

Does Aid for Education Attract Foreign Investors? An Empirical Analysis for Latin America

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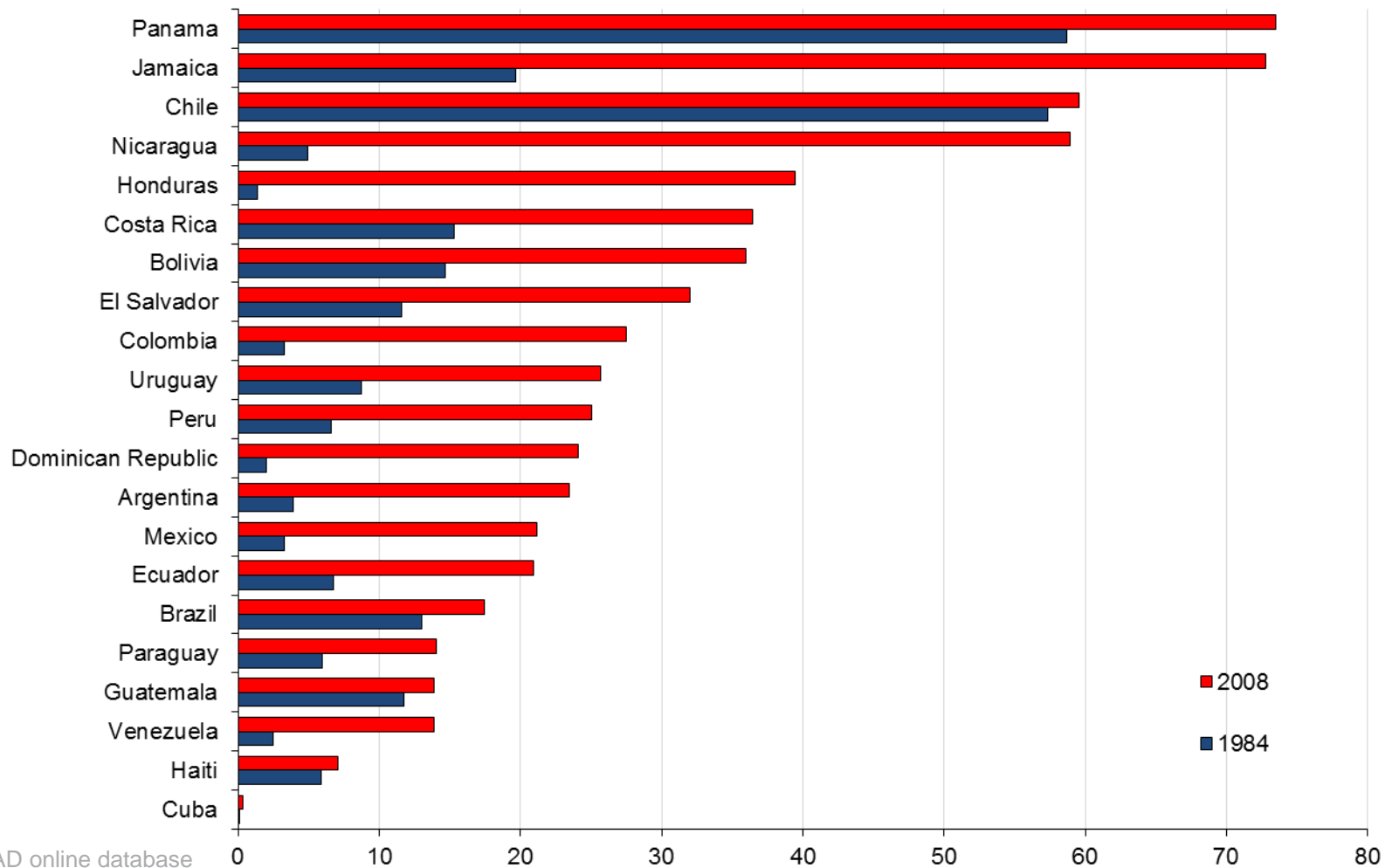
Overview

- Introduction
- Analytical Background and Related Empirical Evidence
- Econometric Methodology, Data and Results
- Summary and Conclusion

Generally, there appears to be a broad consensus that **FDI** inflows bring many **benefits to host countries**

But: FDI remains strongly concentrated in a few large and relatively advanced developing countries: the 20 top performers account for about 80 per cent of FDI stocks in all developing countries in 2008

FDI stocks in per cent of GDP, 21 Latin American sample countries, 1984 and 2008



Source: UNCTAD online database

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- **Central challenge:** Spread the benefits of FDI across all developing countries by creating the necessary domestic and international conditions
 - Can the international community support the diffusion of FDI-related benefits by easing access for host countries?

- One possibility: improve “the synergies between **FDI flows** and **ODA**” (OECD, 2002)
- German development policy: German **development aid** shall “motivate companies to make **more direct investments** in partner countries” (Beerfeltz, 2011)



well targeted foreign aid could remove critical impediments (e.g. lack of infrastructure, inadequate education system) to higher FDI inflows

Central hypothesis: Aid for education is an effective means to increase FDI flows to host countries where schooling and qualification can reasonably be considered inadequate from the viewpoint of foreign direct investors.

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Literature on the determinants of FDI

- Skilled workforce is important for foreign investors

Nunnenkamp and Spatz (2002)

Noorbakhsh et al. (2001)

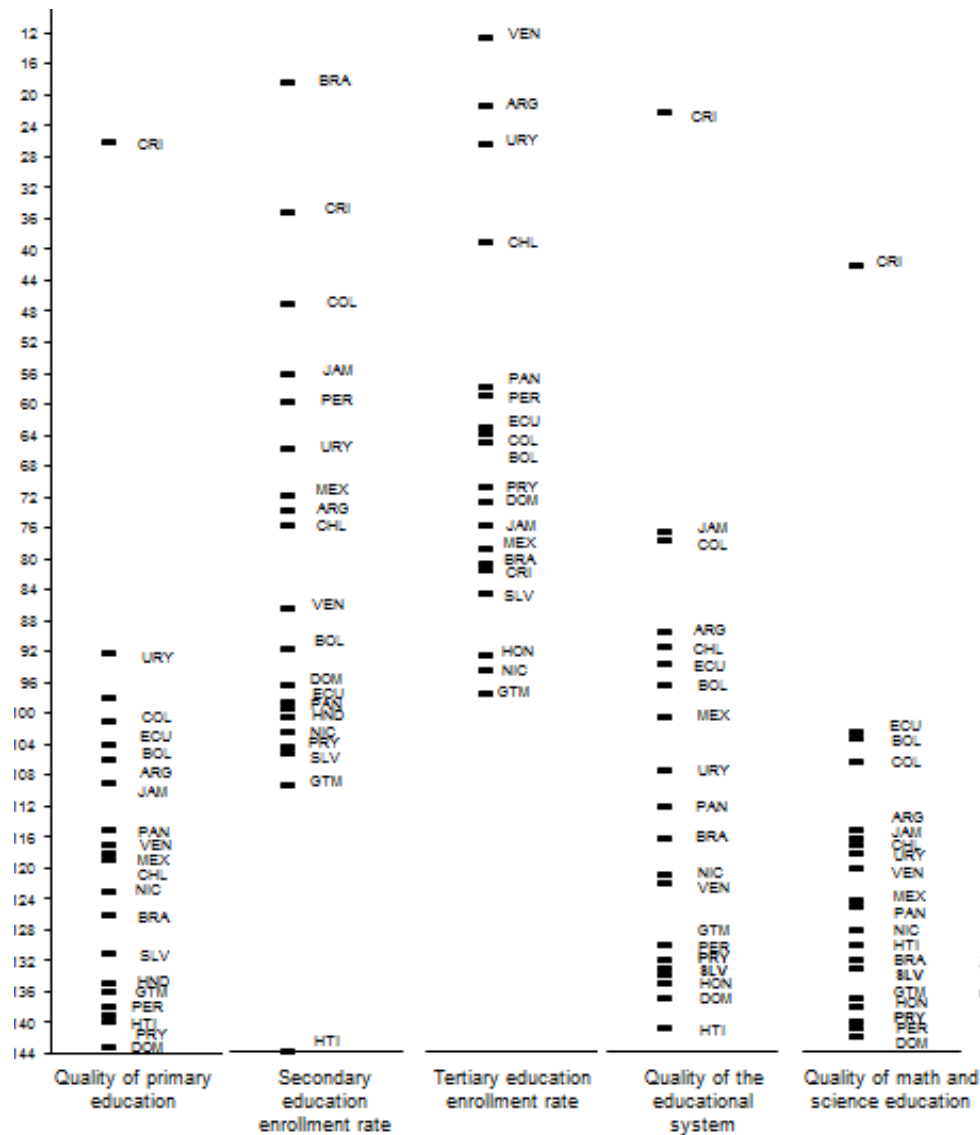
Aid effectiveness literature

- Aid may help improve educational outcomes

Michaelowa and Weber (2007)

Dreher et al. (2008)

Inadequate schooling and qualification in Latin America



Source: World Economic Forum, Global Competitiveness Report 2012-13

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Econometric specification

$$FDI_{it} = \beta_1 Aid_{it} + \sum_{m=1}^M \gamma_m X_{mit} + \alpha_i + \alpha_t + \varepsilon_{it}$$

$i = 1, \dots, N$ refers to countries, index $t = 1, \dots, T$ to time periods; X_{mit} vector of m time-varying control variables; α_i country-specific dummies; α_t period dummies

Controls (X_{mit}):

- GDP per capita (GDP^{pc})
- Trade-to-GDP ratio ($Trade$)
- Governance ($Governance$)
- Investment risk ($Investment\ risk$)

Data:

- World Bank, OECD, UNCTAD
- Controls: several sources

Baseline results

Dependent variable: FDI flows	
<i>Aidedu</i>	3.926** (3.02)
<i>Aidothet</i>	0.019 (0.47)
<i>Trade</i>	0.014 (0.86)
<i>GDP^{pc}</i>	3.914** (5.89)
<i>Governance</i>	-0.002* (-2.64)
<i>Investment risk</i>	0.006** (3.56)
Number of observations	82
Number of countries	21
Adj. R ²	0.66

Note: *t*-statistics (calculated with White-corrected standard errors) are in parenthesis. **, (*) indicate significance at the one- (five-) percent level. Coefficients for country and time fixed effects are not reported.

Alternative estimation methods

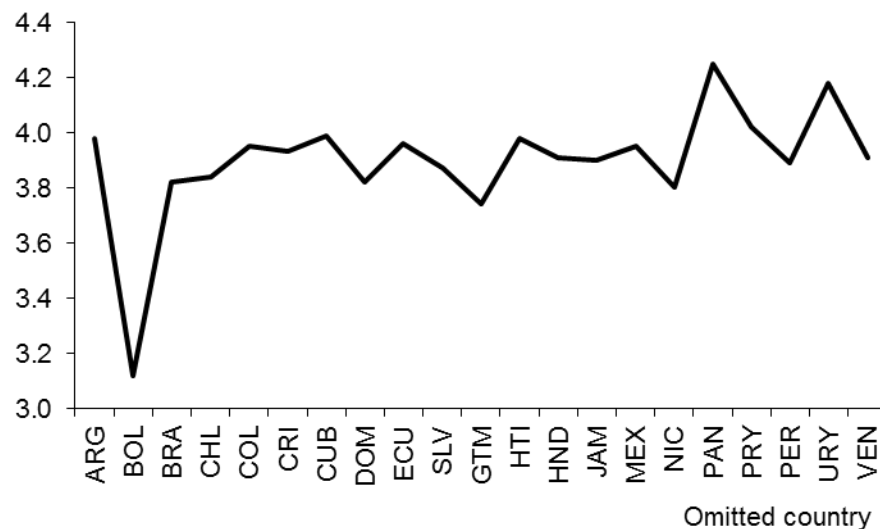
Dependent variable: FDI flows

	(1)	(2)
	2SLS	SYS-GMM
<i>Aidedu</i>	6.577** (2.79)	3.283** (4.35)
<i>Aidother</i>	0.044 (1.60)	-0.029 (1.20)
<i>Trade</i>	0.016 (1.26)	0.016* (2.04)
<i>GDP^{pc}</i>	5.143** (14.75)	4.147** (2.75)
<i>Governance</i>	-0.002** (3.46)	0.001 (1.36)
<i>Investment risk</i>	0.007** (4.50)	0.002 (1.33)
<i>FDI (lagged)</i>		0.326 (1.25)
Number of Observations	81	82
Number of countries	21	21
Adj. R ²	0.640	-
Number of Instruments	4	19
1st stage F-statistic (p-value)	0.00	-
Hansen J-statistic (p-value)	0.971	0.632
AR2-test (p-value)	-	0.687

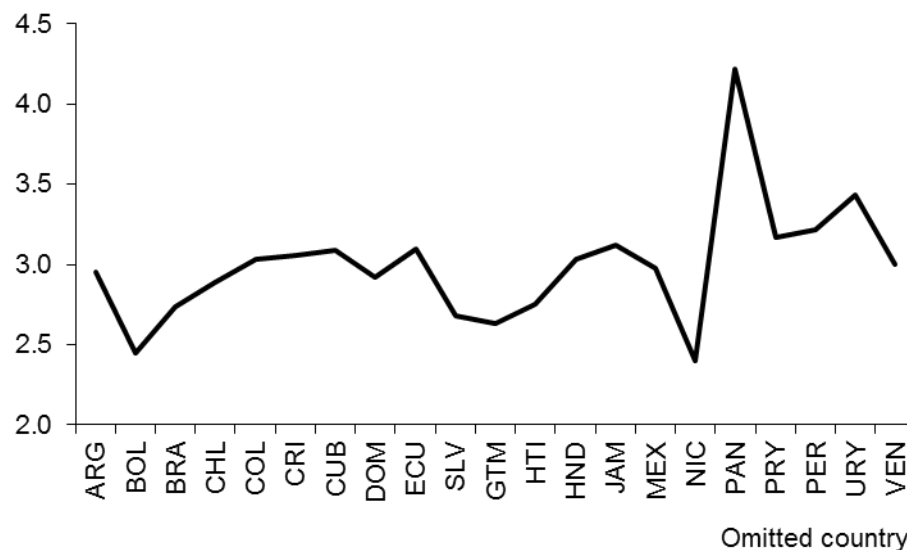
Note: *t*-statistics (calculated with White-corrected standard errors) are in parenthesis. **, (*) indicate significance at the one- (five-) percent level. Coefficients for country and time fixed effects are not reported. GMM Results are reported for two-step GMM estimator using the finite sample correction proposed by Windmeijer (2005).

Estimation with single country excluded from the sample

Coefficient on Aidedu



t-statistics of the coefficients on Aidedu



Estimates of the effect of aid to education on FDI using different samples

Dependent variable: FDI flows

	Coefficient on <i>Aidedu</i>	No. of countries in the sample	No. of observations
Excluding the Caribbean	3.948** (2.77)	17	68
Excluding Central America	4.294* (2.53)	14	54
Excluding the three countries with the highest GDP per capita	4.477** (3.77)	18	70
Excluding the three countries with the lowest GDP per capita	3.378** (3.18)	18	71
Excluding the three countries with the highest share of FDI in GDP	2.974* (2.37)	18	71
Excluding the three countries with the lowest share of FDI in GDP	4.211** (3.08)	18	71
Excluding the three countries with the highest share of aid in GDP	3.378** (3.18)	18	71
Excluding the three countries with the lowest share of aid in GDP	3.883* (2.69)	18	70

Note: *t*-statistics (calculated with White-corrected standard errors) are in parenthesis. **, (*) indicate significance at the one- (five-) percent level. Coefficients for country and time fixed effects are not reported.

Estimates using different measures of FDI, aid, and governance

	Alternative measures of FDI and aid		Alternative measures of governance	
	(1)	(2)	(3)	(4)
Dependent variable	FDI stocks in % of GDP	FDI (absolute)	FDI in % of GDP	FDI in % of GDP
Aid variable	Aid in % of GDP	Aid (absolute)	Aid in % of GDP	Aid in % of GDP
Governance variable	POLITY	POLITY	Civil liberties	Political rights
<i>Aidedu</i>	15.144*	140.467**	3.453*	3.430*
	(2.27)	(3.80)	(2.50)	(2.46)
<i>Aidother</i>	-0.389	-3.945	-0.006	-0.008
	(-1.13)	(-1.64)	(-0.16)	(-0.21)
<i>Trade</i>	0.087	136.256	0.007	0.006
	(1.59)	(0.10)	(0.51)	(0.49)
<i>GDP^{pc}</i>	13.108	1943060.817*	3.424**	3.443**
	(1.59)	(2.41)	(6.75)	(6.09)
<i>Governance</i>	-0.003	162.265	-0.001	-0.001
	(-0.58)	(0.79)	(-0.24)	(-0.49)
<i>Investment risk</i>	0.004	149.225	0.005**	0.005**
	(0.57)	(0.30)	(2.84)	(2.96)
No. of observations	81	82	82	82
Number of countries	21	21	21	21
Adj. R ²	0.82	0.76	0.64	0.65

Note: *t*-statistics (calculated with White-corrected standard errors) are in parenthesis. **, (*) indicate significance at the one- (five-) percent level. Coefficients for country and time fixed effects are not reported.

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Results

- Strong empirical evidence that aid for education is associated with higher net FDI inflows to developing countries in Latin America



Aid can be effective!

To follow

- Broader focus: explicitly **match FDI-related needs** and **sector-specific aid** in all developing countries

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Thank you for your attention!

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