Article

Nonlinear growth effect of remittances in recipient countries: an econometric analysis of remittances-growth nexus in Bangladesh

Gazi Mainul Hassan
Waikato Management School, University of Waikato
Hamilton, New Zealand
E-mail: gmhassan@waikato.ac.nz

Shamim Shakur
School of Economics and Finance, Massey University
Palmerston North, New Zealand
E-mail s.shakur@massey.ac.nz

Abstract:

The paper examines the impact of inward remittances flows on per capita GDP growth in Bangladesh during 1976-2012. We find that the growth effect of remittances is negative at first but becomes positive at a later stage, an evidence of a non-linear relationship. Unproductive use of remittances was rampant in the beginning when they were received by migrant families but better social and economic investments led to more productive utilisation of remittances receipts at later periods. This was the possible mechanism behind the U-shaped relationship. Unlike what is suggested in the literature that the effect of remittances is more pronounced in a less financially developed economy, our evidence do not show that the effect of remittances on per capita GDP growth in Bangladesh is conditional on the level of financial development.

JEL Codes: F0, F4, O1.
Keywords: Remittances; Economic Growth; Bangladesh; Remittances Utilisation.

1. Introduction

The importance of the flow of workers' remittances in the economies of developing countries during the last few decades or so cannot be ignored at the face changing global order where most of the economies in the world are transforming themselves to the call of globalization and transmuting towards more open markets with freer flows of goods and factors across borders. Remittances – the unrequited transfer of funds by the migrants to their families at home – are a source of foreign exchange which is much scarce in developing economies. It is a more stable and less volatile source of external finance when compared to the other forms of flows which include official development assistance and foreign direct investment (Ratha 2007). Given the surge in the flows of remittances world wide (IMF 2005, World Bank 2005, and Ratha 2007), especially in the developing countries where remittances are twice the size of official development assistance (ODA) and as large as foreign direct investment (FDI), it has become important to study the development impacts of remittances in those economies. Potentially remittances inflows can have strong development impacts in the economy. As Kapur (2004) notes:

> "Remittances finance consumption, land and housing purchases and philanthropy; they are an important source of social insurance in lower income countries; and they provide liquidity for small enterprises (in the absence of well functioning credit markets) as well as capital investments – in equipment, land, wells and irrigation works and education – with longer-term implications for economic development."

However, remittances can also have counter effects in the source economy unlike ODA or FDI because it is an outcome of labour migration. Like there are externalities (positive and/or negative) associated with labour migration, the impact of remittances on the economy measured at the macroeconomic, household or community level can be either positive or negative in the country of origin. Table 1 compiles the major conclusions reached by the remittances researchers.

[Table 1, here]

The development impact of remittances is a broad and complex topic. During the last decade or so there has been a surge in researches on remittances and consequently there has emerged a vast literature around the topic of "development impact remittances". This paper however is directed towards studying only the growth impacts of remittances in Bangladesh where "remittance and economic growth" is a topic in the "macroeconomic impact of remittances" – a sub-section of "development impact of remittances" literature.[1]

This paper is organized as follows. Following this brief introduction the paper will discuss in section 2 the dynamics of remittances flows and other important international flows in Bangladesh and the utilisation of remittances. Section 3 will provide a brief literature review of researches on remittances in Bangladesh. Section 4 will present econometric results on the impact of remittances on economic growth in Bangladesh during 1976 – 2012 and Section 5 concludes by outlining the main findings of the study.

2. Remittances Flows in Bangladesh

We choose Bangladesh as our case study. The cultural and political history of Bangladesh is unique: with its Muslim majority population, it once was a part of the undivided Indian sub-continent, located in the greater area of Bengal. This region was later divided into the eastern wing of Pakistan after the 1947 partition, but eventually became an independent nation in 1971 sharing borders with India and Myanmar. Prior to the partition of the Indian sub-continent, economic stagnation had caused large-scale emigration of Bangladeshis to Assam (eastern province of India), and to Myanmar (IOM, 2005). In 1976 the Bangladesh government with the aid of active Middle East policy began exporting cheap and abundant Bangladeshi labour migrants to Middle Eastern countries to fuel their demand for construction workers. This trend later continued to other parts in East and Southeast Asia. Bangladesh is now among the top ten remittance-receiving (measured in terms of current US dollars) and manpower-exporting countries in the world (World Bank, 2011). Given its long history of emigration and the curious developmental problems and prospects, we believe that Bangladesh is an ideal country to test the development impact of remittances.

Remittances constitute the most important external financial flow in the Bangladesh economy compared to foreign aid and foreign direct investments (FDI). Figure 1 plots these

[1] The development impact of remittances literature include (along with macro topics) those topics that study its effect on household poverty and inequality, household's labor supply, schooling of children, child labor, child health and other household behaviors (e.g. savings, and expenditures). These topics use household level survey data for analysis in contrast to the "macroeconomic impact of remittances" studies which use aggregate macroeconomic data.

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three external flows – remittances, foreign aid and FDI – during the period 1976–2010. Beginning with a modest amount of US$49 million in 1976, remittance flows reached US$10.8 billion in 2010, an approximately two hundred-fold increase during this period.

[Figure 1, here]

Figure 2 presents the growth in remittances from 1976–2010. Looking at the moving average series it can be seen that growth in remittances fell and stabilised during the 1990s and thereafter has only marginally begun to increase.

[Figure 2, here]

In order to conceptualise how overseas income from migrant members contribute to welfare within the family, we look at data on how remittances are utilised. Data on the utilisation of remittances by recipient households in Bangladesh have been compiled from various studies and summarised by IOM (2005). Remittances utilisations in Bangladesh, according to the IOM study, have been concentrated in five major categories: i) food and clothing; ii) home construction and repair; iii) purchase of land; iv) repayment of loans; and v) savings.

[Figure 3, here].

Figure 3 shows the minimum and maximum values of these most-mentioned uses of remittance income. The important factor to take note of from the data represented in Figure 3 is that for migrant families in Bangladesh, after basic consumption needs have been met, the residual remittance income is mostly used to repay loans and then to accumulate savings. . Because saving is little at the initial outset, and more is spent on consumption, it is safe to argue the remittances receipts are utilised less ideally at the beginning in Bangladesh. This has important implications for growth which we shall observe in section 4.

3. Literature Review

The earliest paper on remittances in Bangladesh is a micro level study by Mahmud and Osmani (1980) who quantitatively modelled expenditure and saving behaviour of the migrant and the household receiving remittances. They found that migrants remit more than eighty percent of their income from abroad, and that there is a significant difference in the saving rate between remittance receiving and non-receiving households. They also showed that the savings ratio monotonically increases with income and for the highest remittance receiving income group saving ratio was found to be almost three fourth of income. One of the central findings of their study is that remittances go into unproductive use. An early quantitative study at the macroeconomic level of remittances in Bangladesh in comparison to other Asian countries is by Qubria (1986) who showed that the steady

flows of remittances have eased the foreign exchange constraints, improved the balance of payments and has augmented national savings.

One of the first studies to estimate the welfare effects of remittances in Bangladesh was Stahl and Habib (1989) who used the computable general equilibrium (CGE) modelling framework and showed that even if only small proportions of remittances income go to direct investment while the majority go to serve the purpose of consumption needs, remittances could still be developmental because remittances tended to be spent within those sectors which had relatively strong linkage with the rest of the economy. Thus many sectors not directly benefiting from the remittance expenditure would nonetheless experience an increase in demand for their output inducing investment in their sectors and expanding employment. In a theoretical paper relating to labour exporting Asian labour-surplus economies like Bangladesh, Qubria (1997) simultaneously combined migration and remittance in a model and showed that if migration is accompanied by sufficiently decent per capita remittances that exceeded the source-country wage rate then, it will enhance the growth rate of the labour-exporting country. In this manner remittance is a pro-growth external flow.

Murshid et al (2002) discussed the prospects and challenges of officially channelling remittances through the national and multinational banks and provided a Keynesian type analysis of the macroeconomic effects of remittances and estimated a simple remittances multiplier equalling 3.33 indicating that a one million taka (Bangladeshi local currency) increase in remittances would increase national income by 3.33 million taka. Siddiqui and Abrar (2003) used survey data and tried to qualitatively investigate the nature and dynamics of people linked through remittances and the linkage between workers' remittances and micro-finance institutions in channelling and transferring remittances in Bangladesh. By surveying one hundred households, they provided detailed characteristics of the remittance receiving households, their socio economic profiles and the different ways remittances are used by them. For example, the study found that more than half the remitters, three quarter of whom are less than thirty five years of age, were married but sent money to their parents who are typically more than fifty years of age, half of whom are illiterate. The study also reported that some portion of remittances were invested in land and did not go towards savings while a substantial part of remittances were used to finance migration of other family members. There was some discussion as in how to extend the multi finance institutions (MFI) network to channel in official remittances and direct them to productive usage. In a similar paper, Azad (2004) outlined the various diaspora based investment instruments to attract migrants' remittances through official channels and the complementary role that various MFIs can play to expand financial access in rural and remote areas and also fund micro-enterprise activities. Aiming at the formulating policies to make remittances transfer efficient, Siddidui (2004) scripted the

various different layers of agents and categories of institutions that are involved in remittances transfer processes, such as different ministries, training institutes, civil society, commercial banks, Bangladesh Bank (the central bank of Bangladesh), MFIs, investment instruments, specialized bank accounts, different laws related to govern remittances flows and money laundering etc. and how they can be coordinated. The study showed that the general perception that remittances are put to unproductive use has no empirical validity anymore. While remittances might have been under-utilised by the migrant families in late 1970 or early 1980s, the evidence suggested that in 1990s the migrants families had tried to effectively utilise the remittances they received by investing in nutritious food for the family members, health, education, land purchase and financing migration of other family members. De Bruyn and Kuddus (2005) studied the various impacts that remittances have on households and on the broader community level in Bangladesh and discussed the various means through which government or NGOs can enhance the impact of remittances. Barua, Majumder, Akhteruzzaman (2007) studied the major macro determinant of remittances receipts in Bangladesh. Khan (2008) used Household Income and Expenditure Survey 2005 data to infer about the status of poverty in Bangladesh and estimated that remittances receipts lead to an approximately eighteen percent decline in poverty. Buchenau (2008) qualitatively outlined how the various aspects of migration and remittances in Bangladesh are related and provided a framework for analysing the link between migration, remittances and poverty at the household level as well as macro level.

In general, the international literature investigating the topic on whether remittances contribute to growth and development is divided. The more optimistic group advocate that there exists a positive developmental impact role of remittances, directly or indirectly, because inflow of remittances can lead to accelerated investments in physical and human capital, remove households' credit constraints, protect the economy from different types of shocks and thus contribute towards long-run growth (Adams, 2005; Yang, 2008; Gupta, Pattillo and Wagh, 2009; Giuliano and Ruiz-Arranz, 2009; Chami et al., 2008, 2009; Catrinescu et al., 2009; Faini, 2006; IMF, 2005; Rao and Hassan 2012a, b; World Bank, 2005, 2006, 2008 and Siddique et al., 2012). Additionally, remittances can reduce household poverty and accumulate human capital (see; Adams and Page, 2005; Hanson and Woodruff, 2003; Cox-Edwards and Ureta, 2003; Frank and Hummer, 2002; and Hildebrant and Mckenzie, 2005). On the other hand, the less optimistic group suggests that remittances can act like a curse and lower the long-run growth of the recipient economies. For instance, Stahl and Arnold (1986) showed that savings from remittances are primarily used for consumption; Chami et al. (2003) showed that remittances receipts can reduce labour force participation in addition to harming the tradable goods sector by appreciating the real exchange rate (Amuedo-Dorantes and Pozo, 2004; Chami et al, 2008; Hassan and Holmes, 2013).

Recently, Hassan et al (2016) provided an alternative view on the remittances-growth literature by recognising that the developmental impact of remittances need not be linear. To be specific, they proposed and showed that a U-shaped relationship exists between remittances and long-run total factor productivity (TFP) growth, where the growth effects of remittances are initially negative but become positive later on. It is therefore possible that such a non-linear relationship may be also be present between remittances and per-capita GDP growth rate. As a result the central motivation of this paper is to verify empirically whether such a non-linear U-shaped remittances-growth nexus exists in Bangladesh by adopting different methodology which includes instrumental variable regression analysis.

4. Remittances and Economic Growth in Bangladesh: Econometric Analysis

In this section we provide a simple econometric analysis of the growth-remittances nexus in Bangladesh. The model estimated has three alternate specifications. Each of these specifications will be estimated using an OLS, Instrumental Variable–Two Stage Least Square (IV-2SLS), and IV-GMM estimators respectively.

Our basic model for the analysing whether remittances affect growth in Bangladesh is:

$$y_t = \beta_0 + \beta_1 \mathrm{Re}m_t + \beta_z Z_t + u_t \qquad [1]$$

where y is the per capita GDP growth, R*em*, our variable of interest is the log of workers' remittances[2] to GDP ratio and Z is a vector of control variables. The control variables were those which were frequently included in the "growth – remittances" regressions in the literature. Here they are (all in logs) gross capital formation to GDP ratio (*lgcf*), populations growth (*lpop*), government consumption to GDP ratio (*lgov*), M2 to GDP ratio (*lm2*), inflation rate (*linf*). The last three controls are included as a proxy to the capture effects of government size, financial development and relative macroeconomic stability.

For verifying whether the "remittances-growth" nexus is non-linear, our second alternative specification includes the squared term the variable R*em*:

$$y_t = \beta_0 + \beta_1 \mathrm{Re}m_t + \beta_2 \mathrm{Re}m_t^2 + \beta_z Z_t + u_t \qquad [2]$$

To capture whether the non-linearity effect could also stem from the effect of remittances being conditional on some other control variables included in Z, such as

[2] Actually Rem include "workers' remittances and compensation employees" from the IMF balance of payments statistics

financial development, our final specification include an interacting term between remittances and broad money, as follows:

$$y_t = \beta_0 + \beta_1 \mathrm{Re}\, m_t + \beta_2 \mathrm{Re}\, m_t^{\,2} + \beta_3 (\mathrm{Re}\, m \times FD)_t + \beta_z Z_t + u_t \qquad [3]$$

where the interaction variable $(\mathrm{Re}\, m \times FD)$ is the log of remittances to GDP times log of M2 to GDP ratio (*lm2rem*).

The econometric results of specifications [1] through [3] are reported in Table 2. We first report an OLS estimation followed by an IV-2SLS and a IV-GMM estimators. The data for this estimation were taken from World Bank World Development Indicators for the period over 1976 – 2012. Our main objective is to see if remittances affect growth of GDP per capita in Bangladesh non-linearly, keeping the specification simple and intuitive.

[Table 2, here]

From column 1, the simple OLS results show that, adding a squared term of remittances make the estimated coefficients on the variables remittances (*lrem*) and the squared remittances (*lrem2*) significant, with a negative and positive sign respectively. The R^2 increases considerable from the previous specification implying a better fit. Adding an interaction term between remittances and financial development, do not pose any significant improvement in the estimation.

Remittances could actually be responding to better home conditions, creating the problem of revers causality. In addition, there could be measurement problems as a big chunck ore remittances could remain unrecorded. These two problems could give rise to the issue of endogeneity bias in the OLS estimation. To minimise such bias we estimate equations [1] to [3] instrumental variable (IV-2SLS) estimator. The major portion of remittances being sent by the Bangladeshi migrants usually come from Middle Eastern Asian countries out of which the highest proportions are remitted from the Kingdom of Saudi Arabia alone. Therefore we chose the GDP per capita of Saudi Arabia as an instrument for remittances. Because we have used one instrument for one endogenous variable (*lrem*), our equations are exactly identified. Moreover, it also served as a relevant instrument for all equations, because the F-test on the excluded instrument exceeded the rule of thumb value of 10. Column 2 shows the IV results. Without the squared remittances and interactive term, remittances' impact on growth is negative but not significant. When squared remittances variable is added both coefficients of remittances and squared remittances are significant while the former takes on a negative sign and the latter a

positive. After the interaction term is added onto the regression, remittances seem to positively affect growth though the estimate is statistically not significant.

Finally we provide robust estimations of the instrumental variable regressions in column 3 using IV-GMM estimator using the same instrument. If the errors in the specifications in column 2 satisfy all classical assumptions and are i.i.d., then IV-GMM estimator is merely the standard IV-2SLS estimator. However that is unlikely in case of our data and therefore the IV-GMM is our preferred approach because this allows us to generate and report standard errors robust to arbitrary heteroskedasticity and autocorrelation. The IV-GMM results with robust standard errors show that there is a non-linear relationship between remittances and per-capita GDP growth in Bangladesh and follows a U-shaped pattern. The result is comparable and complementary to the recent findings in Hassan et al (2016).

5. Conclusion

The central findings of the paper are as follows:

a) There exist a non-linear relationship between flows of inward remittances and economic growth in Bangladesh. The estimated coefficient on the squared remittances variable is positive and significant in all six specifications where it is included, implying that inflows of remittances reduce per capita GDP growth rates in the initial phase but enhance growth rates at a later phase. This could be due to the fact that in the early periods remittances were put to unproductive use (Mahmud and Osmani 1980) whereas in the later periods remittances were utilised for more productive purpose (Siddidui 2004). In the early periods (before 1980s) remittances recipients in Bangladesh could not have utilised the flows properly as there were less opportunities to put them into productive use. There was a relative shortages of financial instruments or investment opportunities in the initial phase of Bangladesh's development. In the later phase (after 1990s), the proliferations of NGOs, Micro Finance Institutions (MFI) and other private Banks had caused the efficiency of remittances utilisation to enhance through offering increased varieties of income generating financial products and services. For instance in 1997 BRAC, the largest NGO in Bangladesh, initiated the Micro Enterprise Lending and Assistance (MELA) programme which provided loans to individuals for both working capital and capital investment. Migrant workers or their families who live within the fifteen miles radius of the project could apply for MELA's assistance if they have viable investment projects. Grameen Bank also offered during the same time the Grameen Mutual Fund investment plan, where a person depositing 1,000 taka per month could double that amount invested after ten years. The proliferations such financial products by MFIs in the later part of the data period 1976

– 2012, may have caused migrant households' preferences from consuming out of remittances incomes to investing in health, education and financing micro enterprises.
The consumption to investment shift could also stem from overall macroeconomic situation. In the early 70s to late 80s, the economy was plagued with protectionist policies with high tariffs and a repressed financial sector. Through the initiation structural adjustment programmes and reforms in the real and financial sectors of the economy in the early 1990s these constraints had been gradually relaxed. Hence it is possible that the lack of activities of MFIs and NGOs accompanied by an unfavourable investment climate during the earlier phase led the households to put their remittances into unproductive use or into conspicuous consumption. But at the later stage this trend was reversed because of a favourable macroeconomic environment conducive to productive use of the remittances receipts.

b) There could also be a productivity based explanation for the non-linear effect. Inflow of remittances might have led to the real effective exchange rate appreciation i.e. the Dutch disease effect by squeezing the tradable goods sector and reducing technological capacity in the overall economy and thus reducing growth in the early phase. In the later phase the situation should have been exacerbated due to diminishing returns combined with Dutch disease effect. However, due to favourable investment climate, relative openness of the economy and proliferations of MFIs and NGOs in channelling remittances into productive investments, the Dutch disease and diminishing return effects were perhaps outweighed thru overall productivity gains in the economy at the later phase which contributed to growth. Thus remittances may have a non-linear effect on per capita GDP growth in Bangladesh with growth falling first and then rising later on.

c) Overall deepening of the financial sector do not matter for the effect of remittances to become more significant. The literature suggest that the effect of remittance on growth become positive when remittances are interacted with financial development. That is growth effect of remittances is more pronounced for financially less development country. Whilst Bangladesh falls under such category, we find no evidence that effect of remittances is conditional on financial development (broad money to GDP ratio).

Table. 1 ***Possible Positive and Negative Impacts of Remittances***

	Positive Impact of Remittances	**Negative Impact**
Macroeconomic level	• Strengthening balance of payments by provision of foreign exchange • Remittances are stable and counter-cyclical	• Deterioration of balance of trade by stimulation of import and appreciation of local currency • Deterioration of 'social balance' • Remittances tend to decrease as migrant community is more established in the destination country • Economic dependency of remittances
Household level	• Allow family to meet basic needs • Opening up of opportunities for investing in children's education, health care etc. • Loosening of constraints in family budget to invest in business or savings • Emergency resources • Social security resource base	• Dependence on remittances and neglect of local productive activities by families • Hardly used for productive investment
Community and regional level	• Boost local economy • Financing local development projects	• Increase inequality between families who receive remittances and those who do not • Inflation

Source: Adapted from De Bruyn, T. and Wets, J. (2006)

Table 2. Remittances and Economic Growth in Bangladesh
Dependent Variable: Per capita GDP growth

Explanatory Variables (All in logs)	*OLS (1)*			*IV-2SLS (2)*			*IV-GMM (3)*		
	Eq. [1]	Eq. [2]	Eq. [3]	Eq. [1]	Eq. [2]	Eq. [3]	Eq. [1]	Eq. [2]	Eq. [3]
Gross capital formation to GDP (lgcf)	- 4. 291 (-1.01)	0.527 (0.14)	7.038 (1.26)	12.134 (1.03)	-0.429 (-0.12)	5.992 (1.13)	12.134 (1.18)	-0.429 (-0.16)	5.992 (1.19)
Population growth (lpop)	- 17.57 (-2.35)	- 8.36 (-1.21)	2.523 (0.26)	6.241 (0.35)	-9.931 (-1.53)	0.763 (0.08)	6.241 (0.45)	-9.931 (-.2.09)*	0.763 (0.10)
Government consumption to GDP (lgov)	-3.731 (-1.43)	- 6.161 (- 2.64)*	-0.897 (-0.22)	1.973 (0.40)	-6.171 (3.10)**	-1.947 (-0.46)	1.973 (0.48)	-6.171 (-.07)**	-1.947 (-0.51)
M2 to GDP (lm2)	0.501 (0.24)	0.256 (0.15)	11.718 (-1.57)	7.421 (1.45)	0.033 (0.02)	9.487 (1.16)	7.421 (1.65)	0.033 (0.02)	9.487 (1.35)
Inflation rate (linf)	-0.042 (-0.14)	-0.397 (0.181)	-0.121 (-0.37)	0.363 (0.78)	-0.383 (-1.56)	-0.181 (-0.59)	0.363 (1.03)	-0.383 (-2.40)*	-0.181 (-0.85)
Remittances to GDP (lrem)	-0.498 (- 0.29)	-6.235 (-2.69)*	6.372 (0.77)	-8.666 (1.53)	-5.495 (-2.34)*	3.655 (0.38)	-8.666 (1.72)*	-5.495 (-2.23)**	3.655 (0.46)
Remittances to GDP squared (lrem2)		2.515 (3.16)**	7.759 (2.27)*		2.316 (3.05)**	6.764 (1.82)*		2.316 (4.22)**	6.764 (2.05)*
*(Remittances * M2) to GDP (lm2rem)*			-8.166 (-1.58)			-6.535 (-1.12)			-6.535 (-1.29)
	n = 34 r^2=0.58	n = 34 r^2=0.72	n = 34 r^2=0.75	n = 34 r^2=0.16 Wald chi^2=22	n = 34 r^2=0.72 Wald chi^2=71	n = 34 r^2=0.75 Wald chi^2=87	n = 34 r^2=0.16 Wald chi^2=14	n = 34 r^2=0.71 Wald chi^2=204	n = 34 r^2=0.75 Wald chi^2=205

Note: Estimation of Eq. [1]-[3] are carried out using ordinary least square (OLS) in column 1; using 2SLS estimator and adopting Saudi Arab's GDP as instrument for remittances (lrem) in column (2). Robust standard errors are reported in column (3) with the aid of IV-GMM estimator and adopting Saudi GDP as instrument. For estimations in columns (1) & (2), the equation is exactly identified with a F-stat on excluded instruments exceeding 10.

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Figure 1 . Remittances, Foreign Aid, and FDI Flows in Bangladesh

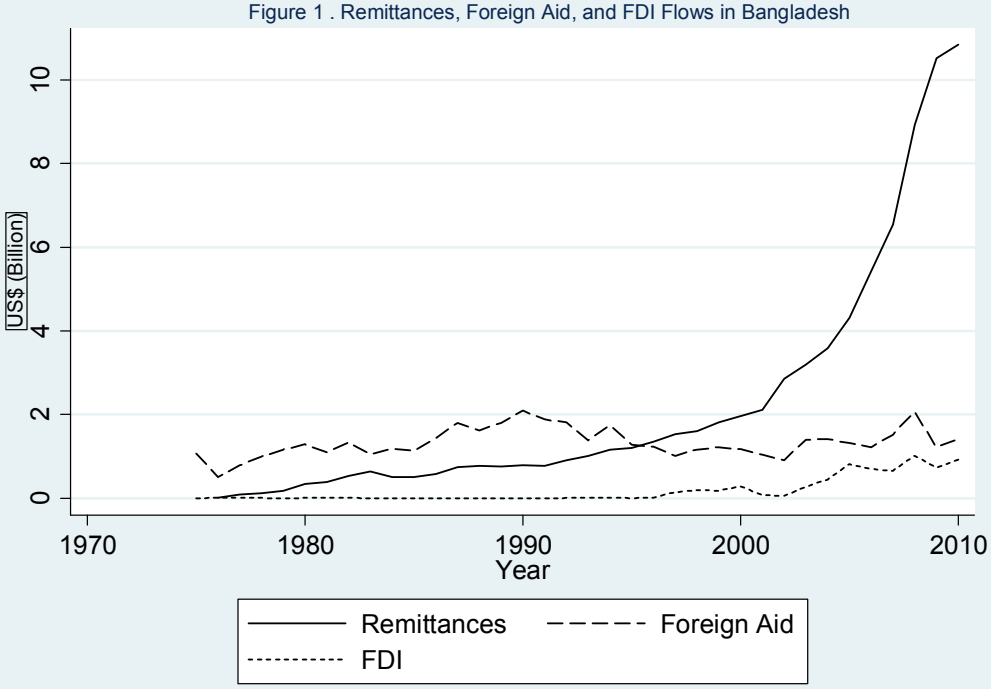
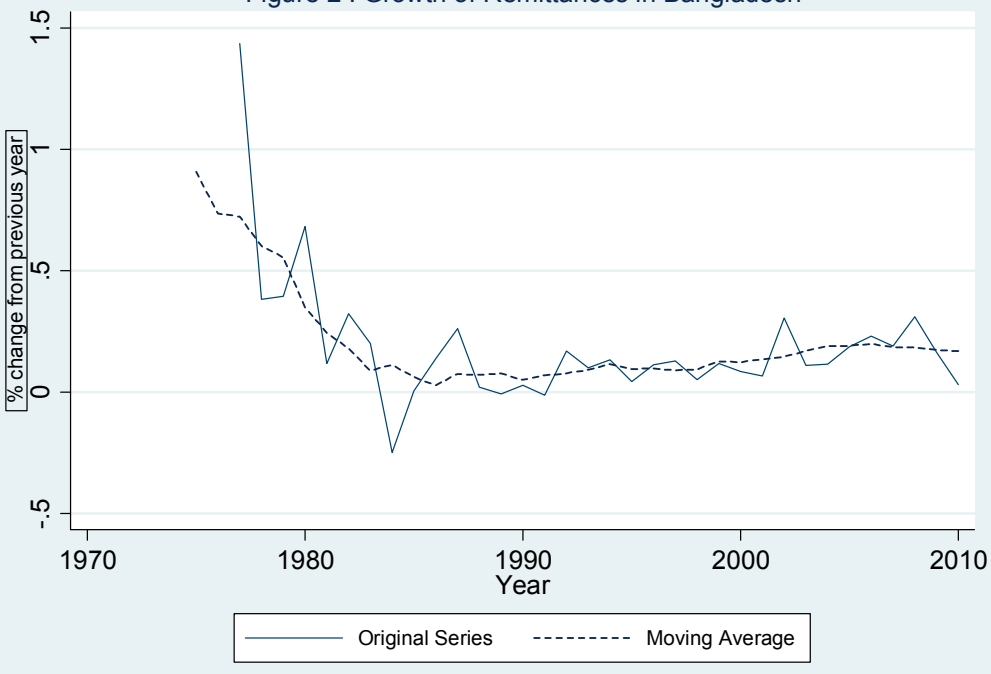


Figure 2 . Growth of Remittances in Bangladesh



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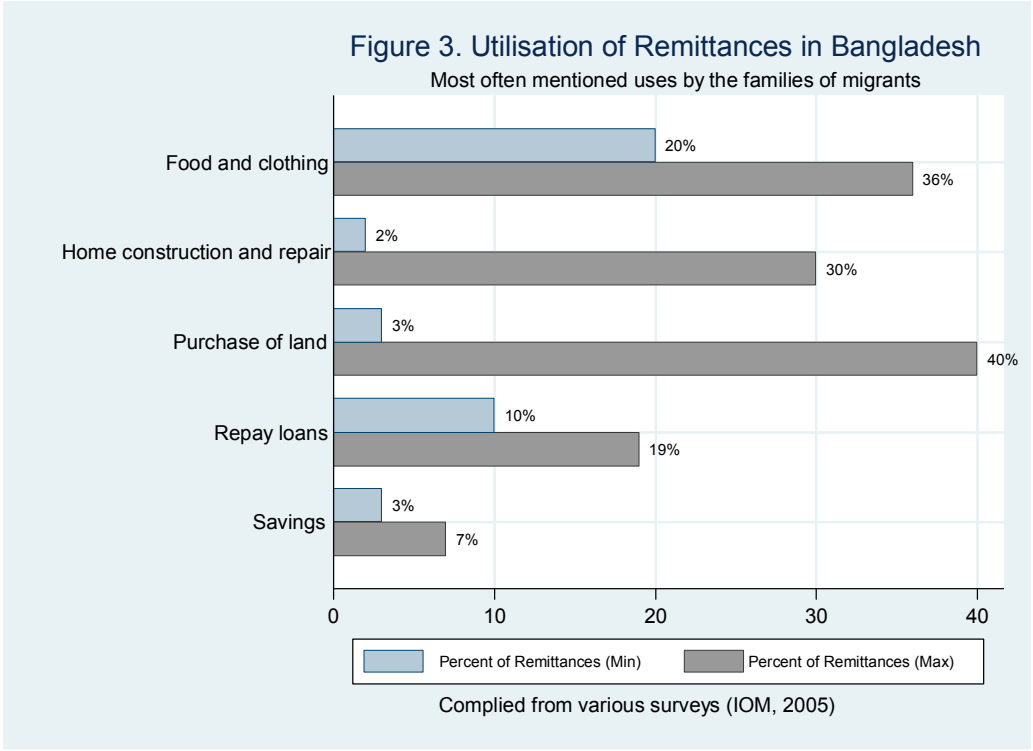

References:

Adams, R., & Page, J. (2005). Do International Migration and Remittances Reduce Poverty in Developing Countries? *World Development, 33*(10), 1645-1669.

Adams, R. J. (2005). Remittances, household expenditure and investment in Guatemala *Policy Research Working Paper Series 3532*. Washington DC: The World Bank

Amuedo-Dorantes, C., & Pozo, S. (2004). Workers' Remittances and the Real Exchange Rate: A Paradox of Gifts. *World Development* 32:1407-1417.

Azad, A.K. (2004) "Migrant Workers' Remittances: Can it be a Source of Finance for Micro-Enterprise Development in Bangladesh?" Paper presented at Asia Pacific Regional Micro Credit Summit Meeting of Councils, Dhaka, February 16 – 19

Barua, S., Majumder, M. and Akhtaruzzaman, M. (2007) "Determinants of Workers' Remittances in Bangladesh: An Empirical Study" Working Paper No. WP 0713, Policy Analysis Unit, Bangladesh Bank

Buchenau, J. (2008) "Migration, Remittances, and Poverty Alleviation in Bangladesh: Report and Proposal" Preparatory Assistance for Pro Poor Trade, UNDP: Dhaka

Catrinescu, N. , Leon-Ledesma, M., Piracha, M., and Quillin., B. (2009). Remittances, Institutions, and Economic Growth. *World Development, 37*(1), 81-92.

Catrinescu, N., M. Leon-Ledesma, M. Piracha and B. Quillin (2006) "Remittances, Institution and Growth" IZA Discussion Paper No. 2139, Bonn, Germany

Chami, Ralph, Adolfo Barajas, Thomas Cosimano, Connel Fullenkamp, Micheal Gapen and Peter Montiel (2008) "Macroeconomic Consequences of Remittances" *Occasional Paper* No. 259, International Monetary Fund

Chami, R., C. Fullenkamp and S. Jahjah (2003). Are Immigrant Remittance Flows a Source of Capital for Development? *IMF Working Paper 03/189*, Washington, DC

Chami, R., Hakura, D., & Montiel, P. (2009). Remittances: An Automatic Output Stabilizer? *IMF Working Papers 09/91*. Washington DC: International Monetary Fund
De Bruyn, T. and Kuddus, U (2005) "Dynamics of Remittance Utilization in Bangladesh" International Organization for Migration (IOM)

Cox-Edwards, A., & Ureta, M. (2003). International Migration, Remittances and Schooling: Evidence from El Salvatdor. *Journal of Development Economics, 72* (2), 429-461.

De Bruyn, T. and Wets, J. (2006) "Remittances and Development." *Conference Report on Migration and Development*, International Organization for Migration (IOM)

Faini, R. (2006) "Migration and Remittances: The impact on the Country of Origin" Paper presented at EUDN-AFD Conference on Migration and Development, Paris, November 8

Frank, R., & Hummer, R. (2002). The Other Side of the Paradox: The Risk of Low Birth Weight among Infants of Migrant and Nonmigrant Households within Mexico. *International Migration Review, 36*(3), 746-765.

Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, Financial Development, and Growth. *Journal of Development Economics, 90*(1), 144-152.

Giuliano, Paola and Marta Ruiz-Arranz (2005), "Remittances, Financial Development, and Growth", *IMF Working Paper No. 05/234*

Gupta, S., Pattillo, C., & Wagh, S. (2009). Effect of Remittances on Poverty and Financial Development in Sub-Saharan Africa. *World Development 37*(1), 104-115.

Hanson, G., & Woodruff, C. (2003). *Emigration and Education Attainment in Mexico*. mimeo. University of California, Riverside

Hassan, G., Chowdhury, M., & Bhuyan, M. (2016). Growth Effects of Remittances in Bangladesh: Is there a U-shaped Relationship? *International Migration*, doi:10.1111/imig.12242

Hassan, G., & Holmes, M. (2013). Remittances and the Real Effective Exchange Rate. *Applied Economics, 45*(35), 4959-4970.

Hildebrant, N., & McKenzie, D. (2005). The Effect of Migration on Child Health in Mexico *World Bank Policy Research Working Paper 3573 and Department of Economics, Stanford University*. Washington, DC: The World Bank

International Monetary Fund (2005) "Two Current Issues Facing Developing Countries" in *World Economic Outlook*

IOM. (2005). *Dynamics of Remittance Utilization in Bangladesh*. Geneva: International Organisation for Migration

Kapur, D. (2004): "Remittances: The New Development Mantra?", G-24 Discussion Paper No.29, UN Conference on Trade and Development, Geneva, Switzerland

Khan, M. W. R. (2008) "The Micro Level Impact of Foreign Remittances on Incomes in Bangladesh: A Measurement Approach Using the Propensity Score" Centre for Policy Dialogue: Dhaka

Mahmud, W. and Osmani, S. R. (1980) "Impact of Emigrant Workers' Remittances on the Bangladesh Economy", *Bangladesh Development Studies*, Vol. VIII, No. 3

Murshid, K, Iqbal, K., and Ahmed, M. (2002) "A Study on Remittance Inflows and Utilization" *International Organization for Migration* (IOM), Geneva

Quibria, M. G. (1986) "Migrant Workers and Remittances: Issues for Asian Developing Countries", *Asian Development Review*, Vol. 4.

Quibria, M. G. (1997) "International Migration, Remittances and Income Distribution in the Source Country: A Synthesis" *Bulletin of Economic Research*, Vol. 49, No. 1

Quibria, M. G. and Ahmad, Shafi (2008) "Aid Effectiveness in Bangladesh" *MPRA* Paper No. 10299

Rao, B., & Hassan, G. (2012a). Are Direct and Indirect Growth Effects of Remittances Significant? *The World Economy*, *35(*3), 351-372.

Rao, B. & Hassan, G. (2012b). An Analysis of the Determinants of the Long-Run Growth Rate of Bangladesh. *Applied Economics*, *44*(5), 565-580.

Ratha, Dilip (2007): Leveraging Remittances for Development. *Policy Brief, June*. *Migration Policy Institute*. Washington D.C.

Siddiqui, T. and Abrar, C.R. (2003) "Migrant Worker Remittances and Micro-Finance in Bangladesh" Working Paper No. 38, Social Finance Programme, International Labour Office

Siddqui, T. (2004) "Effeciency of Migrant Workers' Remittances: The Bangladesh Case" Asian Development Bank

Stahl, C., & Arnold, F. (1986). Overseas Workers' Remittances in Asian Development. *International Migration Review, 20*(4), 899-925

Stahl and Habib (1989) "The Impact of Workers' Remittances on Indigenous Industries: Evidence from Bangladesh" *The Developing Economies*, XXVII-3

World Bank (2011). *Migration and Remittances Factbook 2011.* Washington DC: The World Bank

World Bank (2008) *Remittance and Development*, Washington: DC

World Bank (2006) *The Development Impact of Workers' Remittances in Latin America*, Vol. 2: Detailed Findings (Chapter 3, Section V), Report No. 37026 (Washington)

World Bank (2005) *Global Economic Prospect 2006*, Washington: DC

Yang, D. (2008). International Migration, Remittances and Household Investment: Evidence from Philippine Migrants' Exchange Rate Shocks. *The Economic Journal, 118*(528), 591-630.