation: EQ01		
Specification: GDP C REMITTANCE FDI		
	Value	Probability
F-statistic	2.910418	0.0694
Likelihood ratio	6.194759	0.0452

We can see that from the above table we cannot reject null at 5% level. That is there is no misspecification in the model. Finally we can say that our estimation output is statistically significant. So after the estimation we can conclude that there is a positive and strong association of remittance and foreign Direct Investment (FDI) of Bangladesh with Gross Domestic Product (GDP).

Conclusion

After the review of literature we were very much confused about the contribution of FDI and remittance in the GDP of Bangladesh. After the estimation process this paper reaches towards a conclusion that there is a robust positive association of remittance flows and foreign direct investment (FDI) with the GDP growth of Bangladesh. This paper has not further investigated how this association works exactly towards the economic growth. That means whether the independent variables has direct effect or indirect effect on the economic growth has not investigated. We also recommend that there is necessity to find out the proper mechanism of exact functioning of remittance and FDI in the macroeconomic functioning of Bangladesh as remittance is the major source of foreign currency flow in the economy and FDI flows is facing difficulties with the constrain over resources of Bangladesh.

References

- Alo, J. N. (2017). Remittance sees big fall in 2016. Dhaka Tribune. Dhaka, Dhaka Tribune.
- Barajas, A., et al. (2009). "Do workers' remittances promote economic growth?".
- Barua, S. (2007). "Determinants of workers' remittances in Bangladesh: An empirical study."
- Begum, M. N. and R. R. Sutradhar (2012). Behavior of Remittance Inflows and its Determinants in Bangladesh.

Chami, R., et al. (2005). "Are immigrant remittance flows a source of capital for development?" IMF Staff papers 52(1): 55-81.

Cooray, A. (2012). "The impact of migrant remittances on economic growth: evidence from South Asia." Review of International Economics 20(5): 985-998.

Driffield, N. and C. Jones (2013). "Impact of FDI, ODA and migrant remittances on economic growth in developing countries: A systems approach." The European Journal of Development Research 25(2): 173-196.

Faruk, M. O. (2015). "The effect of FDI to accelerate the economic growth of Bangladesh and some problems & prospects of FDI." Asian Business Review 2(2): 37-43.

Hill, R. C., et al. Principles of econometrics.

Islam, K. A. (2015). "Foreign Direct Investment (FDI) in Bangladesh: Prospects and Challenges and Its Impact on Economy." Asian Business Review 4(1): 24-36.

j, A. m. (2015). "Foreign Direct Investment (FDI) in Bangladesh: Trends, Challenges & Recommendations." International Journal of Economics & Management Sciences (July 2015).

Jarque, C. M. and A. K. Bera (1987). "A test for normality of observations and regression residuals." International Statistical Review/Revue Internationale de Statistique: 163-172.

Majumder, S. C. and Z. Donghui (2016). "Relationship between Remittance and Economic Growth in Bangladesh: an Autoregressive Distributed Lag Model (ARDL)." European researcher. Series A(3): 156-167.

Manni, U. H. and M. N. I. Afzal (2012). "Effect of trade liberalization on economic growth of developing countries: A case of Bangladesh economy." Journal of Business Economics and Finance 1(2): 37-44.

Rahman, M. (2009). "Contributions of exports, FDI, and expatriates' remittances to real GDP of Bangladesh, India, Pakistan, and Sri Lanka." Southwestern Economic Review 36(1): 141-154.

Saha, A. K. and A. Kumar (2012). "Scenario of the foreign direct investment (FDI) in Bangladesh: An evaluation." *IOSR Journal of Business and Management*5: 19-26.

Shukur, G. and P. Mantalos (2004). "Size and power of the RESET test as applied to systems of equations: A Bootstrap approach." *Journal of Modern Applied Statistical Methods*3(2): 10.

Siddiqui, T. (2004). "Efficiency of migrant workers' remittance: the Bangladesh case." University of Dhaka.

Tabassum, N. and S. P. Ahmed (2014). "Foreign direct investment and economic growth: Evidence from Bangladesh." *International Journal of Economics and Finance*6(9): 117.

Trading Economics (2016). "Economic Indicators."