

Are Remittances More Effective Than Aid To Improve Child Health?

An Empirical Assessment using Inter and Intra-Country Data

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Motivations (1)

- Poverty reduction is increasingly put forward as the main objective of official development assistance (MDGs by 2015)
- MDGs call for a substantial increase in the provision of basic services to the population of the developing world that aid alone cannot accomplish → Need to find alternative sources of financing
- At the same time, migrants' remittances as a private source of financing have been on the rise

..... Could remittances substitute for aid?

Motivations (2)

- Huge knowledge gap: little is known about the respective effectiveness of aid and remittances in alleviating poverty
- Aid literature mainly focused on the aid-growth nexus;
- Very few papers on the macroeconomic impact of remittances;
- Almost no paper analyzing to what extent aid and remittances may substitute in terms of external flows, except Chauvet and Mesplé-Somps (2007)

Objectives (1)

- What is the respective impact of health aid and remittances on child health outcomes in recipient countries?
- What is the net effect of migration when the brain drain of health workers is accounted for?
- What is the effective impact of aid and remittances on intra-country child health disparities?

Objectives (2)

- Why choosing child health indicators as outcomes?
 - Comparable cross-country data on monetary poverty over time are extremely scarce;
 - Child health figures prominently in the list of MDGs
→ increasing share of official aid to the health sector.
BUT very few empirical evidence on the effectiveness of aid flows on health outcomes in recipient countries;
 - Evidence of successful health interventions from the donors' or the migrants' side at the micro-level. Do they translate into improved health outcomes at the macro-level?

Literature Review (1)

Poverty and Inequality Impact of Aid

= Standard cross-country growth regression approaches in which growth as the dependent variable is replaced by an indicator of welfare or poverty.

No clear conclusions:

- Some papers find no direct impact of aid on HDI [see, e.g. Boone, 1996] while other ones find a significant impact;
- Other papers find an indirect impact of aid on HDI through higher levels of pro-poor spending; [Mosley, Hudson and Verschoor (2004); Gomanee, Girma and Morrissey (2005)]

Literature Review (2)

- Last, other papers find that particular types of aid among which health aid are effective in improving HDI
[see, *e.g.*, Masud and Yontcheva, 2005; Dreher, Nunnenkamp and Thiele, 2006; Michaelowa and Weber, 2007; Mishra and Newhouse, 2007]

Literature Review (3)

Poverty and Inequality Impact of Remittances

Literature even scarcer:

- 4 papers investigating the poverty impact of remittances

[Adams and Page, 2005; World Economic Outlook, 2005; Gupta, Patillo and Wagh, 2007; Acosta and others, 2008].

- No paper investigating the impact of remittances on HDI at a macroeconomic level.

Empirical Strategy (1)

- In this paper, we assess the impact of health aid and remittances on child health outcomes
- Our “baseline model” is of the following form:

$$\text{LnHealth}_{i,t} = \alpha_i + \beta \text{Ln}X_{i,(t-1,t-4)} + \delta \text{LnRemittances}_{i,(t-1,t-4)} + \theta \text{LnHealth aid}_{i,(t-1,t-4)} + \varepsilon_{i,t}$$

Under-five or infant mortality rate (in logs)

Other relevant socioeconomic variables

Current transfers by migrants in per capita constant terms

Aid commitments to the health sector in per capita constant terms

Empirical Strategy (2)

- Our baseline model is estimated on a panel of 109 developing countries, among which 38 African countries, from 1987 to 2004;
- All the right-hand side variables are averaged over three years from $t-1$ to $t-4$ and are measured in logarithm;
- We control for unobservable heterogeneity with country fixed effects;
- We instrument health aid and workers' remittances with variables that capture historical and cultural relationships between developing countries and donor/destination countries, M2/GDP, Health aid lagged countries (other instrumented variable: income per capita)

Results (1)

	Child mortality			Infant mortality		
	OLS (1)	Within (2)	2SLS (3)	OLS (4)	Within (5)	2SLS (6)
GDP per capita (a)	-0.553 (6.64)***	-0.263 (3.03)***	-0.595 (2.39)**	-0.482 (6.49)***	-0.218 (2.78)***	-0.500 (2.26)**
Number of physicians per 1,000	-0.157 (3.93)***	-0.032 (0.82)	0.048 (0.89)	-0.107 (2.88)***	-0.022 (0.62)	0.050 (1.04)
Female educational attainment	-0.156 (1.97)*	0.034 (0.61)	-0.009 (0.09)	-0.151 (2.15)**	0.049 (0.95)	0.004 (0.05)
Dummy for missing education var.	-0.181 (1.82)*	0.008 (0.15)	-0.217 (1.28)	-0.170 (2.08)**	0.038 (0.81)	-0.168 (1.08)
Remittances per capita (a)	-0.054 (2.37)**	-0.031 (2.37)**	-0.122 (2.97)***	-0.045 (2.16)**	-0.023 (2.09)**	-0.104 (2.76)***
Health aid per capita (a)	-0.012 (0.60)	-0.012 (1.26)	-0.008 (0.31)	-0.009 (0.44)	-0.011 (1.29)	-0.000 (0.01)
Year = 1995	-0.058 (1.74)*	-0.102 (4.07)***	0.068 (1.29)	-0.048 (1.64)	-0.094 (4.16)***	0.081 (1.74)*
Year = 2000	-0.088 (2.14)**	-0.198 (6.92)***	0.032 (1.27)	-0.085 (2.27)**	-0.189 (7.34)***	0.037 (1.68)*
Year = 2004	-0.139 (2.94)***	-0.274 (7.98)***		-0.139 (3.24)***	-0.265 (8.68)***	
Constant	8.704 (13.88)***	6.360 (9.30)***		7.872 (13.93)***	5.669 (9.19)***	
Fixed effects	No	Yes	Yes	No	Yes	Yes
Observations	358	358	237	358	358	237

Results (2)

Allowing for non-linearities in the health-aid relationship

Dependent variable	Child mortality	Infant mortality
2SLS estimations	(1)	(2)
GDP per capita (a)	-0.355 (1.41)	-0.264 (1.16)
Number of physicians per 1,000	0.023 (0.40)	0.026 (0.49)
Female educational attainment	-0.063 (0.53)	-0.050 (0.45)
Dummy for missing education variable	-0.305 (1.39)	-0.255 (1.26)
Remittances per capita (a)	-0.115 (2.72)***	-0.097 (2.46)**
Health aid per capita (a)	-0.839 (1.87)*	-0.815 (1.99)**
Health aid per capita x Income per capita (a)	0.100 (1.85)*	0.098 (1.98)**
Year = 1995	0.071 (1.24)	0.084 (1.62)
Year = 2000	0.044 (1.69)*	0.049 (2.09)**
Fixed effects	Yes	Yes
Observations	237	237

Results (3)

Accounting for the medical brain drain

Dependent variable	Child mortality	Infant mortality
2SLS estimations	(1)	(2)
GDP per capita (a)	-0.486 (1.77)*	-0.389 (1.56)
Number of physicians per 1,000	0.379 (2.50)**	0.365 (2.67)***
Female educational attainment	-0.205 (0.99)	-0.185 (0.98)
Dummy for missing education variable	-0.536 (1.49)	-0.476 (1.45)
Remittances per capita (a)	-0.134 (2.54)**	-0.114 (2.35)**
Health aid per capita (a)	-1.067 (2.02)**	-1.033 (2.14)**
Health aid per capita x PIB per capita (a)	0.125 (1.99)**	0.122 (2.12)**
Medical brain drain (a)	0.504 (2.61)***	0.481 (2.75)***
Year = 1995	0.093 (1.33)	0.105 (1.64)
Year = 2000	0.086 (2.39)**	0.089 (2.75)***
Fixed effects	Yes	Yes
Observations	237	237

Results (4)

- Summary of results:

- Both remittances and health aid significantly improve child health outcomes;
- The impact of health aid is non-linear, though, suggesting that aid to the health sector is more effective in the poorest countries (with GDP per capita PPP < \$4,100);
- Medical brain drain, as measured by the expatriation rate of physicians, is found to have a harmful impact on health outcomes (Net impact of migration on HDI?);

Results (5)

- Using intra-country data (with health outcomes measured by income quintile), we find that:
 - Remittances are more beneficial for children belonging to the richest households. This result is in line with other microeconomic evidence which suggests that remittances may increase within-country inequality;
 - Health aid is no more significant.

Conclusion

- « Potential » gainers and losers from health aid and migration-cum-remittances

Gainers:

- Those countries with GDP per capita lower than \$4,100 in PPP (30 African countries in our sample);
- Those countries with high remittances per capita and low medical brain drain;

Losers: the others