

# Remittances, inequality and poverty reduction:

## Some tests for Latin America

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**Abstract:** Remittances are an important source of exchange earnings for many low income countries. Recent models emphasize the potential disincentive effects of intra-family transfers on work effort and investment (see Chami et. al. 2003)). This paper presents model in which remittances to poor households can increase growth, reduce inequality and increase school enrollments. Panel estimates for 62 countries support the some of these hypotheses. Remittances do appear to have greater impacts on poor and unequal nations, as the model predicts.

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## Wage Remittances as Poverty Antidote

Wages or other earnings sent back to their families by expatriate workers in OECD countries are an increasingly important source of foreign exchange earnings for many developing countries, including Mexico and a number of Central American countries. As with any cash transfer, however, remittances may have disincentive effects. Ralph Chami et al. (2003) for example argue wage remittance can dampen work effort and reduce growth in the receiving country. Surges of remittances may also have Dutch Disease effects on goods exports via a stronger real exchange rate. But as North-South transfers and compared to typical aid or private capital flows, remittances also have some attractive characteristics. Even though cross border transactions costs can be high, the bulk of transferred monies do reach many poor, mainly rural households. When working parents send money to spouses or to their parents or siblings remittances boost family income or be invested on behalf of the absent family member in education, housing or small businesses.<sup>1</sup>

This paper develops and tests a simple model of a migrant worker household in which remittances may (or may not) increase investment and growth in the receiving country. The potentially positive impact of remittances on growth and investment works via two channels. First remittances increase the return to education and wage employment abroad or at home, increasing investment in human capital by the family members left behind. Second, transfers can raise the income of poor rural households easing credit and wealth constraints that cause families to under invest in schooling and physical capital (and that may have motivated immigration by a family member as well). A clear sign of poverty-driven under-investment in schooling is child labor.<sup>2</sup> Recent literature on inequality and growth emphasizes the potential for poverty to constrained investment in human and physical capital to reduce

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<sup>1</sup> The risk and expense of immigration leads many workers to retain strong ties to their sending communities where in fact the majority of their immediate family may continue to live for many years.

<sup>2</sup> Defined and measured here by labor force participation rates by children aged 11-14, as reported by the World Bank and ILO.

overall investment and growth (see Aghion et. al. (1999) and Benabou(1996) for example). Typically, better access to credit or wealth redistribution (land reform) is the prescribed to boost investment by poor households (and raise overall growth). A key working hypothesis of this study is that remittances may perform the same role, boosting savings and investment in poor communities. Of course if remittances primarily go to wealthier households or if inequality and poverty are not severe in the sending country, then the moral hazard and Dutch Disease aspects emphasized by Ralph Chami et. al. (2003) may dominate. Indeed, a recent series of informal studies by the IMF (2005) show remittances do tend

The extended household structure of this model is in keeping with many ethnographic studies of immigrant sending communities in Mexico and Central America,<sup>3</sup> and with Bouhga-Hagbe's (2004) study of the impact of remittances on construction activity in Morocco. Under this scenario, remittances increase investment and growth over the longer term, both by leading to non-traded activities such as construction and education.

We test the various hypothesis of this model using panel data for 62 countries for which remittances account for more than one percent of GDP. Using various dynamic panel and IV techniques to deal with endogeneity problems, we find increased remittances boost savings, investment and school enrollment in the receiving countries, especially at the secondary levels. Using child labor force participation and standard inequality measures, we split our sample into high medium and low inequality and poverty economies. Remittances appear to have stronger impacts on both on human capital investment and on income growth in high inequality-child labor economies. This evidence has clear policy implications for policies encouraging labor migration or easing the transfer costs of remittances from OECD to poor economies.

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<sup>3</sup> Both Puri and Ritzema (1999) Waller-Meyers (1998) provide useful surveys of the literature on migrant worker and remittances to Latin America.

The next section of this paper discusses trends in remittances and the recent burst of literature studying both the determinants and the economics impacts of remittances, including a useful summary in Chapter 2 of April, IMF 2005 World Economic Outlook. The next sections present an inequality constrained growth model that captures both the potential income and substitution effects of increased employment opportunities abroad. As in the models of Benabou (1996) and Aghion et.al (1999) redistribution, in this case affected by remittances, can boost investment and growth among low income households, but has little or no effect on the investment by wealthier, unconstrained households. Using data on school enrollment, child labor force participation and data on incomes by decile (albeit for a small subset of countries) suggests remittances particularly benefit economies and groups characterized by high incidence of poverty and population growth. The final section of the paper discusses the robustness and policy implications of our results.

## **2. Remittances as Capital or Aid Inflows**

As shown in Figure 1 total remittances grew in real terms from about \$20 billion in 1975 to over \$60 billion in 2002 for the sixty countries we focus on in this study (see Appendix A for a list of these countries). Using a slightly broader definition and more countries, the IMF 2005 estimates remittances topped \$100 billion on constant terms by 2004. Sander (2004) claims remittances are a larger private capital flow to developing countries than total FDI. In many countries, remittances are often more than 5% of GDP and compare favorably with other sources, or in some cases all other sources of capital inflows (see the breakdown of capital flows, including aid, compared to remittances for the Dominican Republic and El Salvador shown in Figure 2 below). Gammeltoft (2002) claims remittances reported and unreported likely exceed foreign aid flows to poor countries in

2000. In other words, if foreign aid, FDI and other private capital flows can affect growth and macroeconomic developments in these economies, fluctuations in remittances certainly can as well.

The question obvious question is how remittances affect the poor and middle income countries that send more workers abroad? Ralph Chami et. al. (2003) argues remittances create moral hazard problems at home: family members abroad are more likely to send back funds when the situation at home deteriorates. Much like access to credit can reduce precautionary “rainy-day” savings, remittances flows may have a disincentive effect on work and savings in the sending community. Chami et. al (2003) claim remittances reduce economic growth in the sample of countries they examine. Bouhga-Hagbe’s (2004) on the other hand, finds remittances increase construction activity and hence investment and nontraded goods output in Morocco. The IMF (2005) presents a series of regressions, lacking detail and background study, showing remittances positively affect investment and school enrollment, but have not significant effect on economic growth.

The empirical evidence cited above and the model developed in the next section suggest that remittances can, but may not, reduce poverty in country receiving remittances from citizens living abroad. One way to establish the connections between poverty and remittances is to explore the various channels. If transfers are large enough and consciously reported in periodic household surveys, the income provided by transfers may reduce poverty directly, especially the severe \$1/day variety. However, these direct effects may over time be dominated by macroeconomic developments and longer term investment human and physical capital, after all remittances are inherently transitory: they only last as long the working living abroad is willing and able to send them back. Immigrant workers returning home, however, are likely to have enhanced skills and expectations that also raise the living standards of those around them.

That said, remittances may have disincentive effects at the household and macroeconomic levels (to the extent they lead to a strong real exchange rate). As remittances are inherently transitory, they represent something of a windfall for families that receive them. Family members may “wait for the next payment” to arrive rather undertake risky investments in education, job search or in forming their own business. Or some of the most capable may engineer their own trip abroad, leading to a brain drain. In many respects, the debate over the benefits or harm from remittances combines the classic debates over aid vs. trade with a long literature on the benefits of urban-rural and international migration.

In this sense, existing empirical studies of remittances impacts may appear to be contradictory, but in fact may be reflecting the range of positive and negative impacts associated with remittances and discussed above. Anecdotal evidence suggests many remittance senders plan to return to their home country communities or may have significant numbers of immediate family members in the home country. For example, one or both parents may leave their children, siblings and communities to work abroad for a period of time. However, since the bulk of the household unit remains in the home country, and since many migrant workers do plan to return, remittances may be used to fund investment in physical or human capital in the sending community. Some remittances may be altruistic gifts to family members back home, but others represent efforts to save and invest by household heads at home or abroad.

### **3. Remittances as transfers to poor households**

To see how remittances might reduce poverty, we need some poor families. As in Benabou (1996) it is convenient to start with randomly distributed wealth: household  $i$  receives its draw and ends with total share  $\varepsilon_i$  at date  $t$  such that  $\omega_i = \varepsilon_i Y_{t-1}$  where total

wealth's is proportional to last periods' total output  $Y_{t-1}$ . Given their draw, each household invests some fraction  $s$  in physical or human capital as well as devoting time  $u$  to education (as opposed to work). The underlying fundamentals determining  $s$  are spelled out in Benabou (1996) but as in Aghion and Williamson (1999) we ignore those details for now. Households who receive a bad draw at date  $t$  may be compelled to send a family member abroad at some expense and risk or put a child who otherwise might be in school to work.

With or without remittances households maximize,

$$U_t^i = \ln c_t^i + \rho \ln d_t^i \quad (3.1)$$

Given its endowment  $\omega_i = \varepsilon_i Y_{t-1}$  the household budget constraint for period  $t$  becomes,

$$c_t^i = (1-s)(\omega_t^i + \lambda w_t^i) - \xi_i u_t^i \quad (3.2)$$

where  $w^i$  are remittances earned abroad by household  $i$ , share  $\lambda$  of which are remitted to household and  $\xi$  is the cost of schooling (uniform for all families) times the number of family members in school,  $u$ . A number of authors have chosen to model  $\lambda$  as measure of the expatriate family member's altruism, family attachment, etc. However, in this model the worker is best considered the head of household who only derives utility from consumption at home  $c^i$  and sends the maximum practical share of earnings abroad home each month: that share is  $\lambda$ . The worker living abroad uses  $1-\lambda$  for living expenses, and sends the rest to his family in the home country. For consumption in period  $t+1$  the household can convert savings  $s$  into using a standard Solow type production technology,

$$y_t^i = (\hat{k}_t^i)^\alpha (A_t)^{1-\alpha} \quad (3.3)$$

where  $A_t$  is the economy-wide stock of knowledge and  $\hat{k}_t^i$  is capital per efficiency unit of labor,

$$\hat{k}_t^i = h_t^i k_t^i \text{ where } h_t^i = e^{\psi^* u} \quad (3.4)$$

and  $\psi^*$  is the Mincer return to education coefficient  $u$  is the time spent in obtaining skills, which

we assume is directly proportional to the number of family members in school at date  $t$ . Note that positive investment in education raises labor productivity and reduces the optimal capital stock per worker  $k^*$  for household  $i$ . For any given savings rates,  $h^i$  increases the productivity of investment but it is assumed that each household pays for  $h(u)$  with time not cash—hence the decision to invest in education is independent of the decision of how much to invest in physical capital  $k$ . We return to the decision regarding  $u$  in the next section.

Borrowing from Aghion and Williamson (1998) and Benabou (1996) we assume a particularly convenient “learning by doing” accumulation of economy wide knowledge,

$$A_t = \int_0^1 y_{t-1}^i di = y_{t-1} \quad (3.5)$$

where the continuum of overlapping-generations families is indexed over unit interval  $i \in [0,1]$ .

Assuming each household choose the optimal  $k_t$  the economy wide rate of growth can be obtained by simply summing up  $k^i$  at date  $t$ ,

$$g_t \equiv \ln \frac{y_t}{y_{t-1}} = \ln \int_0^1 \left( \frac{\hat{k}_t^i}{A_t} \right)^\alpha di \quad (3.6) \text{ or equivalently,}$$

$$g_t = \ln \frac{E_t(\hat{k}^\alpha)}{A_t^\alpha} \quad (3.7)$$

where  $E_t(k^\alpha)$  is the expected value of national output generated by each households investment in  $k$  and date  $t$ . As long as households have access to credit, each invests the same optimal  $k^*$  given their household labor productivity  $h$ . However, in the absence of perfect credit markets some households face liquidity constraints such that

$$k_t^i \leq \omega_t^i \leq \hat{k}_t^* \quad (3.8)$$

which implies some households are unable to invest up to the optimal  $k^*$ , reducing overall growth rate which in the presence of inequality and credit constraints becomes,



$$g_t = \alpha \ln(s) + \ln \int_0^1 \alpha (\varepsilon_t^i)^\alpha di \quad (3.9)$$

This is where remittances may both improve individual household welfare and raising the economy-wide rate of economic growth,

$$\hat{\omega}_t^i = \omega_t^i + \lambda w_t^i \quad (3.10)$$

where again Note that remittances only boost growth for households that find themselves constrained a lack of access to credit and a low endowment. For households that are not constrained by inequality (3.8), transfers will have no effect on investment in k. This model suggests remittances are more likely to increase growth and investment in poor countries and provided they reach poor households. In fact in this context remittances may be viewed as direct transfer, substituting for the perhaps less efficient tax base or foreign aid based redistribution schemes. This hypothesis is testable to the extent that remittances raise growth and investment (and savings rates) in economies that have significant inequality, poverty and where transfers do appear to reach the poor 20% or 40% of the population.

#### 4. Skill augmented remittances and economic growth

Immigrant workers often take low paid jobs, but given the range of opportunities open to immigrant workers over time it seems likely that more educated workers are likely to earn higher wages. Suppose the wages migrant workers earn abroad are a function of her skill level and the state of the economy abroad,  $w = f(h, \bar{w})$  where  $\bar{w}$  is the prevailing foreign wage rate which in turns depends on economic conditions in the host country, such that  $\bar{w} = f(g^*, \mu)$ , where  $g^*$  is the difference in the foreign growth rate and  $\mu$  some measure of capacity utilization. In the Harris-Todaro tradition, we can think of these factors as influencing the probability that the migrant worker will get a job. Again h is a function of u

or the number of children the household keeps in school over time (alternative years of schooling or the time the migrant takes to stay in school and learn new skills,  $h = e^{\psi^* u}$  with  $\psi^*$  being the Mincer returns education the migrant realizes abroad. If the returns to education are lower at home than abroad this adds to the incentive to migrate.

Hence the continuum of overlapping generation household chooses the number of members to keep in school  $u$  to maximize earnings abroad given the costs of schooling per member  $\xi$ . An increase in  $u$  affects growth in three ways: first is the direct increase in remittances; second a higher  $u$  permanently increases the rate of productivity growth as in Lucas (1988) and third, poverty constrained households end up saving and investing more in physical capital  $k$ . Apart from this last effect, these potentially positive growth effects should be observed regardless of the level of income of the sending household or the degree of inequality in the sending nation. These effects should also manifest themselves increased school enrollment, and though we have ignored household labor input, in reduced child labor participation.

## 5. Empirical Results

The above discussion provides several testable hypotheses regarding the economy with impact of remittances. However, the above discussion it also overlooks several other impacts associated with aid and other forms of capital inflows, including the Dutch Disease style appreciation of the real exchange rate which may dampen investment and productivity in non-traded goods and the disincentive effects of direct intra-household transfers noted by Ralph Chami et. al. (2003). We proceed with our empirical tests using a panel of 62 countries for which the World Bank and IMF report consistent remittances series back to 1974.

A useful first step in the analysis is to consider the current account identity,  $S - I = CA$  and since  $CA = FDI + \text{Portfolio flows} + \Delta\text{Reserves} + \text{Remittances} + \text{Net new Loans} + \text{Official Aid inflows}$ . Measuring all net capital inflows, including changes in remittances, as shares of GDP we regress changes in gross domestic savings and investment on the various sources of capital account financing (apart from changes in official reserves). This sort of analysis has been carried out by Gruben and McLeod (1998), Bosworth and Collins (1999) and most recently by Mody and Murshid (2002). Following Mody and Mushid we use three year averages to smooth out most business cycle and currency crisis effects. Starting in Table 3, we find remittances and loans increase savings consistent, which official aid is associated with a drop in savings and FDI and portfolio inflows have mildly positive effects.

Similar results hold for savings and per capita GDP growth, as shown in Table 1. Using a dynamic panel specification to allow lagged endogenous variables in each equation, we find lagged remittances are consistently associated with faster growth in the next three year interval. This is the case whether remittances are taken as a share of \$ppp GDP (to

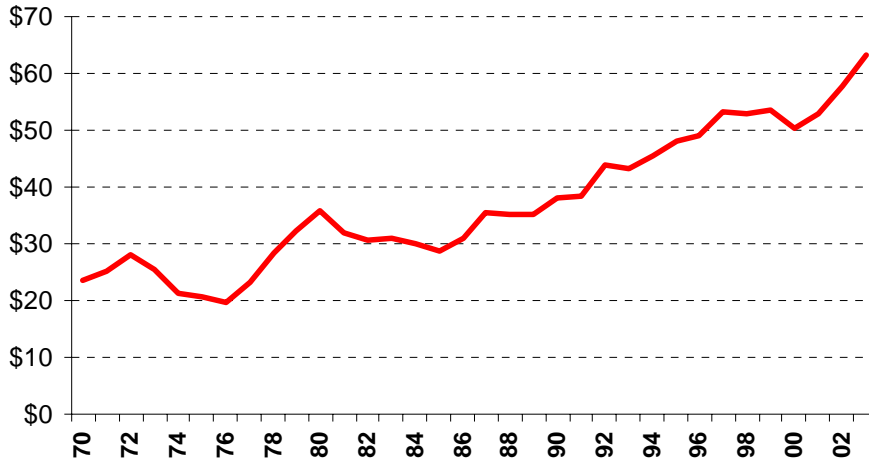
avoid spurious fluctuations in shares due to real exchange rate changes) or of GDP converted to dollars at market exchange rates. Among the various inflows of foreign exchange we tested, including FDI and portfolio flows, remittances have the largest impact on overall investment, with about 40-60% of each increase remittances as share of GDP leading directly to and increase in investment. This boost in investment also appears associated with higher economic growth. These results contradict the findings reported of IMF WEO Chapter 2 where remittances do not significantly affect GDP growth. There are several possible explanations for this difference in findings: including differences in estimation technique (dynamic panel techniques in this case, unknown estimation methods in the IMF case) and/or to variations in the definition of remittances (see use the narrower version published in WDI prior to this year). It is also somewhat surprising lagged FDI inflows tend to be associated with lower growth in the next three year period, this is something of a mystery and may well have to do with the motive for FDI in these countries (e.g.. mergers and acquisitions or investment in capital intensive mineral industries).

Finally, as shown in Table 2, remittances appear to boost both primary and secondary enrollment rates, again more consistently than other forms of capital inflows. Given an associated increase in primary enrollment rates, it is not surprising then that remittances are associated with a decline in child labor participation. Again the only surprising result is the apparent negative impact of FDI on primary school enrollment rates, though this effect is not always significant.

Table 4 regresses the growth rate of income for the bottom 40% of the population for a smaller subset of the population. We also split the same into two groups: countries with over 10% poverty rates using the World Bank's \$1/day standard. Table 4 compares the growth regression for the two groups, recalling our hypothesis that growth will be affected more the poorer the country is that receives the cash transfer. While the resulting growth

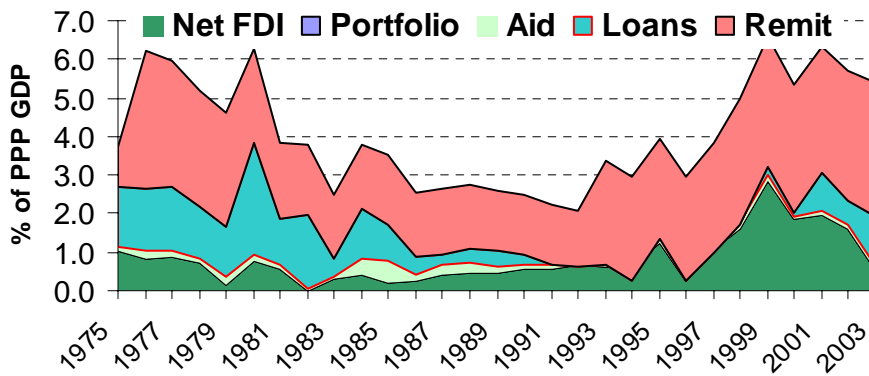
**Figure 1**

**Total World Remittances**  
(\$Billions of constant 2000 dollars)



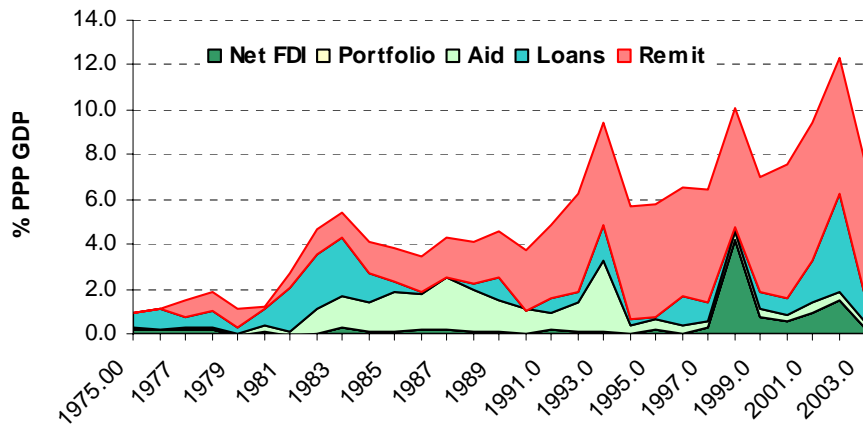
**Figure 2**

**Dominican Republic: Remittances vs. Capital Inflows**

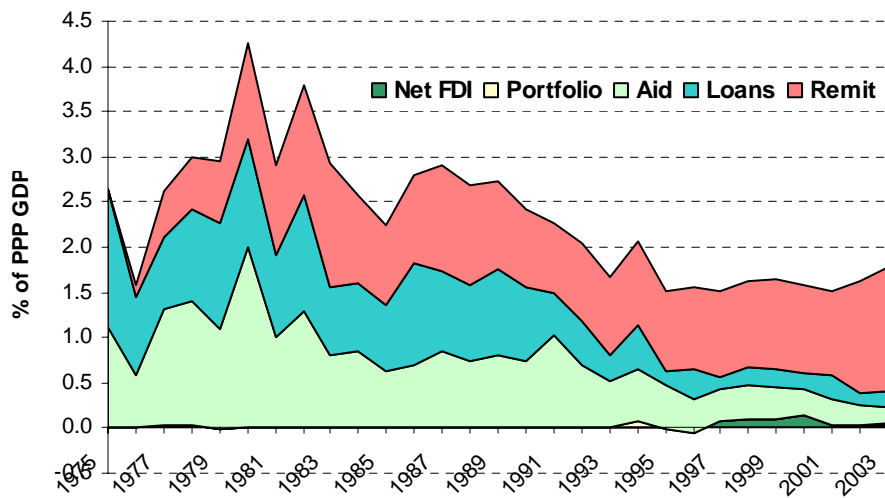


### Figure 3

#### El Salvador: Remittances vs. Capital Inflows

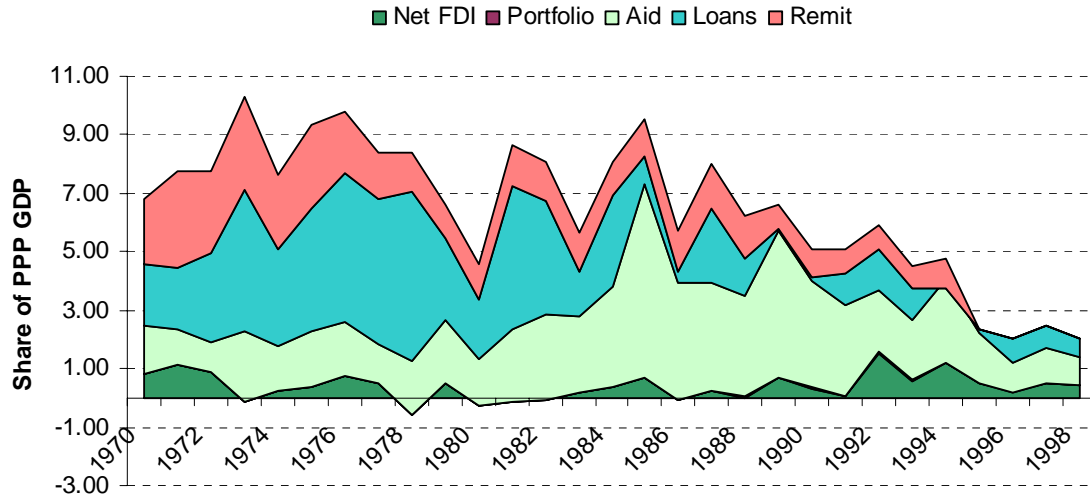


#### Bangladesh: Remittances and Capital Inflows



# Figure 3 (cont.)

## Senegal: Shares of Inflows



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**Table 1: Remittances and Per Capita Growth and Investment (3-yr averages 1974-2002)**

Dependent Variable: (standard errors)	1.1 Real per capita GDP growth	1.2 <sup>2/</sup> Real per capita GDP growth	1.3 <sup>2/</sup> Real per capita GDP growth	1.4 Investment GDP share	1.5 Investment GDP share	1.6 <sup>2/</sup> Investment GDP share
Lagged per Capita GDP growth (log change in real gdp)	<b>-0.07</b> (.03)*	<b>-1.77</b> (.04)	<b>0.03</b> (.03)			
Lagged Investment share (as a share of GDP)				<b>0.07</b> (.08)	<b>0.18</b> (.05)**	<b>0.14</b> (.04)**
Lagged Remittances (as a share of GDP)	<b>.61</b> (.07)**	<b>0.80</b> (.10)**	<b>0.32</b> (.033)**	<b>0.42</b> (.10)**	<b>0.60</b> (.18)**	<b>0.39</b> (.09)**
Lagged Office Aid Flows (as a share of GDP)	<b>-0.21</b> (.01)**	<b>1.35</b> (.07)*	<b>0.13</b> (.047)**	<b>0.29</b> (.12)**	<b>0.32</b> (.08)**	<b>0.10</b> (.05*
Lagged Net FDI flows (as a share of GDP)	<b>0.01</b> (.03)**	<b>0.22</b> (.25)	<b>-0.36</b> (.097)	<b>-0.32</b> (.25)	<b>-0.42</b> (.18)*	<b>-0.02</b> (.25)
Lagged Private Loan Inflows (as a share of GDP)	<b>-0.57</b> (.03)**	<b>0.94</b> (.15)		<b>1.1</b> (.21)**		<b>0.3</b> (.11)*
Lagged Portfolio Flows (as a share of GDP)	<b>-1.91</b> (.03)**	<b>1.36</b> (1.4)		<b>1.2</b> (3.8)		<b>-0.4</b> (1.87)
Number of Observations	217	238	239	215	214	230
Estimation Method <sup>3/</sup>	Panel GMM	Panel GMM	Panel GMM	Panel GMM	Panel GMM	Panel GMM
Sargan Test (P-value)	0.24	0.55	0.59	0.6	0.85	0.4
S.E. of regression	3.4	3.6	3.5	4.4	4.2	4.2
J-statistic	33.7	27.3	30.4	28.5	24.8	30.2

Notes: \*\* significant at the 1% level \*Significant at the 5% level

2/ All the values in this column are computed as a percent of GDP converted at market (not PPP) exchanges rates.

3/ Dynamic panel estimator with fixed effects (differences) with Arellano and Bond (1991) n-step GMM weights.

**Table 2: Remittances Impact Child Labor and School Enrollment (3-yr averages 1974-2002)**

<b>Dependent Variable:</b> (standard errors)	<b>2.1</b> <b>Child Labor</b> <b>Participation</b>	<b>2.2</b> <b>Child Labor</b> <b>Participation</b>	<b>2.3</b> <sup>2/</sup> <b>Child Labor</b> <b>Participation</b>	<b>2.4</b> <b>Primary</b> <b>Enrollment</b>	<b>2.5</b> <b>Primary</b> <b>Enrollment</b>	<b>2.6</b> <sup>2/</sup> <b>Primary</b> <b>Enrollment</b>
Lagged Labor Force Participation (as a % of pop. age 11-14)	<b>0.87</b> (.02)**	<b>0.87</b> (.021)**	<b>0.84</b> (.023)**			
Lagged Primary Enrollment (gross enroll as a % of age cohort)				<b>0.56</b> (.10)**	<b>.34</b> (.11)**	<b>.34</b> (.043)**
Lagged Remittances (as a share of GDP)	<b>-0.05</b> (.013)**	<b>-0.045</b> (.001)**	<b>-0.045</b> (.001)**	<b>1.69</b> (.060)*	<b>2.70</b> (1.02)**	<b>0.21</b> (.15)
Lagged Office Aid Flows (as a share of GDP)	<b>-0.03</b> (.01)**	<b>0.01</b> (.004)*	<b>0.00</b> (.004)*	<b>0.04</b> (1.25)	<b>0.24</b> (1.72)	<b>-0.24</b> (.121)
Lagged Net FDI flows (as a share of GDP)	<b>0.11</b> (.03)**	<b>0.04</b> (.02)*	<b>0.02</b> (.02)*	<b>-1.51</b> (.48)*	<b>-0.93</b> (.57)*	<b>-0.98</b> (.21)**
Lagged Private Loan Inflows (as a share of GDP)		<b>0.0040</b> (.008)	<b>-0.0003</b> (.004)		<b>-4.3</b> (.91)**	
Lagged Portfolio Flows (as a share of GDP)		<b>-0.085</b> (.05)	<b>-0.078</b> (.09)		<b>5.0</b> (8.2)	
Number of Observations	223	222	246	130	130	138
Estimation Method <sup>3/</sup>	Panel GMM	Panel GMM	Panel GMM	Panel GMM	Panel GMM	Panel GMM
Sargan Test (P-value)	0.53	0.61	0.40	0.04	0.07	0.17
S.E. of regression	0.37	0.37	0.39	7.2	7.6	6.9
J-statistic	31.7	28.2	30.4	29.6	25.2	26.8

Notes: \*\* significant at the 1% level \*Significant at the 5% level

2/ All the values in this column are computed as a percent of GDP converted at market (not PPP) exchanges rates.

3/ Dynamic panel estimator with fixed effects (differences) with Arellano and Bond (1991) n-step GMM weights.

**Table A-1: Remittances as percent of PPP GDP, 1994-2002 3 year averages**

	1994-96	1997-99	2000-02		1994-96	1997-99	2000-02
Albania	4.9	4.0	4.7	Cambodia	0.1	0.3	0.4
Argentina	0.0	0.0	NA	St. Kitts and Nevis	NA	NA	NA
Azerbaijan	NA	0.3	0.4	Lebanon	16.6	NA	4.5
Benin	2.1	1.5	1.2	St. Lucia	NA	NA	NA
Burkina Faso	1.1	NA	0.4	Sri Lanka	1.8	1.9	1.8
Bangladesh	0.9	1.0	1.0	Morocco	2.6	2.2	2.5
Bosnia and Herzegovina	NA	5.7	3.4	Madagascar	0.1	NA	NA
Belize	1.4	1.8	1.2	Mexico	0.6	0.7	0.9
Bolivia	0.0	0.4	0.5	Macedonia, FYR	0.4	0.6	0.6
Brazil	0.2	0.1	0.1	Mali	1.9	1.2	0.8
Barbados	1.4	1.7	2.2	Myanmar	NA		
China	0.0	0.0	0.0	Mongolia	NA	0.2	0.8
Colombia	0.4	0.4	0.7	Niger	0.1	NA	NA
Comoros	1.9	NA	NA	Nigeria	0.9	1.7	NA
Cape Verde	7.2	4.4	3.6	Nicaragua	0.8	2.1	2.6
Costa Rica	0.5	0.4	0.5	Nepal	0.2	0.3	0.4
Dominica	NA	NA	NA	Pakistan	0.9	0.6	0.7
Dominican Republic	2.7	3.2	3.3	Peru	0.6	0.6	0.6
Algeria	NA	NA	NA	Philippines	0.2	0.2	0.0
Ecuador	1.2	2.2	3.1	Paraguay	0.7	0.6	0.5
Egypt, Arab Rep.	2.2	1.8	1.2	Sudan	0.6	1.3	1.3
Georgia	NA	1.5	0.7	Senegal	0.9	0.9	NA
Guatemala	1.1	1.2	1.9	El Salvador	5.0	5.1	6.1
Guyana	0.6	0.6	1.0	Togo	0.3	0.1	0.6
Honduras	0.9	1.6	3.2	Tonga	NA	NA	7.9
Croatia	1.7	1.4	1.4	Trinidad and Tobago	0.4	0.5	0.3
Haiti	NA	NA	NA	Tunisia	1.7	1.4	1.4
India	0.4	0.5	0.3	Turkey	1.1	1.3	0.7
Jamaica	7.0	7.7	9.5	Vanuatu	1.2	1.3	2.2
Jordan	8.9	9.3	8.7	Samoa	6.4	6.0	NA
Kyrgyz Republic	0.0	0.0	0.4	Yemen, Rep.	11.4	10.2	8.4

Source: World Bank WDI Online, PWT 6.0 and author's calculations.

