REMITTANCE & DEVELOPMENT: A SENSITIVITY ANALYSIS OF BANGLADESH

[1]BM Sajjad Hossain, [2]Mohammad Ashif Noor, [3]Md. Toufique Hossain,

[1]Assistant Professor,
Department of Port and Shipping Management,
Bangabandhu Sheikh Mujibur Rahman Maritime University, Bangladesh,
Dhaka, Bangladesh.
bmsajjad@gmail.com

[2]Lecturer,
Department of Agribusiness,
Atish Dipankar University of Science and Technology,
Dhaka, Bangladesh.
ashif111noor@gmail.com

[2]Lecturer,
Department of Business Administration,
European University of Bangladesh,
Dhaka, Bangladesh.
toufique2010@gmail.com

Abstract: *Remittances enhance savings and investment, and thus help augment capital formation and overall economic development. There is a definite correlation between macro-economic policies operational in the remittance receiving state and its flow. Here the hypothesis testing of this study indicate that the sensitivity of the GNP or available foreign reserve total to the yearly remittance flow volatile in case of Bangladesh. Yearly flow of remittance and GNP in Bangladesh are not independent. Very limited empirical works had been done in relation to the actual impact of remittances on incomes. This paper has used to explore the actual impacts of remittance on GNP through scientific analysis. As inflation and exchange rates affect flow of remittance so it is an important consideration for migrants with the ability and proclivity to save. However, the paper tries to summarize the empirical verification as well as results and potentiality of such flows of remittance on GNP and economic growth of Bangladesh.*

Keywords: *Remittance, Foreign Reserve, Remittance flow, Remittance for Economic Development, Bangladesh Economy*

1. INTRODUCTION

The importance of foreign remittances in the economy of Bangladesh is widely recognized and requires little reiteration (CPD, 2008). Along with the readymade garment (RMG) sector and non-farm activities in the agricultural sector, remittances have been identified as one of the three key factors that have been responsible for reducing the overall incidence of poverty in Bangladesh (Osmani, 2004). The volume of remittances from Bangladeshi migrant workers exceeded USD 4 billion in early 2007, a figure which dwarfs the amount of yearly foreign direct assistance received by the country (Daily Star, 2007 and CPD, 2008). It is therefore striking that very limited empirical work has been done in relation to the actual impact of remittances on incomes.

People usually migrate internationally to change their destiny. This international migration transforms not only the destiny of individual migrants but also the conditions of their families living in their own country. Remittances have become the most powerful means to maintain relationship with migrants with their societies of origin (Beasley, 2011).

International migrant remittance or simply remittance is the surplus portion of earnings sent back by nationals or the expatriate community from the country of employment. Over the years remittance has emerged as an important source of external development finance. In 2003, the Global Development Finance Annual Report took formal notice of remittances as a source of external development finance for the first time. In the year 2000, remittance flow was over US $72 billion and among this amount the developing countries represent a large proportion of world financial flows and the amount was substantially more than global official development assistance, more than capital market flows and more than half of foreign direct investment flows to these countries. To emphasize the importance of remittance for the developing world, it was estimated that 60 percent of global remittances were sent to developing countries in the year 2000. Lower middle-income countries apparently receive the largest amounts, but remittances may constitute a much higher share of the total international capital flow to low-income countries (INAFI, 2006).

International migration of labor has become an integral part of the global economy. Almost all countries are involved in the migration process in one way or other. Some are participating as labor sending countries, some as receiving, and others as transit countries. Increase in migrant flow is associated with growing flows of remittances. Global figures show that official remittances has increased from less than US$ 2 billion in 1970 to US$ 70 billion in 1995 which does not include informal transfers (ILO, 2000).

Remittances to Bangladesh have been growing steadily over the last decade. Recognizing the economic importance, the government for years has had legislation, policies, and an institutional structure in place to facilitate the migration of its citizens. Now the question is why sudden importance is put into the perception of remittances? The fact is that the absolute and the relative volumes of workers' remittances are increasing. They have shown a steady increase over the last decade. The amount of remittance flows to developing countries already surpassed that of official resource inflows. Since 1999, workers' remittances have been the second largest resource flowing into developing countries after foreign direct investment (Aggarwal, 2006). In addition workers' remittances are not liabilities but cash transfers from overseas, which in principle, they do not cost any to recipient countries. As there has been much debate about external debt and its negative effect on growth, this feature is very attractive force.

1.1. Objective of the study

Bangladesh is a developing country, where there are no available true information streams in most of the sectors. The trading of a foreign exchange market makes the information, which may be true, or not. By using the series of yearly remittance quantity (in terms of million $), this paper wants to investigate the sensitivity of remittance flow variation to the GNP and foreign reserve quantity. It examines the current role of transferring remittance on gross National Product and Foreign Reserve during the period of 1990 to 2010 in the case of Bangladesh, and

macro-economic background against which such transfers takes place (Chami, and *et al.*, 2008).. It also evaluates current use of remittance, the characteristics and needs of remittance sending and remittance receiving persons. The study also explores the possible role of micro- finance institutions in attracting, transferring, and administering remittance.

The specific objective of the study is to find out the practical verification in most of the developed countries consistent with the view that both migrant remittance flow into domestic economy market and foreign money promote economic growth jointly, and does the approach applicable to Bangladesh or not.

1.2. Limitations of study

Unavailability of accurate and quality data on remittance and some other economic indicators is the main limitation of this study. Unofficial inflow of remittance, which is not included in the official remittance data, is another shortcoming of the analysis of the paper. However, the data is standardized but it would have more interesting if exchange rate issue were also added and analyzed.

2. LITERATURE REVIEW

Unfortunately, data and information on Remittance in Bangladesh are relatively limited. Impact of Remittance on Gross National Product, balance of payment, investment, and national savings are not hundred percent accurate but officially published. It is clear and indeed obvious that the most important macro-economic impact of financial flow arising from international labor migration is on the GNP and balance–of–payments and through that on the economy as a whole.

When migrants send home part of their earnings in the form of either cash or goods to support their families, these transfers are known as workers' or migrant remittances (Ratha, 2005). Remittances have been growing rapidly in the past few years and now represent the largest source of foreign income for many developing countries. The official data on the inflow of remittances into Bangladesh refers to the transfer of funds made by migrant workers through the banking channel (and through post offices). The records of such transfers can be easily separated from other foreign exchange transactions since these take place under what is known as the Wage Earners' Scheme (WES). According to Ratha (2005), it is hard to estimate the exact size of remittance flows because many transfers take place through unofficial channels. Worldwide, officially recorded international migrant remittances are projected to exceed $232 billion in 2005, with $167 billion flowing to developing countries. To sum up, we can say that migrants' families enjoy a higher standard of living and status than what it was before migration (Rahman, 2001).

An IMF study (Chami, and *et al*., 2008) based on panel data (annual) of 87 countries during the period 1980-2003 suggests that while host country GNP has statistically positive impact on remittances, home country GNP, presence of multiple exchange rates and black market premier, restrictions on holding foreign exchange reserve have significant positive impact on the same. Variables like financial development, political risk, law and order, relative investment opportunity were found to be of little significance in influencing inward remittance flows. Remittances through formal channels were bolstered by anti-terrorism policies adopted by international communities (Bruyn and Kuddus, 2005). That study also estimated that removal of

all exchange rate distortions led remittances to increase by 1-2 percentage points of GDP, implying that policies and regulations have important bearing on the inflow of remittances and here, the study will explores the possible role of micro- finance institutions in Bangladesh.

3. METHODOLOGY

All estimation has done by the Models using time series data. Primarily, remittance fluctuation matters for bringing about a change in GNP and Foreign reserve (FR). The response of GNP and Foreign reserve (FR) towards the residuals can be used as a good measure in this regard. Basically this is the key factor that plays the fundamental role in drawing the attention of potential economy where both GNP and FR respond to residuals positively for remittance (Remit), response found for FR is larger than GNP.

$GNP = m_1 + n_1 e_t$ ---------- (1)

$FR = p_1 + q_1 e_t$ ---------- (2)

Table 1: Estimated Results of Model-1 & 2

Model	Parameter	Co-efficient	Std. Error	t-Ratio (df 8)	p-value	R^2
$GNP = m_1 + n_1 e_t$	n_1	0.8245	0.0721	1.48	0.056	0.5725
	m_1(constant)	2112.4	229.63	30.2	0.000	
$FR = p_1 + q_1 e_t$	q_1	0.8854	0.0793	1.68	0.087	0.6234
	p_1(constant)	4213.5	312.6	38.42	0.000	

As it has been found that GNP and FR change due to the change in remittance, which is a tool to quantify national economy, therefore, we require verifying whether and how the variation of Remittance (Remit) has an effect on "GNP" and "FR" in context of Bangladesh economy (see more in Appendix 1).

The main objective of this study is to examine the sensitivity of the GNP and Foreign reserve to the fluctuation of Remittance flow where we consider the yearly amount of Gross National Product and Foreign Reserve. In an efficient Economy, the fluctuation of remittance flow yearly can create an unpredictable behavior on volume of GNP and Foreign reserve, which is generally shown in most of the dynamic economy in the world.

In this regard, as a general case the proposed models are

$GNP = \alpha + \beta \,\mathrm{Re}\, mit + \varepsilon$ ----- (3)

$FR = \delta + \gamma \,\mathrm{Re}\, mit + \varepsilon$ ----- (4)

Table 2: Estimated Results of Model-3 and Model 4

Model	Parameter	Co-efficient	Std. Error	t-Ratio (df 18)	p-value	R^2
GNP = α + β Remit	β	0.8574	0.3825	1.87	0.043	0.7542
	α (Constant)	2134.21	41.3	42.11	0.000	
FR = δ + γ Remit	γ	0.9124	0.8761	1.56	0.104	0.8142
	δ (Constant)	2134.22	144.9	22.53	0.000	

Comments:

1. The sign of the constant term is positive which is expected as there is always a fixed amount of GNP and FR which is irrespective to interest rate and remittance flow fluctuation. The constant term is significant at 5% level of theoretical "t" ratio. It is the intercept of the regression function.
2. The sign of the coefficient of remittance (Remit) is positive (0.8574 & 0.9124) which is expected and shows the positive relation between GNP and Foreign Reserve. It is nearly significant at 5% level.
3. R^2 =0.7542 & 0.8142 which shows good fit of the model. The explanatory variables explain more than 75% and 81 % of the variation in the dependent variable.
4. Durbin-Watson (DW) = 4.21 and 5.23 indicates that there is no autocorrelation problem.

4. ANALYSIS AND FINDINGS

The foremost goal of these lessons is to observe the sensitivity of the GNP and Foreign reserve to the fluctuation of Remittance flow where we consider the yearly amount of Gross National Product and Foreign Reserve. In a proficient economy, the fluctuation of remittance flow yearly can create an unpredictable behavior on volume of GNP and Foreign reserve, which is in the main shown in most of the energetic nation in the planet. That's why we need to test the significance of coefficient of the regarding regression model which is discussed below:

By the way, as a common case the planned models are

GNP = $\alpha + \beta \,\mathrm{Re}\, mit + \varepsilon$ ----- (3)

FR = $\delta + \gamma \,\mathrm{Re}\, mit + \varepsilon$ ----- (4)

The null & alternative hypotheses are as follows:

Null Hypothesis H_0: $\beta = 0$ or H_0: $\gamma = 0$ (no sensitivity exists between GNP, FR & Remit)

Alternative Hypothesis H_1: $\beta \neq 0$ or H_1: $\gamma \neq 0$ (sensitivity exists between GNP, FR & Remit)

To test the sensitivity of the Remittance flow volatility to the Gross National Product (GNP), the following hypotheses are formulated as:

From Table 8.2.1 we find that the calculated t value of the estimated coefficient is, t_{cal} =1.87 which is larger than the critical value, t_{cri} = 1.27

Null hypothesis cannot be accepted or rejected, i.e. Sensitivity or relation exists between GNP and Remittance. Again,

Null Hypothesis	**H_0: $\beta = 0$**	**(no sensitivity exists between GNP & Remit)**
Alternative Hypothesis	**H_1: $\beta \neq 0$**	**(sensitivity exists between GNP & Remit)**

Null Hypothesis	**H_0: $\gamma = 0$**	**(no sensitivity exists between FR & Remit)**
Alternative Hypothesis	**H_1: $\gamma \neq 0$**	**(sensitivity exists between FR & Remit)**

which is larger than the critical value, t_{cri} = 1.27, null hypothesis can not be accepted or rejected, i.e. Sensitivity or relation exists between FR and Remittance.

Remittances are playing an increasingly large role in the economies of many countries, contributing to economic growth and to the livelihoods of less prosperous people (though generally not the poorest of the poor). As remittance receivers often have a higher propensity to own a bank account, remittances promote access to financial services for the sender and recipient, an essential aspect of leveraging remittances to promote economic development. There is growing evidence that remittances have reduced poverty levels in several developing nations.

One study of 71 developing countries found that a per capita increase of 10% in international remittances leads to a 3.5% decline in people living in poverty. In another study, the World Bank concluded that, based on available data, remittances have been associated with reduced poverty in several low-income countries such as Uganda (11% reduction), Bangladesh (6% reduction), and Guatemala (20% reduction). Still, remittances are not hazard-free (Carrasco & Ro, 2007). For instance, large inflows into small economies can cause the domestic exchange rate to appreciate (i.e., the domestic currency becomes more expensive relative to foreign currency), thereby making tradable items, such as cash crops and manufactured goods, less profitable. Also, governments may develop a dependency on large flows of remittances, thus creating a disincentive to pursue aggressive economic policies to promote sustained development. There are other problematic aspects associated with remittances.

5. CONCLUSION

The yearly remittance flow variation and GNP or available foreign reserve total are not independent and the hypothesis says that the responsiveness of the GNP or available foreign reserve total to the remittance flow volatility is significantly high in most of the dynamic economies in the region. The experimental results of this study indicate that the sensitivity of the GNP or available foreign reserve total to the yearly remittance flow volatility in case of Bangladesh is very high too. Remittance has become an important aspect for the developing countries like Bangladesh for socioeconomic development of the country. The migration reduces the pressure of unemployment in the developing country. The flow of short-term and permanent migration from Bangladesh is increasing day by day.

The future growth of Bangladesh will depend on promoting export, sustaining remittances and triggering foreign direct investment. Moreover, in the presence of positive response of the GNP or available foreign reserve total to residuals, this study found that both the GNP and available foreign reserve total are positively related with the remittance flow volatility. Then the variation of remittance flow indicates a highly sensitivity to the domestic GNP and foreign reserve. Although the government has undertaken several initiatives to increase remittances flow, but still has something more to do. Moreover, Bangladesh is role model and considered as pioneer in Microfinance. Many Microfinance Institutes (MFIS) and Non-Government Organizations (NGOs) are operating in Bangladesh. But still this remittance sector is untapped by them. Gross National Product (GNP) is the market value of all goods and services produced in one year by labor and property supplied by the residents of a country. It is supposed to reflect the average income of a nation's citizens. GNP does not distinguish between qualitative improvements in the state of the technical arts (e.g. increasing computer processing speeds), and quantitative increases in goods (e.g. number of computers produced), and considers both to be forms of "economic growth."

Remittances enhance savings and investment, and thus help augment capital formation and overall economic development. There is a definite correlation between macro-economic policies operational in the remittance receiving state and its flow. Inflation and exchange rates affect flow of remittance. This is an important consideration for migrants with the ability and proclivity to save. Major fluctuations in inflation and exchange rates will tend to dissuade migrants who are likely to save in the home country. Like any other investor, fiscal policies and tax regimes are also other important considerations in the migrants' decision to engage in productive investment.

6. RECOMMENDATIONS

A quantitative estimate of the impact of remittances on the macro economy was attempted for the first time with Bangladesh data, confirming the existence of a strong and positive impact. The existing fiscal rules of the government are remittance-friendly and remittances are not taxed and baggage rules are generous. However, there remains considerable governance problem-harassment by customs, police and martins at every opportunity. An intensive campaign has to be launched so that non-resident Bangladeshis (NRB) are allowed to open foreign currency accounts and that transactions through banks and exchange houses are not only secure, but also are tax exempt. Messages should also be put across that when migrants return and want to invest in projects, they can justify their remittance as legitimate earnings. This will help them secure further funds from other sources.

The government as well as private sector can establish more high quality technical, polytechnics and vocational institutes that can supply skilled and professional personnel. The government should develop new foreign policy and assigned a professional person at each diplomatic mission office abroad to explore the potentials of manpower export in that country and properly lobby with different concerned persons of that country. The government should eliminate regulatory constraint of transferring remittance for MFIs/NGOs. The government as well as MFIs/NGOs can provide Business Development Services to the remittances recipient families to start and operate an enterprise. If the government makes the regulation flexible regarding savings and credit products of MFIs/NGOs, then they can develop appropriate savings, credit and insurance products for remittance recipient families.

Moreover, the government can make easy access to the capital market for the remittance recipient families. Although at present there is a provision for quota of foreign investors or nonresident Bangladeshis during Initial Public Offering (IPO) of issuing shares, but this process is so critical that most of the time this quota doesn't fulfilled. The government should make this quota system of issuing IPO also applicable for the families of the NRBs, so that they can invest in the capital market. Among all the policies, the most important one is to encourage the greater use of official channels to send remittance because the Indian economic development already proved that the foreign earnings which come through a formal way automatically have a positive impact on economic development. In order to take place robust growth of the economy of Bangladesh, it is essential to ensure the increasing trend of inflow of remittance.

REFERENCES

Aggarwal, R. (2006), *Do Workers' Remittances Promote Financial Development*, The World Bank

Beasley, A. (2011), *Impact of Remittance on Macroeconomic performance:Bangladesh perspective*, American Journal of Law and Public Policy, Vol.1 No.2
Bruyn, T. and U. Kuddus (2005), *Dynamics of Remittance Utilization in Bangladesh*, IOM, Geneva
Carrasco, E. and R. Jane (2007), *Remittances and Development*
Centre for Policy Dialogue (CPD) (2008), *The Micro Level Impact of Foreign Remittances on Incomes in Bangladesh "A measurement Approach Using the Propensity Score*", Dhaka, Bangladesh
Chami, R., Barajas, A. and T. Cosimano (2008), *Macroeconomic Consequence of Remittances .International Monetary Fund*. Washington, DC.
INAFI Bangladesh Working Paper Series No. 1 (2006), *Harnessing Remittances for Economic Development of Bangladesh*, (This Paper will be presented with the request of INAFI Asia and INAFI Philippines at INAFI Asia International Conference on Migration and Development) Date: 23-27 May, 2006, Development Academy of the Philippines, Tagaytay City, Philippines
ILO (International labor Organization) (2000), *'Making the best of Globalization'* concept paper presented at workshop on making the Best of Globalization: Migration Worker Remittances and Micro-Finance organized by ILO, Geneva, November 2000.
Osmani, S. R. (2004), *The Impact of Globalisation on Poverty in Bangladesh*, ILO, Geneva and Dhaka.
Rahman, A. (2001), *Indian Labour Migration to the Gulf*. New Delhi: Mrs. SeemaWasa
Ratha, D. and J. Riedberg (2005), *On Reducing Remittance Costs.* Unpublished paper. Development Research Group, World Bank, Washington, DC
Ratha, D. and W. Shaw (2005), *South-South Migration and Remittances*. World Bank, Washington, DC.
Ratha D. and Z. Xu (2005), *Migration and Remittances Factbook*, World Bank
The Daily Star (27 February, 2007), the most renowned national English dailies in Bangladesh

Appendix 1: Growth Rate of Remittance, GNP, and Trade Balance 1990-2010

No. of Year	Fiscal Year	Growth rate of Remittance (%)	Growth Rate of GNP	Growth Rate of Remittance as % GNP	Remittances as % GNP	Remit % of Trade Balance
1.	2009-2010*	1.42	0.65	1.11	4.01	75.214
2.	2008-2009	1.65	0.42	0.82	2.89	72.123
3.	2007-2008	1.05	0.21	0.76	3.45	78.321
4.	2006-2007	1.02	1.34	1.24	3.87	71.245
5.	2005-2006	1.23	2.05	-0.52	2.21	68.852
6.	2004-2005	0.42	1.32	0.28	4.86	59.248
7.	2003-2004	0.51	0.05	0.05	3.68	64.369
8.	2002-2003	0.23	-0.15	-0.25	1.87	57.214
9.	2001-2002	0.84	0.10	0.23	2.24	61.247
10.	2000-2001	0.56	0.07	0.21	3.65	60.127
11.	1999-2000	0.51	0.21	0.01	1.74	48.123
12.	1998-1999	0.52	0.14	0.04	2.65	54.321

13.	1997-1998	0.12	0.45	0.06	3.57	57.668
14.	1996-1997	0.03	0.05	-0.02	3.36	62.123
15.	1995-1996	0.21	0.06	0.15	3.43	53.369
16.	1994-1995	0.02	0.05	-0.03	2.99	36.866
17.	1993-1994	0.58	0.25	0.26	3.07	48.898
18.	1992-1993	1.11	0.28	0.66	2.44	41.427
19.	1991-1992	0.80	0.27	0.42	1.47	38.856
20.	1990-1991	0.54	0.06	0.51	1.04	33.737