



Relationship between Remittance and Economic Growth: Evidence from Bangladesh

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ABSTRACT

Remittance is one of the major sources of capital especially for the developing countries like Bangladesh. This study attempts to explore the relationship between remittance and economic growth in Bangladesh. Time series data from 1995-2016 extracted from the World Bank database as well as Bangladesh Bank statistics were used to measure the relationship of remittance and gross domestic product (GDP) with some other variables such as gross capital formation, gross domestic saving and household final consumption expenditure. Pearson's correlation coefficient is estimated between the variables. Moreover, annual growth (%) of remittance earning by Bangladesh has been calculated and compared with the GDP growth of Bangladesh. The study has found that on an average, remittance of Bangladesh has been increased by 10.85% from 1995-2016 which is higher than the average growth of the country's GDP. It has revealed that there is a positive relationship of remittance with the GDP, gross capital formation, domestic saving and household final consumption expenditure in case of Bangladesh. However, there is a frequent fluctuation of remittance flow in Bangladesh in the recent years. Thus, this study recommends that Bangladesh should take proper initiatives for maintaining an increasing trend of remittance in the coming years which would be useful for the socio-economic development of the country.

Keywords: Remittance, Economic Growth, Bangladesh

INTRODUCTION

Bangladesh is a lower middle-income country located in South Asia. In spite of several problems including political instability, corruption, lack of good governance, the country is advancing over time. Bangladesh is one of the most densely populated countries in the world. However, the population can be blessings if it can transform them into the human resource. The country's population has been increased from 119 million in 1995 to 160 million in 2016 while the total labor forces have been risen to 72 million in 2016 from 52 million in 1995 (World Bank, 2017a). Figure 1 presents the increasing trend of population and labor force of Bangladesh.

This large volume of workforce needs to be engaged in employment to ensure their participation in the economic development of the country as well to improve their

standard of living. Bangladesh has a huge potential of its labor force especially the surplus manpower combining with professional, skilled, semi-skilled and less-skilled labor force (Islam, 2011). Migration of a large number of labor force results higher remittance inflows in the country. It can be mentioned that inflow of remittance is increasing over the year in Bangladesh which plays an important role in the development of the migrant families and the countries as well. Remittance has become a crucial aspect for the developing countries like Bangladesh for socioeconomic advancement. It has a significant role to maintain a favorable balance of payment and to enrich foreign currency reserve and also has a great contribution to Gross Domestic Product (GDP) of the country (Islam, 2011). The remittances flow in Bangladesh has grown not only in size but also in importance regarding the share of gross domestic product (GDP). Remittances represent the

second largest source of foreign currency earnings after exports, which have contributed above 10 percent of GDP (Chowdhury, 2012). Hasan (2006) shows that remittance has a significant macroeconomic impact at the household level, the more impact or benefit of remittance income can have to alleviate poverty. Jongwanich (2007) finds that remittances have a positive but marginal impact on economic growth in Asia and Pacific countries. Therefore, it is important to determine the effect of remittance on the household and the economy. Thus, this study attempts to explore the relationship between remittance and economic growth in case of Bangladesh.

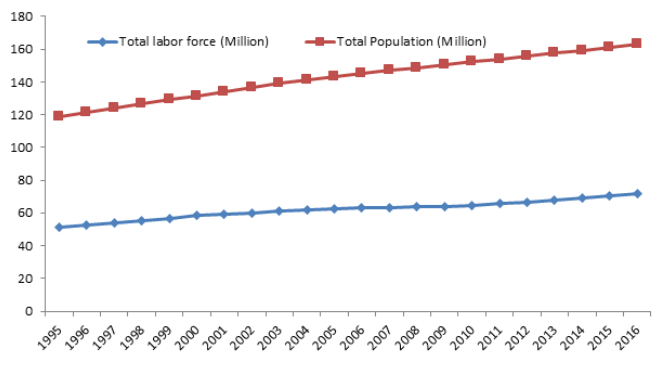


Figure 1: Total population and labor force in Bangladesh from 1995-2016

METHODOLOGY

This study explores the relationship between remittance and economic growth of Bangladesh by using the time series data from 1995-2016 which have been collected from the World Development Indicators of the World Bank database as well as Bangladesh Bank statistics. It has also derived trends of some variables including remittance earnings and gross domestic product (GDP) along with their comparison based on the data from 1995 to 2016. The study calculates annual growth (%) of remittance earning by Bangladesh based on the equation one which is compared with the GDP growth of Bangladesh.

Annual growth of Remittance =

$$\left(\frac{\text{current year remittance} - \text{previous year remittance}}{\text{Previous year remittance}} \right) \times 100 \dots \dots (1)$$

It is mentioned that remittance is one of the most important economic indicators for Bangladesh as it helps in balancing balance of payments, increasing foreign exchange reserves, enhancing national savings and increasing velocity of money by increasing (Ali, 2014). Therefore, for exploring the relationship remittance and economic growth, this study has been measured the relationship of remittance and gross domestic product (GDP) with some other variables such as gross capital formation, gross domestic saving and household final consumption expenditure. However, this study has used Pearson's correlation coefficient to explore the relationship between remittance and GDP using the following formula.

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2} \sqrt{\sum_{i=1}^n (Y_i - \bar{Y})^2}} \dots \dots \dots (2)$$

Where r = Pearson's correlation coefficient; X = remittance earnings, Y = GDP; \bar{X} = mean of X ; \bar{Y} = mean of Y ; i = number of years. The value of correlation coefficient ranges between -1 (total negative correlation) and $+1$ (total positive correlation). The similar technique has been used to measure the relationship between remittance and gross capital formation, remittance and gross domestic saving and remittance and household final consumption expenditure.

RESULTS AND DISCUSSION

Remittance and its growth in Bangladesh

Bangladesh is one of the largest remittance recipient countries through the export of its labor forces mainly to the Middle East and the Southeast Asian countries since the early 1970s. Bangladeshi workers are now working in a large number of countries including Saudi Arabia, UAE, Qatar, Kuwait, Oman, Malaysia, USA, UK, Italy and South Africa and so on. Job in Middle-east is one of the major sources of remittance inflow for Bangladesh as it has provided great scope for Bangladeshi workers for employment. Globalization has also played important role in the rise of demand for migrant workers globally. This external demand opened up scope for a large number of Bangladeshis (mostly semi-skilled and less skilled) to go abroad as migrant workers (ILO, 2014). Bangladesh is a country of surplus manpower resources with a combination of the professional, skilled, semi-skilled and less-skilled labor force. Almost two million young people are added to the labor force every year (BBS, 2013). But the country cannot create jobs to absorb them. As a result, the outflow of Bangladeshi workers will continue in the foreseeable future.

According to World Bank Estimates of 2013, Bangladesh is the 5th top emigration country with 7.76 million. Up to 2015 May, Bangladesh has sent more than 9.34 million workers to 142 countries (BMET, 2015 and BBS, 2013). Due to this mass movement of temporary migrant workers, the remittance transfers received from these migrant workers have reached a level of 15.31 billion US dollars in 2014-2015, approximately 7.9% of GDP in Bangladesh which was 14.23 billion US dollars in the year 2013-2014 (Bangladesh Bank, 2015). From 1976-2014, annual migration from Bangladesh is about 0.2-0.3 million, i.e. every year about 200,000 or more Bangladeshis leave the country to work overseas (BMET, 2015). Most of these migrants send part of their earnings home regularly or irregular basis. Bangladesh receives 2.6 percent of global remittance flow. This share was 3.5 percent among developing countries and accounted for 12.8 percent of the official remittances flowing into South Asia in 2014. The country ranked the 8th among developing countries and 10th globally as a remittance receiving country in 2013 with

a remittance earning of US\$13.86 billion. Bangladesh has been maintaining position within top 10 remittance recipient countries since last 15 years from 2004 to 2014. The size of the global remittance market was over \$601 billion in 2015 (World Bank, 2017b). Table 1 shows the top 10 remittance receiving countries in 2015 based on World Bank data.

Table 1: Top remittance receiving countries in the world in 2016

	Total Remittance Earnings (Billion US\$)	Rank
India	62.7	1
China	61.0	2
Philippines	29.9	3
Mexico	28.5	4
Pakistan	19.8	5
Nigeria	19.0	6
Egypt	16.6	7
Bangladesh	13.7	8
Vietnam	13.4	9
Indonesia	9.2	10

Source: World Bank, 2017b

Bangladesh has already become one of the top 10 remittance-recipient countries in the world which has strengthened the country's foreign exchange reserve. In 2016, Bangladesh has achieved the eighth position among the top 10 countries list after India, China, Philippines, Mexico, Pakistan, Nigeria and Egypt (World Bank, 2017a). This study has found that Bangladesh has earned US\$ 1198 million remittance in 1995 which has increased about 13 times as of US\$ 15317 million in 2015 (World Bank, 2017a). On an average, remittance has increased by 10.85% from 1995-2016. However, it is revealed that remittance of Bangladesh has fluctuated in recent years. As for example, the amount of remittance has decreased from US\$ 15317 million in 2015 to US\$ 14931 million in 2016 that indicates instability of remittance earning of Bangladesh. Thus, there is need special attention to maintain an increasing flow of remittance in Bangladesh from different countries.

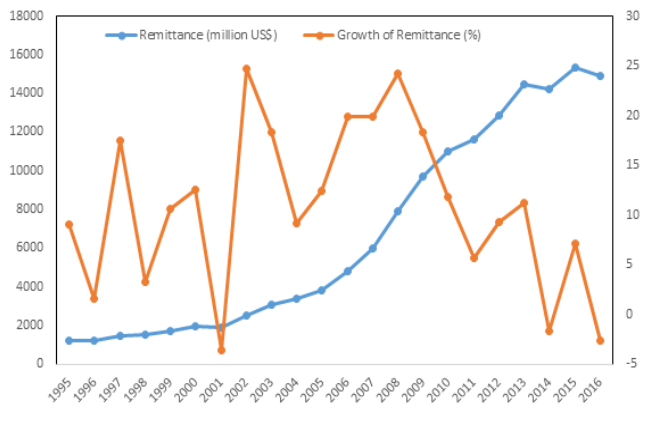


Figure 2: Remittance and its growth in Bangladesh from 1995-2016

Trend of GDP and GDP Growth

Bangladesh is a country which has maintained about 6% growth from past twenty years. This country has recently entered into the lower middle-income country from low-income country. The country's economy is growing over the years. It has found that the GDP (gross domestic product) of Bangladesh was US\$ 52934 million in 1995 which was increased by more than three times in 22 years at US\$ 167771 million in 2016. Figure 3 provides the trend of GDP and its yearly growth. It is revealed that Bangladesh has maintained an increasing trend of its GDP over the year while GDP growth has fluctuated. However, the average GDP growth of Bangladesh has estimated as 5.63% from 1995-2016. In spite of some major problems such as political instability, high rate of corruption, insufficient foreign direct investment etc., Bangladesh economy is growing where contribution of remittance and private sector growth are remarkable. It is highlighted that Bangladesh economy has achieved a record growth by 7.28% in 2017 which is higher than the GDP growth in 2016 as of 7.11% (Bangladesh Bank, 2017).

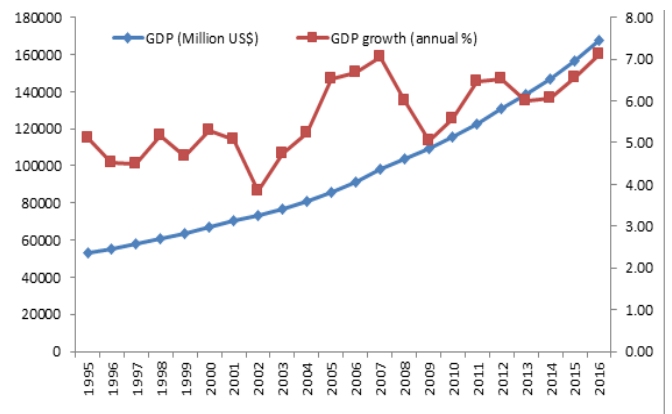


Figure 3: GDP and its growth (%) in Bangladesh from 1995-2016

Relationship between remittance and other selected variables

Remittance can influence in an economy by many ways. Some studies identify the effect of remittance on macroeconomic aspect. Rao and Hassan (2012) attempted to analyze the direct growth effects of remittances on the economy. They have shown that remittances indirectly facilitate economic growth by increasing the ratio of Broad Money (M2) to GDP. Siddique et al. (2010) conducted a study on remittance and economic growth on major South Asian countries (i.e., Bangladesh, India and Sri Lanka). Their empirical analysis identifies that remittances have a mixed response with the economic growth. The study finds no causal relationship between remittance and economic growth in the case of Bangladesh and India. But for Sri Lanka, a two-way causal relationship has found between remittance and economic growth. Another study finds that though there exist a long-run relationship between the remittance and economic growth but there does not have

long-run causal relation between the two variables (Datta and Sarkar, 2014). Das and Chowdhury (2011) investigated long run relationship between remittances and GDP of 11 top remittance-recipient developing countries including Bangladesh. They applied latest developed econometric techniques, i.e., panel co-integration and pooled mean group (PMG) approach. The results support a positive long run relationship between remittances and GDP. However, the magnitude of the remittance-GDP coefficient is quite small. Their result also implies that developing countries should formulate policies to divert this external resource into more productive sectors.

This study has estimated the relationship between remittance and some other variables related to economic growth (Table 3 in the Appendix presents the data for all of the variables). Remittance can influence a developing country's economy by changing household income and expenditure, domestic saving and investment and so on. This study has found that there is a significant positive correlation between the remittance and GDP in Bangladesh based on the data from 1995-2016.). Moreover, the results also show that remittance is also significantly correlated with the gross capital formation, gross domestic saving and household final consumption expenditure which is shown in Table 2. The result shows that the correlation coefficient between GDP and remittance is found as 0.981** which indicates that GDP is positively and significantly correlated with the remittance. It is also revealed that gross capital formation, gross saving and household final consumption expenditure are positively correlated with remittance as well as GDP. Therefore, it is said different macroeconomic variables such as gross capital formation and gross saving are influenced by the remittance which ultimately influence the GDP or economic growth of Bangladesh. Figure 4 also provides the flow of remittance and GDP of Bangladesh from 1995-2016. The linear trend lines for both remittance and GDP support the positive relationship between remittance and GDP of Bangladesh.

Table 2: Relationship between remittance and other selected variables

		Correlations				
		Remittance	GDP	Gross capital formation	Gross domestic saving	Household final consumption expenditure
Remittance	Pearson Correlation	1	.981**	.952**	.926**	.966**
	Sig. (2-tailed)		.000	.000	.000	.000
GDP	Pearson Correlation	.981**	1	.980**	.967**	.982**
	Sig. (2-tailed)	.000		.000	.000	.000
Gross capital formation	Pearson Correlation	.952**	.980**	1	.995**	.997**
	Sig. (2-tailed)	.000	.000		.000	.000
Gross domestic saving	Pearson Correlation	.926**	.967**	.995**	1	.987**
	Sig. (2-tailed)	.000	.000	.000		.000
household final consumption expenditure	Pearson Correlation	.966**	.982**	.997**	.987**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
		N	22	22	22	22

** Correlation is significant at 0.01 level (2 tailed)

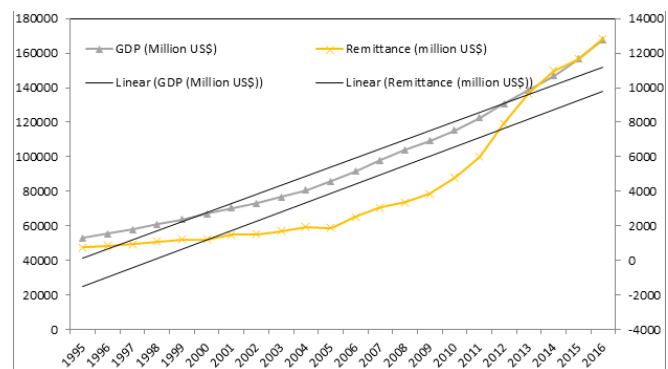


Figure 4: GDP and remittance of Bangladesh with their linear trend lines

CONCLUSION AND POLICY IMPLICATIONS

Remittance plays a vital role in the national economy through increasing household income, gross domestic saving, investment and ultimately economic growth. It has an immense potential for the socio-economic development of the remittance recipient countries. The steady growth of emigration from Bangladesh over the years is favorable to the development of Bangladesh; as the inflow of remittance has increased in the past years. The links between economic growth and remittance are obvious for a country like Bangladesh. However, recently, remittance flow has decreased in 2014 and 2016 compared to 2013 and 2015 respectively. Remittance flow is affected by different factors such as reduction of manpower export, high rate of emigrant to home countries, poor bilateral relationship with the manpower importing countries, lack of proper policy related to manpower export and so on. Good reputation of workers are also important for attracting more workers by the manpower importing countries. Therefore, this study suggests the following policy recommendation for increasing remittance flow in Bangladesh:

- Bangladesh should formulate proper manpower export policy for achieving higher remittance from the different countries
- The country has to build strong bilateral relationship with the remittance sending countries.
- Bangladesh needs to increase its bargaining power with the manpower importing countries for increasing the benefits of the workers which ultimately increase the remittance income.
- There is need to promote sufficient training and awareness programs for the workers that enhance skill of the workers and motivate them as well.

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APPENDIX

Table 3: Remittance and some macroeconomic variables of Bangladesh from 1995-2016

Year	Total Population (Million)	Total labor Force (Million)	Remittance (Million US\$)	GDP (Million US\$)	Gross capital formation (Million US\$)	Gross Domestic savings (Million US\$)	Household final consumption expenditure (Million US\$)
1995	119	52	1198	52934	7254	4795	31203
1996	121	52	1217	55328	9627	6532	36618
1997	124	54	1475	57812	10525	7975	37610
1998	126	55	1525	60805	11057	8875	38108
1999	129	57	1706	63645	11649	9152	39085
2000	132	58	1949	67013	12707	10234	40032
2001	134	59	1882	70416	13052	10177	40236
2002	137	60	2501	73115	13321	11051	40572
2003	139	61	3062	76580	14847	11962	44930
2004	141	62	3372	80593	16272	13299	47944
2005	143	62	3848	85860	17937	14041	51224
2006	145	63	4802	91589	18776	14895	52516
2007	147	63	5998	98054	20841	16103	58828
2008	149	64	7915	103951	24009	17317	69303
2009	150	64	9689	109195	26855	20489	76422
2010	152	64	10987	115279	30257	23623	85439
2011	154	66	11650	122731	35274	25527	95553
2012	156	67	12843	130735	37689	27304	98332
2013	158	68	14461	138597	42582	31751	109265
2014	159	69	14228	146997	49407	38109	125467
2015	161	71	15317	156630	56352	41891	141310
2016	163	72	14931	167771	65655	55349	153064

Source: World Bank (2017a) and Bangladesh Bank (2017)

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