




Remittances: An Automatic Output Stabilizer?

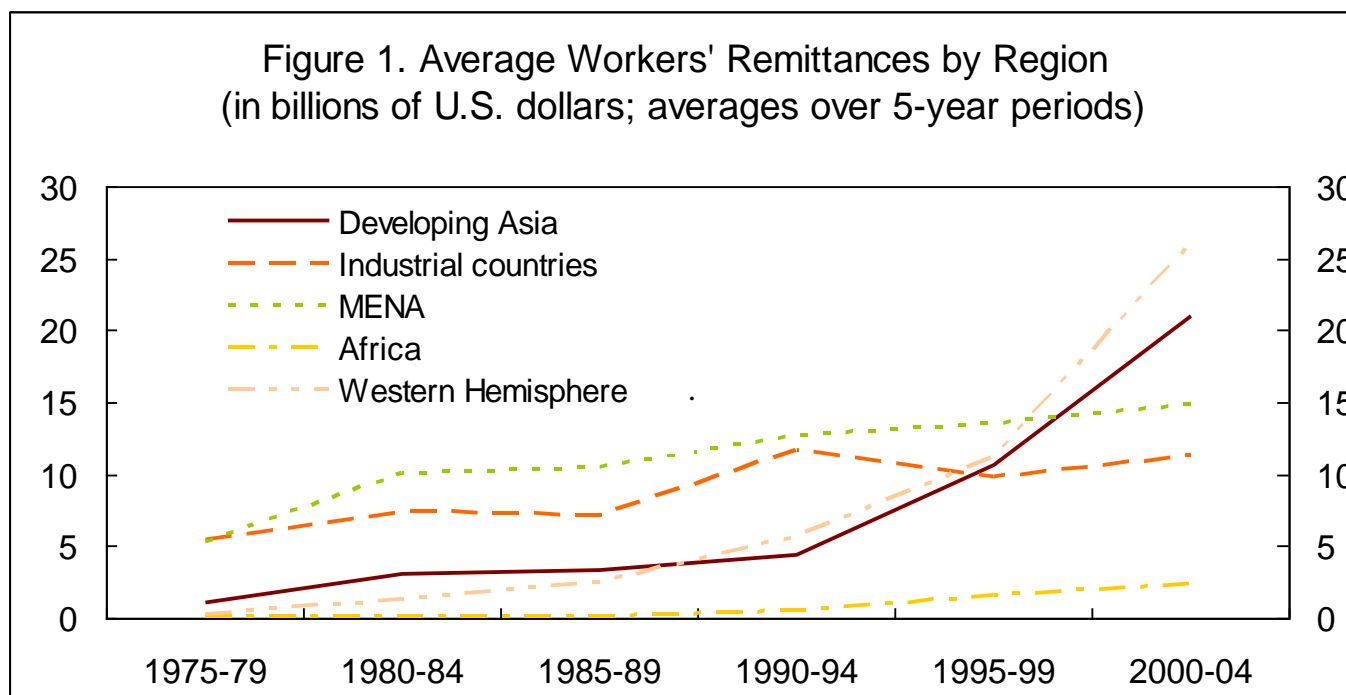
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- Remittance flows to many developing countries have slowed sharply amid the global financial crisis and, according to a World Bank report, are projected to decline by 5 to 8 percent in 2009

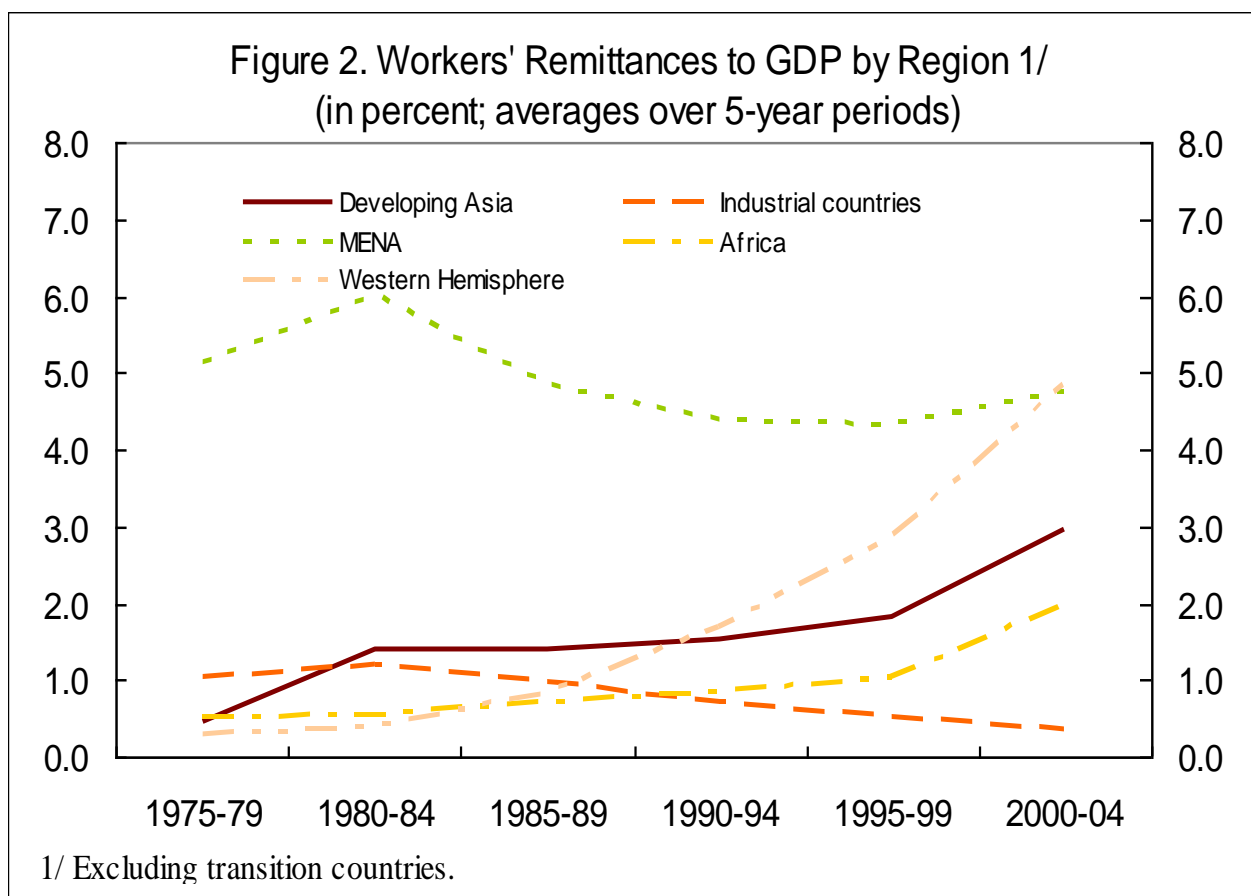
Question

- What impact do remittances have on output growth volatility?
 - High output volatility has adverse effects on economic growth, welfare and poverty, particularly in the context of developing countries (Ramey and Ramey, 1995)
- Hardly any previous empirical evidence

Remittances: large and on the rise...

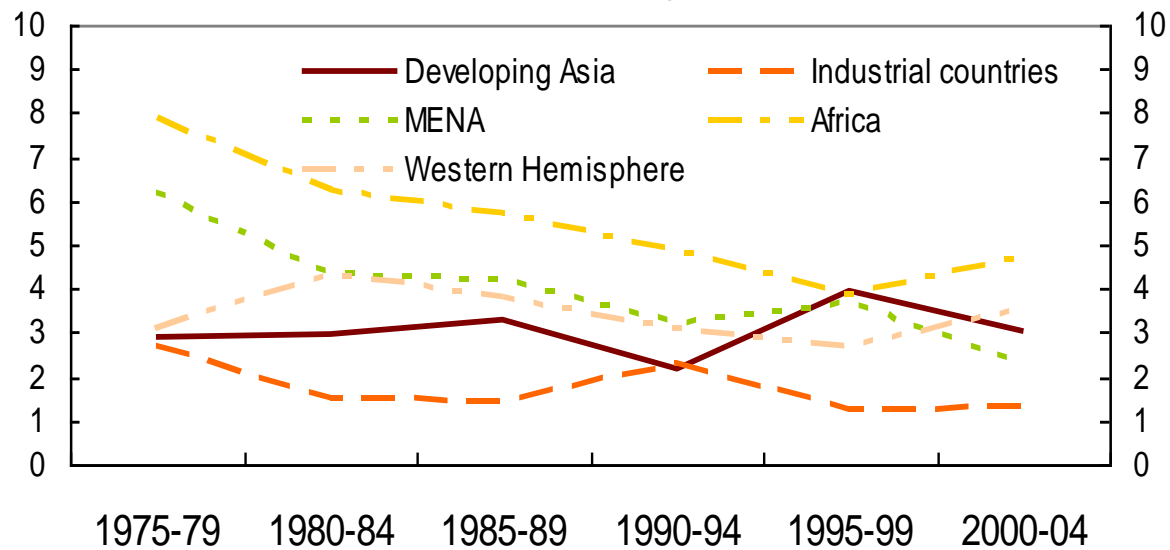


Remittances in percent of GDP



Remittances stabilizing output growth?

Figure 3. Output volatility by Region 1/
(std. dev. of per capita output growth over 5-year periods;
mean for each group)



1/ Excluding transition countries.

The theoretical effects of remittance inflows on macroeconomic volatility are ambiguous...

- Remittances have been a remarkably stable source of income, relative to other private and public flows
- They seem to be compensatory in nature, rising when the home country's economy suffers a downturn
- Caveats
 - They can increase economic volatility if remittances cause households labor supply to become more procyclical (Chami, Cosimano, and Gapen, 2006)
 - Reliance on remittance inflows may have an adverse effect on the quality of governance (Abdih and others, 2008) making recipient countries more susceptible to being destabilized by economic shocks
- Possible nonlinear effect?

Methodology

- Sample: 70 countries, including 16 advanced economies and 54 developing countries
- Objective: to determine whether the ratio of remittance receipts to GDP helps to explain the volatility of output growth after controlling for a large number of variables that have been cited in the literature as potential determinants of such volatility
- Empirical technique: cross-section OLS, instrumental variables, and Generalized Method of Moments (GMM) dynamic panel estimations

Regression specifications

- Dependent variable: output growth volatility
- Explanatory variables
 - Workers remittances to GDP ratio
 - Control variables, including relative income, relative income squared, terms of trade volatility, trade openness, financial openness, government consumption, institutional quality, an indicator of financial sector development, a trade concentration ratio, and an indicator of the commodity composition of exports
 - Explanatory variables are averages over the 1970-2004 period in the cross-section regressions, and over five-year periods in the panel regressions for the 1980-2004 period

Dealing with endogeneity

■ Instruments used

- Ratio of remittances to GDP of all other recipient countries
- GMM system estimator (Blundell and Bond, 1998) which uses lagged levels of the series as instruments for the difference regressions and suitably lagged first differences of the variables as instruments for the regressions in levels

Ordinary Least Squares, Instrumental Variables and GMM-SYS Regression Results
Dependent variable is: Volatility of Output Growth

	OLS	IV	GMM-SYS
Workers remittances to GDP	-0.16* (0.10)	-0.17* (0.10)	-0.17** (0.08)
Primary commodity export composition	0.016* (0.01)	0.02* (0.01)	
Terms of trade volatility	0.09* (0.05)	0.09** (0.05)	0.09** (0.03)
Trade openness to GDP	0.012* (0.01)	0.01** (0.01)	0.01 (0.01)
Government consumption to GDP	0.066* (0.04)	0.07* (0.04)	0.03* (0.02)
Government consumption to GDP*industrial country dummy	-0.064** (0.03)	-0.06 * (0.03)	-0.08** (0.02)
Constant	1.19 (1.06)	1.23 (1.06)	2.31** (0.81)
R-squared	0.37	0.38	
Number of observations	70	70	330
Hansen test			5.21
A-B test for AR(1)			-3.26**
A-B test for AR(2)			-1.12

Notes: Output growth volatility is the standard deviation of real GDP per capita growth over 1970-2004 in OLS and IV regressions and over five-year periods from 1980-2004 in GMM-SYS. Robust standard errors are in parentheses.

See Data appendix for variable definitions. A * denotes significance at the 10 percent level and ** denotes significance at the 5 percent level.

IV instruments the remittance to GDP ratio using the remittances to GDP ratio in the rest of the world (see text for explanation)

Table 7. Nonlinear GMM System Estimation

Dependent variable is: Volatility of Output Growth, 1980-2004 (5-year period observations)

Workers remittances to GDP(wrgdp)	-1.43**
*dummy=1 if wrgdp <=2%	(0.69)
Workers remittances to GDP (wrgdp) *	-0.19**
dummy=1 if wrgdp>2%	(0.09)
Terms of trade volatility	0.1**
	(0.03)
Trade openness to GDP	0.01
	(0.01)
Government consumption to GDP	0.03*
	(0.02)
Government consumption to GDP*industrial	-0.09**
country dummy	(0.02)
Constant	2.32**
	(0.89)
Diagnostic statistics	
# observations	330
# countries	70
Minimum # observations per country	2
Average # observations per country	4.7
Maximum # observations per country	5
Countries excluded	
Hansen test	12.18
A-B test for AR(1)	-3.34**
A-B test for AR(2)	-0.98

Notes: Output growth volatility is the standard deviation of real GDP per capita growth over five year periods. Robust standard errors are in parentheses. See Data appendix for variable definitions. A * denotes significance at the 10 percent level and ** denotes significance at the 5 percent level. Period dummies are included in the estimations.

Conclusions

- Remittance flows have contributed on average to reducing output growth volatility in remittance-receiving countries, and thereby represent an important channel through which they may affect growth and welfare in remittance-receiving countries
- Evidence on the threshold effects suggests that the stability-enhancing effects of remittances appear rather quickly, emphasizing the importance of strengthening macroeconomic resilience through other means in countries that are very large recipients of remittances (e.g. broad-based taxation of consumption, an efficient VAT)

Possible implications

- A slowdown in remittance flows will increase the volatility of output with adverse welfare effects
- Governments in remittance-dependent economies could raise spending on social insurance to offset the impact of weaker remittances. However, in the current economic environment they may not have “fiscal space”. And higher discretionary fiscal spending in LICs has been found to **raise** output volatility.