Impact of Remittances on Poverty in Developing Countries

Rashmi Banga✦ *and Pritish Kumar Sahu* ✦✦

Abstract: Remittances are increasingly becoming an important source of external financing for the developing countries. For some of the developing countries, it forms almost 40-50% of their GDP. Though there is a growing literature on the impact of remittances on development, very few studies have empirically estimated the impact of remittances on poverty in the developing countries. This study undertakes impact analysis of remittances on poverty in developing countries at two levels. ***Firstly,*** it estimates the impact of remittances on poverty in 77 developing countries; ***Secondly,*** separate analyses are undertaken for 29 developing countries and 21 Asian developing counties, which have 5% or more share of remittances in GDP. The results of the study consistently show that remittances significantly reduce poverty in recipient countries but the results are more reliable for countries with remittances greater than 5% of GDP.

JEL Codes: F22, F16, O15
Key Words: Remittances and poverty; Impact of Remittances on Poverty; Remittances in Developing Countries; Remittances in Asian Developing Countries

1. Introduction

Remittances are increasingly becoming an important source of external financing for the developing countries. For some of the developing countries, it forms almost 40-50% of their GDP. There has been a fifteen-fold increase in remittances to developing countries since 1988 with remittances increasing from $ 20 billion to $328 billion in 2007. Though there is a growing literature on the impact of remittances on development, very few studies have empirically estimated the impact of remittances on development in general, and on poverty in particular, in the developing countries. To fill this gap in the literature, this study undertakes impact analysis of remittances on poverty in developing countries at two levels. ***Firstly,*** it estimates the impact of remittances on poverty in 77 developing

✦ Senior Economist, UNCTAD-India & Associate Professor Jawaharlal Nehru University
✦✦ Consultant, UNCTAD-India

countries; ***Secondly,*** it undertakes separate analyses for 29 developing countries and 21 Asian developing counties, which have 5% or more share of remittances in GDP.

Interestingly, the gap between migrants from developing countries to developed countries and to other developing countries has reduced over time. In 2005, the migrant stock from developing countries to developed countries was around 53% while to other developing countries, it was around 47%. Studies have pointed out that most migration, and especially the migration of the poor, takes place between developing countries[1]. In terms of number of emigrants, developing countries take a lead and explain around 95% of total emigrants[2]. The remittances flows are accordingly much higher to developing countries. In 2008, top ten remittances receiving countries were developing countries. In 2007, the total remittances to developing countries through official sources was estimated at $328 billion and it is likely that billions more are transferred through unofficial sources (World Bank-2009).

For many developing countries the remittances flow has grown not only in size but also in importance in terms of their share in GDP. In many developing countries, more than 20% of GDP is contributed by remittances. In this context, it becomes important to estimate the impact of remittances on poverty levels in developing countries. Using the panel data for 77 developing countries for the period 1980-2008, the study estimates the impact of remittances on Poverty Headcount ratios, Poverty Gap at $ 1.25 a day (PPP) and Poverty Gap at $2 a day (PPP).

The rest of the paper is organised as follows: section 2 provides a review of literature on migration and development, including the studies on remittances and poverty; section 3 discusses trends in migration and remittances; section 4 presents the models estimated; section 5 presents the results for 77 developing countries for the period 1980-2008, and results with respect to 21 Asian developing countries; section 6 concludes with policy implications.

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[1] House of Commons International Development Committee (2003-04).

[2] World Bank Working Paper No 102, 2007

2. Remittances and Economic Development: Review of Literature

The official recorded remittances are much lower than the actual remittances that take place through official and unofficial channels. Remittances through informal channels could add at least 50 percent to the globally recorded flows (World Bank, 2006, *ibidem,* p. 85). Despite this under reporting, many studies have highlighted the important nexus between the international migration, remittances and development. This section summarizes the existing studies, which examine this nexus, especially in the context of developing countries.

Several studies have pointed out that more the inflow of remittances, healthier the recipient country will be. In times of economic distress, remittances may actually be countercyclical to the extent that migrants are motivated by altruism and send more money home. The stability of these inflows also opens up an opportunity for developing countries to borrow at lower cost in international capital markets by securitizing future flows of remittances (IMF 2007). As remittance receipts are widely dispersed, they may not cause the real exchange rate to appreciate.

Pant (2008) argues that whether remittances are utilized for consumption or purchasing houses, or other investments, they produce positive impact on the economy by stimulating demand for other goods and services. Migrants provide different forms of capital that have developmental impact on their countries of origin. These impacts may be in the form of financial, social, cultural, political and/or economic impacts. The impact can be examined at both micro level, like in case of households and macro level like impact on GDP growth, poverty and development.

2.1. Link between Remittances and Household Development

Majority of the existing studies, which focus on the impact of migration on household members left behind, have shown positive impact in both short run and long run.

Rapoport and Docquier (2006) show how the household members who are left behind, use migrants' remittances. Remittances are used to repay loans taken to finance migration or education, and insurance and strategic motives. It also directly contributes to household income, allowing households to purchase more assets; enables higher investment in business; and facilitate buying more goods, including education and health inputs. Yang (2004), and Woodruff and Zenteno (2001) suggest that at the household level, remittances can spur entrepreneurial activity. Hildebrandt and McKenzie (2005) emphasize the knowledge transfer and change in attitudes of the remaining family members of the migrants. For example, they find that the knowledge about contraceptives increased with emigration of household members from Mexico to the US.

2.2. Link between Remittances and GDP

Studies examining the relationship between remittances and GDP growth show mixed result. Faini (2002, 2003) finds a positive relationship between growth and remittances using cross-country data. Similarly, positive relationship between the two is also supported by several studies for Mexican economy. For example, Adelman and Taylor (1990) find that "every dollar Mexican migrants send back home or bring back with them increases Mexico's GNP from anywhere between US$ 2.69 and US$ 3.17, depending on which household income group received the remittances". Durand et al (1996) suggest that for every US$ 2 billion in remittances that entered Mexico, production in the economy increased by over a US$6.5 billion dollar. Ekanayake et al (2008) examine the impact of foreign remittances and foreign direct investment on the economic growth of developing countries. The study uses annual data of a large group of developing countries covering Asia, Africa, and Latin America and the Caribbean for the period 1980-2006. They find that both remittances and foreign direct investment significantly promote growth in developing countries. However, this positive relationship is challenged in several studies, e.g. Spatafora (2005) finds that there is no direct link between real per capita output growth and remittances. Chami et al (2005), using panel data for 113 developing countries find that remittances have a negative effect on economic growth.

2.3. Link between Remittance, Consumption and Investment

Many studies examine the relationship between remittances and investments in the home countries. Barajas et al. (July 2009) point out that for developing countries remittances are large relative to other financial flows[3]. They find that in last 10-year period, remittance flows have become as large as foreign direct investment (FDI) flows to developing countries, amounting on an average of about one third of export earnings, more than twice the private capital flows, almost 10 times official capital flows, and more than 12 times official transfers. In light of this, developing countries should capitalize this huge amount of remittance inflows and use it for investment to promote development and the growth. Empirical evidence in this regard shows that the inflow of remittances by the migrant workers and professionals from an underdeveloped and developing country helps in increasing the investment activities in the recipient country. Asiedu (2003) reveals that nearly 30 percent of remittances are used for the purpose of investment and construction of house in Ghana. Similarly, according to Drinkwater et al. (2003), if the primary income earner remains at home and continues to maintain the household, earnings from migration are more easily diverted to savings and investment. By using 1988 survey of 1526 Egyptians migrants, McCormick and Wahba (2001), attempt to find the probability of a migrant becoming an entrepreneur/employer/self employed person or a business owner- upon his/her return from working abroad. Even though, the results are different for literate and illiterate migrants, the general conclusion derived was that two factors namely, time spent working abroad and total amount of money saved abroad, have positive and significant effect on the likelihood of migrants becoming an entrepreneurs on their return to the home country.

Adams (2005a) examines the impact of remittances on the spending behavior of household for consumption and investments, in both the rural and urban Guatemala. The study takes the data from 2000 survey of 7276 households and compares the marginal budget share of remittance receiving and non-remittance receiving household on six consumption and investment goods. The findings show that the households receiving

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[3] In 2004 official international remittances were estimated at $93 billion per year (Ratha, 2004), making them about twice as large as the level of official aid-related flows to developing countries.

international remittances spend more at the margin on investment goods, especially, on housing and education, and spend less, at the margin, on food items. Similarly, Yang (2004) analyses how the exchange rate shocks during 1997 due to the Asian Financial Crisis affected the expenditure pattern of 1646 Philippine households receiving international remittances. Of the several findings in this paper, one of its findings shows that a favorable exchange rate shocks (i.e. more remittances income as a result of favorable exchange rate shocks) increases the investment of remittances receiving household in entrepreneurial activities specifically in transportation, communication and manufacturing enterprises.

2.4. Link between Remittances, Poverty and Welfare

The flow of remittances remains more or less stable irrespective of the economic condition of the recipient country[4]. Remittances are expected to reduce poverty as they may be directly received by the poor. The impact of remittances on reduction of poverty can be understood from both micro and macro perspectives. However, to capture this impact, there is no formal framework (Chimhowu et al 2005). But it is evident and it is reasonable to assume that the amount of transfer done by the migrants to the family members back home do have some overall impact in reducing the poverty. Uruci and Gedeshi (2003) using survey of long-term legal immigrants find that majority of the international migrants (69.7 %) send their money in order to meet “the essential needs of the family.”

Very few studies explicitly address the link between remittances and poverty. Adams and Page (2005) used household surveys of 71 developing countries to examine the impact of international migration on poverty. Controlling for the level of income, income inequality, and geographical region, they find that international remittances have a strong statistically significant negative impact on poverty. A 10 % increase in the share of remittances in a country’s GDP, lead to a reduction of 1.6 % of people living in poverty.

[4] In the wake of the Asian financial crisis in the late 1990s, remittances to developing countries continued to rise even though FDI and official aid flows declined (World Bank, 2004).

Campos and Palomo (2002) find that in 2000, the remittances helped reduce the national poverty rate by 4.2% in El Salvador as well as reduced the Gini coefficient from 0.55 to 0.53.

Adams (2004) finds that the squared poverty gap measure in Guatemala declined by 19.8 % when international remittances were included as a part of the total household income. López-Cordova (2005) finds that remittances have a statistically significant impact in reducing poverty in Mexico at the municipal level. Gustafsson and Makonnen (1993) used the data of 7680 households from 1986-87 survey to examine the impact of remittances on poverty and welfare in rural and urban Lesotho. They found that 35 % of household incomes come from the remittances. It shows that if the remittances were set to zero, the average per-capita household consumption would fall by 32 % and the poverty head count index would increase by 26%. In addition, a cessation of remittances would lead to a 52 % increase in the poverty gap index. A similar study by Taylor et al (2005) used the data of 1782 household from 2003 survey of rural Mexico to show the impact of international remittances on poverty. The study estimates that poverty headcount and poverty gap indices would decline by 0.77 and 0.53 respectively with 10 % increase in international remittances.

2.5. Link between Remittances and Foreign Exchange:

Remittances constitute one of the major and more resilient sources of foreign exchange earnings for many developing countries. Remittances ease the short run foreign exchange constraints at times when the foreign investment and the other official assistance decline due to external factors. Bouhga and Hagbe (2004) explain the importance of remittances to Morocco as a source of foreign exchange that could be used positively for development. Similarly Ranjan and Subramanyam (2005) also find that remittances have more positive impact on the exchange rate than aid.

2.6. Link between Remittances and Employment

Very few studies have estimated the macro economic impact of remittances on the employment of the recipient country. At micro level studies suggest mixed results. Frank, (2001) argue that the families receiving international remittances severely curtail their work efforts. Similarly Rodriguez and Tiongson (2001) for Manila and Funkhouser (1992) for Managua conclude that remittances reduce employment. However, they do not take into account of endogeneity of remittances with respect to labor supply. Rodriguez and Tiongson (2001) conclude that when migration occurs, non-migrant relatives receive remittances, which they perceive as additional non-labour income. An increase in non-labour income then reduces their participation in local labour markets. In contrast to these studies, Cox-Edwards and Rodriguez-Oreggia (2006) find that remittances have no impact on the labor supply of household members in Mexico. However, at macro level, when the inflow of remittances is used for the investment, the non-migrated families get benefited by seeking employment.

Overall, literature provides sufficient evidence to support the hypothesis that remittances are beneficial to the recipient countries and can significantly affect poverty and development. However, most of the studies are survey-based and very few empirical studies exist which are able to quantify the impact of remittances on poverty levels in the developing countries.

3. Trends in Migration and Remittances

The differences in regional income, growing inequality and more particularly the increased demand for skilled/unskilled labour can be argued as the most common reasons for the rapid increase in the global migration. Besides these, rapid globalization and gradual liberalisation in migration policies of many countries are some of the facilitating factors for higher global migrants over the years. This section briefly examines the global trends in migration and remittances.

3.1. Trends in Global Migrants

Human Development Report (2009)[5] in its estimation reveals that about 214 million people, or roughly 3.1 percent of the world's population, lived and worked outside the country of their birth in 2008, up from 120 million in 1990. Given the difficulties in the definition of a migrant across countries, this may be an underestimation of the real stock of migrants in the world.

Table 1 shows the movement of migrants from developing and developed countries. Interestingly, the migrants from developing countries to other developing countries constitute 47% of total migrants from developing countries in 2005. Migration therefore may no longer be considered as a 'South-North' phenomenon, as often assumed. Many countries in Southeast Asia, for instance, are heavily reliant on cheap migrant labour from neighboring countries[6]. However, the extent and issues surrounding migration between developing countries remain poorly understood, largely because of incomplete and unreliable data on migration in developing countries (Rath and Shaw, 2007). Majority of migrants from high-income OECD countries go to other high-income OECD countries (85%). The gap between migrants in developing countries and developed countries is not very wide. 59% of total migrants are based in developed countries as compared to 41% in developing countries.

[5]*Overcoming Barrier:, Human Mobility and Development, UNDP (2009)*

[6] House of Commons International Development Committee, (2003-04).

Table 1: Global Migrants Stocks (In Million)

Migrants From	Migrants In			
	Developing Countries	High Income OECD Countries	High Income Non OECD Countries	Total
Developing Countries	73.9 (47%)	61.8 (40%)	20.1 (13%)	155.8 (100%)
High Income OECD Countries	3.4 (11%)	25.5 (85%)	1.2 (4%)	30.1 (100%)
High Income Non OECD Countries	0.8 (17%)	3.6 (77%)	0.3 (6%)	4.7 (100%)
Total	78 (41%)	90.9 (48%)	21.6 (11%)	191 (100%)

Source: World Bank Working Paper No: 102 (2007)[7].

Country level estimates show that USA has the highest number of immigrants (38.4 million), followed by Russia (12.1 million) and Germany (10.1 million) (Table 2). On the other hand, foreign workers in Gulf countries continue to represent a high proportion of total population. In Qatar and Andorra, 78% of total population constitutes migrants.

Table 2: Top 10 Immigration Countries, 2005.

Countries	No. of immigrants (In Millions)	Countries	As % of Population
USA	38.4	Qatar	78
Russia	12.1	Andorra	78
Germany	10.1	UAE	71
Ukraine	6.8	Monaco	70
France	6.5	Kuwait	62
Saudi Arabia	6.4	Isle of Man	48
Canada	6.1	Channel Islands	46
India	5.7	West Bank & Gaza	45
U.K.	5.4	Singapore	43
Spain	4.8	Bahrain	41

Source: UN Population Division.

Similarly the available latest data on the number of emigrants shows that, Mexico (11.5 million) and Russia (11.5 million) have the highest number of emigration to the rest of

[7] The Authors calculated on using the University of Sussex and World Bank data based on UN (2005), individual country censuses, OECD (2006), and others.

the world during the year 2005 (Table 3). India stood second in the list, followed by China and Ukraine. However, emigrants as percentage of population is highest for Jamaica (39%) followed by Bosnia (38%) & Herzegovina (38%) (Table 3).

Table 3: Top 10 Emigration Countries in the year 2005

Countries	No. of Emigrants (In Millions)	Countries	As % of Population
Mexico	11.5	Jamaica	39
Russia	11.5	Bosnia & Herzegovina	38
India	10.0	Trinidad & Tobago	28
China	7.3	Albania	27
Ukraine	6.1	Armenia	27
Bangladesh	4.9	West Bank & Gaza	26
Turkey	4.4	Kazakhstan	25
Ukraine	4.2	Georgia	23
Germany	4.1	Ireland	22
Kazakhstan	3.7	Serbia & Montenegro	22

Source: Development Prospects Group, World Bank.

3.2 Trends in Global Remittances

Recent available data on the global remittances reveals that during the year 2008 the total remittances inflow to all the developing countries is estimated at $ 338 billion, up by 16.7 percent over the same period last year. This estimates 10.8 % growth for the developed countries. At the country level, India, China and Mexico received around 40% of total remittances, despite the weak job market in many developed countries. Table 4 show top 10 remittances recipient countries.

Table 4: Top 10 Recipients of Remittances during the year 2008.

Top 10 Countries	US $ Billion	Top 10 Countries	% of GDP
India	52	Tajikistan	50
China	49	Tonga	38
Mexico	26	Moldova	31
Philippines	19	Kyrgyz Rep	28
Poland	11	Lesotho	27
Nigeria	10	Samoa	26
Romania	9	Lebanon	25
Bangladesh	9	Guyana	24
Egypt	9	Nepal	22
Vietnam	7	Honduras	20

Source: Development Prospects Group, World Bank.

Remittances globally have increased by average annual growth rate of 17.7% in the period 2004-2008 (Table 5). The average annual growth rate in this period has been highest for Europe and Central Asia (32.5%); followed by Sub-Saharan Africa (29.3%) and East Asia and Pacific (21.4%). However, in 2008, South Asia (35.6%) experienced the highest annual growth in 2008 over 2007, followed by East Asia and Pacific (20.7%).

Table 5: Annual Growth of Remittances inflow in Different Region.

Income Groups/ Regions	1991	1995	2000	2004	2005	2006	2007	2008
All developing countries	**9.71**	**9.50**	**8.74**	**17.06**	**21.03**	**18.33**	**22.93**	**16.72**
Low-income countries	-16.66	13.38	10.37	15.18	21.82	23.88	23.37	28.32
Middle-income	12.70	9.25	8.62	17.22	20.96	17.85	22.89	15.64
Lower MICs	12.79	17.45	8.54	12.40	22.58	18.57	28.98	21.04
Upper MICs	12.56	-1.26	8.76	25.27	18.52	16.72	13.31	5.97
East Asia and Pacific	17.48	43.60	5.11	23.37	25.10	14.15	23.80	20.76
Europe and Central Asia	-13.15	-10.94	9.67	45.34	43.59	24.10	35.98	13.83
Latin America and Caribbean	18.23	20.70	13.54	18.36	15.68	18.11	6.82	2.34
Middle-East and North Africa	11.91	-5.38	0.76	13.13	8.35	4.62	20.11	10.62
South Asia	8.60	5.05	14.11	-5.51	18.23	25.35	27.09	35.63
Sub-Saharan Africa	-0.17	38.58	4.29	34.35	16.92	34.66	47.64	13.37
High income OECD	**3.08**	**15.28**	**-4.06**	**12.93**	**3.67**	**7.58**	**17.05**	**10.57**

High income non-OECD	**3.72**	**-30.44**	**-1.96**	**35.10**	**12.48**	**5.33**	**8.64**	**14.90**
High income	*3.10*	*12.43*	*-3.99*	*14.11*	*4.23*	*7.43*	*16.49*	*10.84*
World	**6.09**	**10.77**	**3.69**	**16.13**	**15.85**	**15.31**	**21.26**	**15.26**

Source: World Bank
Note: MIC stands for middle Income Countries.

4. Empirical Model

Very limited empirical literature exists on macro economic impact of remittance on poverty. However, recent cross-country studies are increasingly finding evidence of positive impact of remittances on reducing poverty. World Bank study by Adams and Page (2005) shows that, a 10% increase in per capita official international remittances will lead, on average to a 3.5% decline in the share of people living in poverty. Similarly, IMF (2007) study finds that on average, a 10% increase in the share of remittances in a country's GDP is associated with about a 1.5 % fall in headcount poverty and 1.1 % fall in poverty gap.

To estimate the impact of remittances on poverty in developing countries, a panel data is used for 77 developing countries for the period 1980-2008. In order to test whether impact of remittances share in GDP is stronger beyond a threshold level, a separate analysis is undertaken for 29 countries with remittances to GDP ratio higher than 5%. In order to assess the regional variations in the impact, further analysis is undertaken for 21 Asian developing countries, with remittances to GDP ratio higher than 5%.

Following Ravallion (1997) and Ravallion and Chen (1997) poverty is taken as a function of per capita income, some measure of income distribution, and the remittances to GDP ratio[8]. The baseline specification is

$$\text{Log}\,(POV_{it}) = \alpha_1 + \alpha_2 \log\,(PCY_{it}) + \alpha_3 \log\,(INEQ_{it}) + \alpha_4 \log\,(REM_{it}) + \varepsilon_{it} \quad \ldots\ldots\ldots(1)$$

(Where, $i = 1.....N$, $t = 1....T_i$),

Where POV_{it} is poverty measures in country i at time t; α_1 captures fixed effects; PCY is per capita income; INEQ is income inequality as measured by the Gini index; and REM is remittances to GDP ratio

[8] Similar model is estimated by IMF (2007).

The model expects that poverty is reduced as per capita income rises; hence, α_2 is expected to be negative. Based on previous studies we expect higher poverty to be associated with greater income inequality; hence, α_3 is expected to be positive. Controlling for these two variables the model estimates the sign and magnitude of α_4, which indicates the direct impact of share of remittances in GDP on poverty.

To measure poverty, three indicators are used- Poverty headcount ratio at $1.25 a day (PPP) (% of population); Poverty gap at $1.25 a day (PPP) (%); and Poverty gap at $2 a day (PPP) (%). Poverty gap measures the mean distance below the poverty line as a proportion of the poverty line, and captures how poor the are poor, i.e., how far below the poverty line the average poor person's income is. Gini coefficient is used as a measure of inequality. Remittances are expressed as a ratio of the GDP of recipient countries. Per capita income variable used is per capita GDP in constant 2000 U.S. dollars. The log transformation of all the variables allows us to interpret the coefficients as elasticities.

Though some studies have estimated the impact of remittances on poverty estimating the above equation, the relationship between remittances and poverty may not be unidirectional. Higher poverty levels may lead to higher migration and therefore higher remittances. In order to take account of the endogeneity problem we estimate Three Stage Least Squares method and estimate two equations. Similar methodology is followed by IMF (2007).

The specification for the poverty equation is the same as in equation 1. Along with this equation, we also estimate an equation that captures determinants of remittances. Thus, the second equation estimated is remittances (REM) as a function of poverty (POV), trade openness (Trade to GDP ratio), Literacy levels and lagged remittances (Remt-1).

$$\text{Log}(REM_{it}) = \beta_1 + \beta_2 \log(POV_{it}) + \beta_3 \log(TRADE_{it}) + \beta_4 \log(LIT_{it}) + \beta_5 \log(REMIT_{it-1}) + \varepsilon_{it} \dots\dots\dots\dots (2)$$

$(i = 1.....N, t = 1....Ti)$,

To estimate the determinants of remittances, we use variables suggested by the literature on the motivation to migrate and remit. Since the data on migrants is limited, we do not use it directly. It is expected that higher levels of poverty will lead to more migration and higher remittances; therefore, β_2 is expected to be positive.

Trade openness, measured by trade to GDP ratio represents openness of the economy. The more open the economy the more easily the remittances may flow in and labour mobility may take place. Trade openness (β_3) is therefore expected to positively influence remittances. The sign of β_4 may be hypothetical depending on whether more educated migrate from the country or less educated migrate. Literacy levels are captured by literacy rate in adult total (% of people ages 15 and above). Lagged remittances are used to capture the dynamic impact.

5. Impact of Remittances on Poverty in Developing Countries: Empirical Results

The results of the Three Stage Least Squares model are reported in Table 6 to Table 8.
The analysis is first undertaken for all developing countries for which the data on remittances is available. We form an unbalanced panel data for 77 countries for the period 1980-2008. The three stage least squares estimation results show that remittances have a significant negative impact on poverty headcount ratio but the impact on other measures of poverty, like poverty gap and squared poverty gap, is not statistically significant (Table 6). Other variables like per capita GDP and inequality have the right signs and are found to be statistically significant. The impact of poverty on remittances is not found to be significant. Only lagged remittances is found to have statistically significant impact on remittances implying that the countries with higher remittances in the initial year, possibly indicating higher migrant stock, have higher remittances.

However, the results improve significantly when the analysis is undertaken for countries with remittances as a percentage of GDP of 5% or more (Table 7). These are 29 countries. Remittances are found to have significant impact on all three measures of poverty. With the given the level of GDP, a 10% increase in remittances reduce the poverty headcount ratio by about 3.1% and poverty gap by about 3- 5%, depending on how poverty gap is measured in developing countries with above 5% share of remittances in GDP. As expected, higher per capita GDP lowers poverty but higher inequality leads to higher poverty. These results indicate that remittances have stronger impact on poverty reduction if they are above the threshold of 5% of GDP of the country.

Table 6: Three Stage Least Squares Estimations: Dependent Variables- Poverty and Remittances (77 countries; 1980-2008).

VARIABLES	DEPENDENT VARIABLE- Poverty Headcount Ratio at $1.25 a Day (PPP) (% of Population)		DEPENDENT VARIABLE- Poverty Gap at $1.25 a Day (PPP) (%);		DEPENDENT VARIABLE- Poverty Gap at $2 a Day (PPP) (%)	
	POVERTYHC	REMITTANCES	POVERTY1	REMITTANCES	POVERTY2	REMITTANCES
Per capita GDP in constant 2000 U.S. dollars	-1.35*** (-18.86)		-1.54*** (-17.33)		-1.32*** (-16.83)	
Gini coefficient	1.09*** (4.09)		2.07*** (6.28)		1.43*** (4.87)	
Remittances as a ratio to GDP	-0.09** (-1.91)		-0.09 (-1.04)		-0.09 -(1.64)	
Lagged Remittances		0.89*** (22.66)		0.89*** (22.76)		0.89*** (22.67)
Poverty		0.01 0.31		0.02 0.48		0.01 (0.28)
Trade to GDP ratio		0.13** (1.94)		0.16 (1.27)		0.09 (0.77)
Literacy levels		-0.01 0.15		-0.01 -0.15		-0.01 -(0.13)
Constant	9.19*** (9.03)	-0.37 -0.47		-0.47 -0.71		-0.22 -(0.29)
Observations	264	264	264	264	244	244
Adj R Square	0.78	0.84	0.75	0.84	0.74	0.84
Chi 2	356.37***	550.31	305.21	554.32	284.42	549.23

Source: Authors estimations

Note: ** and *** represents the significance level at 5% and 10% level respectively

Table 7: Three Stage Least Squares Estimations: Dependent Variables- Poverty and Remittances (29 countries; 1980-2008)- Countries with Remittances as a Ratio of GDP as 5% or more

VARIABLES	DEPENDENT VARIABLE- Poverty Headcount Ratio at $1.25 a Day (PPP) (% of Population)		DEPENDENT VARIABLE- Poverty Gap at $1.25 a Day (PPP) (%);		DEPENDENT VARIABLE- Poverty Gap at $2 a Day (PPP) (%)	
	POVERTYHC	REMITTANCES	POVERTY1	REMITTANCES	POVERTY2	REMITTANCES
Per capita GDP in constant 2000 U.S. dollars	-1.16*** (-8.68)		-1.21*** (-6.96)		-1.08*** (-7.36)	
Gini coefficient	2.95*** (9.22)		4.25*** (10.06)		2.97*** (8.30)	
Remittances as a ratio to GDP	-0.31*** (-2.82)		-0.31*** (-2.31)		-0.51*** -(4.36)	
Lagged Remittances		0.87*** (17.84)		0.87*** (18.35)		0.87*** (16.63)
Poverty		0.001 (0.03)		-0.01 -(0.62)		-0.02 -(0.59)
Trade to GDP ratio		0.10 (1.04)		0.10 (1.01)		0.07 (0.84)
Literacy levels		0.05 0.52		0.10 0.91		0.09 (0.86)
Constant	1.54 (0.92)	-0.32 -0.73		-0.49 (-1.10)		-0.31 -(0.71)
Observations	229	229	229	229	219	219
Adj R Square	0.78	0.87	0.75	0.84	0.71	0.87
Chi 2	248.39	472.96	305.21	554.32	164.67	440.51

Source: Authors estimation
Note: ** and *** represents the significance level at 5% and 10% level respectively

Table 8 reports the results of impact of remittances on poverty reduction in Asian developing countries (21 countries), which have remittances to GDP ratio of 5% or more. The results show that remittances have a stronger impact on poverty headcount ratio in Asian developing countries. <u>On an average, with the given GDP levels, a 10% rise in remittances will lead to reduction of 3.9% in poverty headcount ratio and around 3 - 3.5% in poverty gap in Asian developing countries which have above 5% share of remittances in GDP.</u>

Table 8: Three Stage Least Squares Estimations: Dependent Variables- Poverty and Remittances (Asian Developing countries with Remittances to GDP ratio of 5% or above; 1980-

VARIABLES	DEPENDENT VARIABLE- Poverty Headcount Ratio at $1.25 a Day (PPP) (% of Population)		DEPENDENT VARIABLE- Poverty Gap at $1.25 a Day (PPP) (%);		DEPENDENT VARIABLE- Poverty Gap at $2 a Day (PPP) (%)	
	POVERTYHC	REMITTANCES	POVERTY1	REMITTANCES	POVERTY2	REMITTANCES
Per capita GDP in constant 2000 U.S. dollars	-0.94*** (-6.47)		-1.96*** (-8.71)		-1.54*** (-5.54)	
Gini coefficient	2.91*** (8.55)		4.17*** (6.67)		2.03*** (2.66)	
Remittances as a ratio to GDP	-0.39*** (-2.66)		-0.30*** (-2.32)		-0.35*** (-2.20)	
Lagged Remittances		0.79*** (12.44)		0.99*** (18.16)		0.97*** (17.20)
Poverty		-0.01 (-0.38)		-0.006 -(0.23)		-0.01 -(0.41)
Trade to GDP ratio		0.06 (0.53)		0.02 (0.22)		0.06 (0.63)
Literacy levels		-0.03 (-0.22)		0.10 (1.03)		0.09 (0.32)
Constant	0.02 (0.02)	-0.32 -0.73	1.86 (0.58)	-0.49 (-1.25)		-0.57 (-1.41)
Observations	145	145	145	145	124	124
Adj R Square	0.78	0.81	0.89	0.96	0.75	0.96
Chi 2	169.86	208.96	211.91	607.17	174..7	601.53

Source: Authors estimation

Note: ** and *** represents the significance level at 5% and 10% level respectively

The empirical results indicate that the poverty reducing elasticity of remittances is higher for Asian developing countries where share of remittances is greater than 5% of GDP as compared to all developing countries with 5% or more share of remittances in GDP.

6. Conclusions and Policy Recommendations

The benefits of remittances, as financial flows to the developing countries, are well documented in the literature. Remittances are more stable and predictable as compared to other financial flows and more importantly, they are counter-cyclical providing buffer against economic shocks. In conflict or post–conflict situations, remittances can be crucial to survival, sustenance, rehabilitation, and reconstruction. However, impact of remittances on poverty has led to a considerable debate. Studies that argue against remittances having poverty reducing effect, point out that given the high transaction costs of migrating, 'truly poor' do not migrate. While this argument has some merit, it has little evidential support as a stream of studies from different countries has shown that 'very poor' and 'poor' do migrate[9.] Further, the average annual growth of remittances to low income countries in the period 2004-2008 was 22%, which was higher than to middle-income countries (18.9%).

Apart from the debate on whether poor migrate or not, there is a growing debate, with little empirical evidence, on whether remittances is able to effectively reduce poverty levels in the recipient country or not. To address this issue, this study empirically estimates the impact of share of remittances in GDP in 77 developing countries on three measures of poverty, namely Poverty Headcount Ratio at $1.25 a day; Poverty Gap (at $ 1.25 a day); and Poverty Gap (at $ 2 a day). Similar analysis is undertaken for Asian developing countries with more than 5% share of remittances in their GDP.

The results of the study, using data of 77 developing countries; 29 developing and 21 Asian developing countries with remittances greater than 5% of GDP, consistently show that remittances significantly reduce poverty in recipient countries but the results are more reliable for countries with remittances greater than 5% of GDP. For the given level of GDP, a 10% average increase in remittances is found to reduce the poverty headcount ratio by about 3.1% and poverty gap by about 3- 5% in developing countries, depending

[9] Sabates Wheeler, Sabates and Castaldo (2005);

on how poverty gap is measured. On an average, for the given level of GDP, a 10% rise in remittances leads to a reduction of 3.9% in poverty headcount ratio and around 3-3.5% reduction in poverty gap in developing countries which have above 5% share of remittances in GDP.

Though the empirical evidence indicates that remittances can reduce poverty in the recipient countries, but what makes remittances work for poverty reduction is not clear. There are many factors affecting this channel. To begin with, remittances are a function of the numbers of migrants, the amount of money they earn, and their propensity to remit. However, migrants may have large propensity to remit but the home and host country policies may not be conducive to remittances. Even if the policies are conducive, due to absence of appropriate channels of sending remittances, these may reach the poor only after a long gap (when the migrant decides to carry the remittances personally or sent it through someone). This may not be very effective in terms of reducing poverty. Even if poor receive the remittances, proper use of remittances is important for sustainable reduction in poverty.

Given the number of facilitating factors required for remittances to work for poor, it is unlikely for it to happen on its own. Sustained policy intervention at each stage is required. To begin with, migration has to be accepted as a win-win situation by origin and destination countries. Migrants contribute to the development of home country in a number of ways including remittances and to development of host country by filling the labour demand and supply gap. It is therefore important to view migration as pro-development by all. However, in order to receive migrants that fill the demand and supply gap in the migrant-receiving countries, international forums may be used to formulate policy frameworks to regulate the flow of migrants and reduce the number of illegal migrants.

Regulated flow of migrants will help in reducing vulnerabilities of migrants. It may also improve the existing policy environment that ensures rights to migrants, like rights to personal security; rights of access to social services and facilities; and formulate new modalities for the protection and support of migrants (Rogaly & Rafique, 2003). This will not only increase the number of migrants through official channels but will also increase the propensity of migrants to remit. More generally, migration can be used as a direct tool for providing an opportunity to poor to pull themselves out of the poverty spiral and also help those who are left behind. It can provide an outlet for under-employed skills, reducing unemployment and increasing wages. Population mobility therefore should be built into poverty reduction policies as an opportunity and a benefit, not as a detriment.

Higher social security of migrants is likely to increase their propensity to remit. However, a substantial part of remittances depends on informal channels like physical carriage by trustworthy relatives, friends, or migrants themselves. Reasons for preferring informal channels for remittances include considerations of cost, speed, ease of making and receiving the transfer, coverage within the home country, and greater confidence and trust in the service provided. However, these channels are slow, cumbersome, costly, and not entirely risk free. The ability to remit money at one node of an existing national network and receiving the money at another node can make huge difference in improving the cost efficiency and ease of sending remittances. National networks like post offices, which are present throughout the country, in both origin and destination countries, can be used and special networks can be developed for remittances.

To encourage remittances, it is important not to decouple migration policies and development policies at the international level. Migration policies should be discussed as a part of development policies in multilateral forums. A key area worth exploring in this regard is the development potential of migrant diasporas[10]. Almost all developing countries, including very poor ones, have diasporas, where the members of diasporas are spread out in different countries, pursuing different occupations. The diasporas and its members can be important agents of development. The diasporas should be involved in discussions on encouragement and settlement of migrants; voluntary remittance schemes;

[10] A diaspora may be defined as people sharing a common origin (country, ethnic group, or area within a country) who are dispersed amongst diverse destinations outside their home country (Nyberg, *et al.*, 2002a)

sustainable return and possible investment of remittances and other development-oriented strategies with respect to migration and remittances.

Apart from deeper engagement with the diasporas, it is important for the governments of both origin and destination countries to facilitate easy and speedy flow of remittances. Special schemes can be devised for this purpose along with financial instruments targeted at overseas migrant workers. The International Development Committee (2003-04) has outlined a number of schemes offered by different developing countries to encourage remittances. Some of these schemes include, higher interest rates for foreign currency accounts like those offered by India, Pakistan and Bangladesh; "three plus one" matching funds scheme offered by the Zacatecas State Government in Mexico in which every dollar remitted by a Mexican migrant worker to their Home Town Association is matched with three more, one from the municipality, one from the state, and one from the federal government; and use of bonds issued with future flows of migrants' remittances used as collateral as done by Brazil.

Efforts to increase the volume of remittances should also be supported by efforts in channeling the remittances to more productive uses for sustainable reduction in poverty. Apart from providing food security to the households, if remittances are used for improving skills and productivity of the recipients they will have more sustainable impact on improvements of standard of living. Families receiving remittances should be allowed to use future remittances as collateral for procuring loans for education, house building or other activities like procuring fertilizers, machinery, etc for farms.

However, managing migration, particularly for poverty reduction, requires efforts at both bilateral as well as multilateral level. Effective and genuine partnerships must be established between migrant sending and migrant-receiving countries, and there has to be consensus at the multilateral level on the poverty-reducing impacts of remittances, which is now supported by empirical evidence.

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