

Vertical Aid Externalities

Evidence from the Case of PEPFAR

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November 5, 2012

Introduction

- ▶ Question: Does vertical foreign aid have negative spillover effects?
- ▶ Evidence from the case of PEPFAR on outcomes not related to HIV
- ▶ Finding: vertical aid has a small deleterious effect on non-HIV outcomes

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Outline

- ▶ Vertical aid and criticisms
- ▶ PEPFAR
- ▶ Data and model
- ▶ Key findings
- ▶ Implications, limitations, next steps

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- ▶ Focuses on a single development issue
- ▶ Shock and awe of foreign aid
- ▶ Examples: DDT (1960s), smallpox (1970s)
- ▶ However, vulnerable to capture (HIV “lobby”)

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Criticism: Potential Negative Spillovers

- ▶ Crowding out of cheaper interventions or programs
- ▶ Distortion of national priorities -> resource reallocation
- ▶ Brain drain: public sector to private sector (NGOs)

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- ▶ Per capita allocations roughly similar in focus countries

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Sample

- ▶ African focus countries vs. African non-focus countries with a generalized HIV epidemic
- ▶ Generalized epidemic: 1% prevalence rate or higher in 1997
- ▶ 36 countries over years 1998-2009

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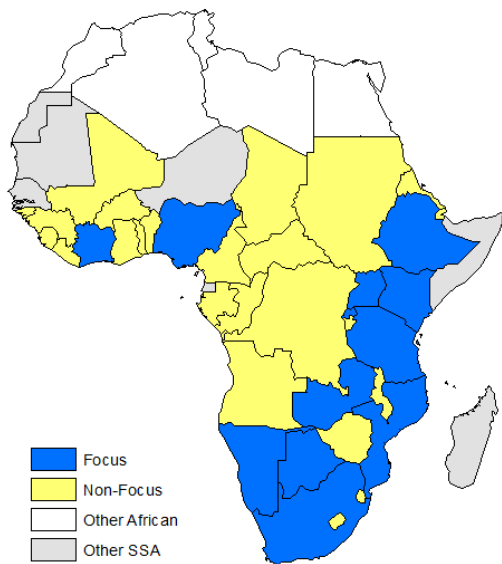
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- ▶ Country selection
 - ▶ Countries "severely affected" by HIV
 - ▶ Half of the world's HIV infections
 - ▶ Political and diplomatic considerations
 - ▶ Existing USAID presence
- ▶ NGO selection
 - ▶ Existing operations with proven track record
 - ▶ Capacity to scale up rapidly

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Dependent Variables

- ▶ Neonatal mortality rate: an indirect measure of the quality of the (state) health system
- ▶ Definition: number of deaths in the first month of life per 1,000 live births
- ▶ Data do not disaggregate deaths due to HIV/AIDS, but not problematic
 - ▶ Causes of death
 - ▶ Timing of death
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Covariates

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- ▶ Health aid per capita (excludes HIV aid)
- ▶ Government health expenditures per capita
- ▶ Polity
- ▶ Population
- ▶ Urbanization

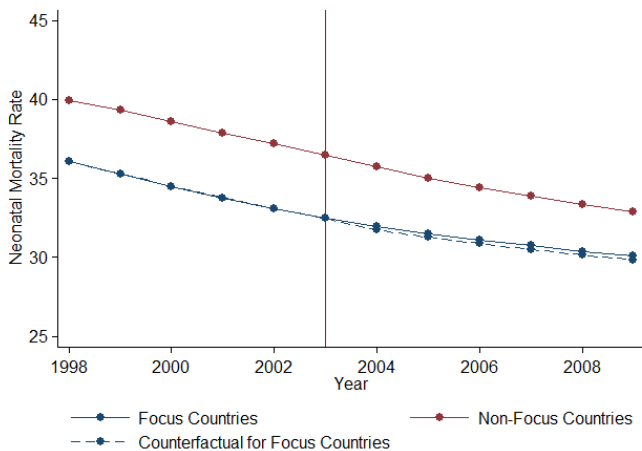
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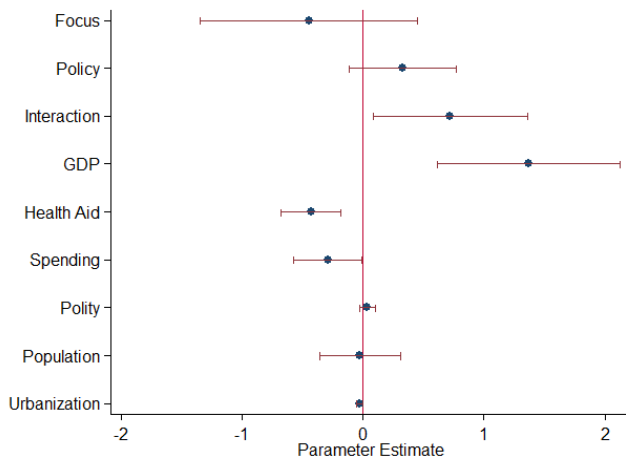
Model

$$y_{it} = \beta_0 + \beta_1(F_i) + \beta_2(P_t) + \beta_3(F_i * P_t) + X_{it} + \epsilon_{it}$$

Mortality Trends



Results



Key Findings

- ▶ Vertical aid may with a negative externality
- ▶ In case of PEPFAR: non-HIV-related health outcomes suffered
- ▶ Neonatal mortality rates improved less quickly in focus countries

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Limitations and Next Steps

- ▶ Limitations/Caveats
 - ▶ Can't distinguish between vertical aid and off-budget aid
 - ▶ Statistical evidence only applies to the first phase (2004-2009) of PEPFAR
 - ▶ Conclusions drawn from aggregate data
- ▶ Next steps
 - ▶ Individual-level data from DHS
 - ▶ How to test mechanisms?
 - ▶ Evidence from other vertical programs?

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Thank you!

Supplemental Slide List

- ▶ Summary Statistics: Dependent Variables
- ▶ Summary Statistics: Covariates
- ▶ HIV Prevalence Rates by Focus Country Status
- ▶ HIV Prevalence Rates by Country
- ▶ PEPFAR Statistics
- ▶ PEPFAR Funding by Country
- ▶ Per Capita PEPFAR Funding by Country
- ▶ Regression Table
- ▶ Robustness Checks

Summary Statistics: Dependent Variables

Table: Means and Standard Deviation for DVs in 2003

Dependent Variable	Focus	Non-Focus	Significant?
Neonatal mortality	-1.39 (2.65)	-1.70 (1.55)	No
Under-5 mortality	-1.73 (4.13)	-2.18 (2.01)	No
Age 1 to 5 mortality	-2.20 (5.93)	-2.82 (2.58)	No
Maternal mortality	-4.90 (2.58)	-2.83 (2.72)	Yes
Tuberculosis	82.67 (15.19)	78.42 (16.81)	No
DTP	72.92 (19.57)	67.64 (18.81)	No
Measles	71.75 (18.11)	65.17 (16.06)	No
Polio	75.17 (17.30)	66.72 (16.89)	No

Summary Statistics: Covariates

Table: Means and Standard Deviations for Covariates in 2003

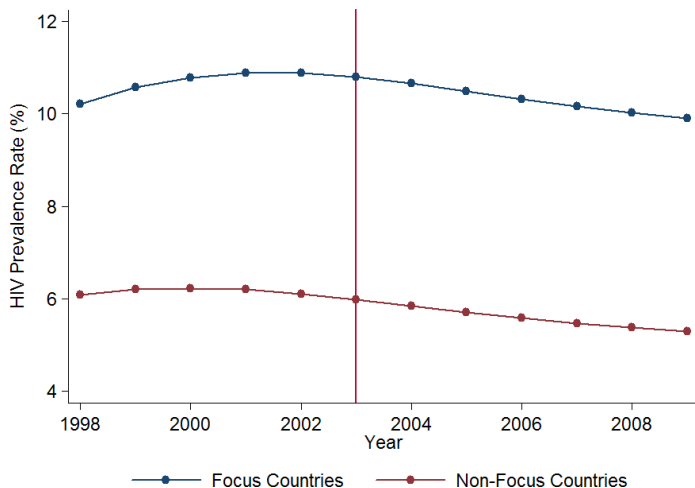
Control Variable	Focus	Non-Focus	Significant?
GDP	7.25 (0.96)	6.89 (0.85)	No
Health aid	1.68 (0.74)	1.24 (0.74)	No
Gov't health spending	4.40 (1.09)	3.98 (0.74)	No
Polity	3.17 (4.45)	-0.13 (4.64)	Yes
Population	16.74 (1.30)	15.64 (1.10)	Yes
Urbanization	32.66 (15.69)	36.87 (17.91)	No

Statistics on PEPFAR

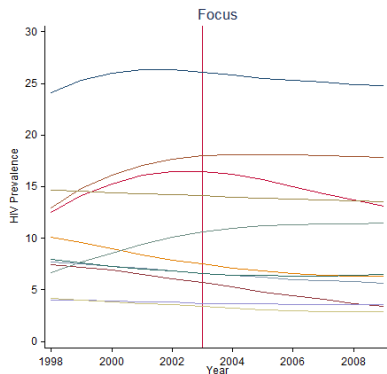
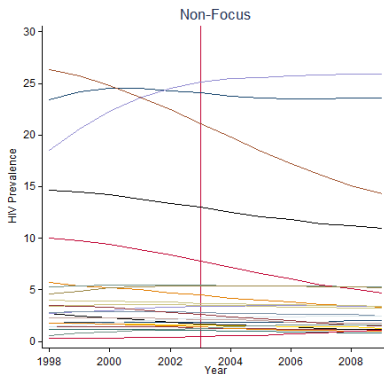
Table: Mean Annual Funding Levels for Focus Countries, 2004-2009

Country	Annual total	Annual per capita	Population
Botswana	\$65.89	\$34.35	1.9m
Cote d'Ivoire	\$73.60	\$3.70	20m
Ethiopia	\$199.50	\$2.46	79m
Kenya	\$318.33	\$8.52	36m
Mozambique	\$138.97	\$6.56	21m
Namibia	\$72.05	\$34.75	2.1m
Nigeria	\$256.63	\$1.77	140m
Rwanda	\$89.88	\$8.81	10m
South Africa	\$334.03	\$6.89	48m
Tanzania	\$197.55	\$4.98	39m
Uganda	\$202.52	\$6.68	30m
Zambia	\$26.22	\$2.12	12m

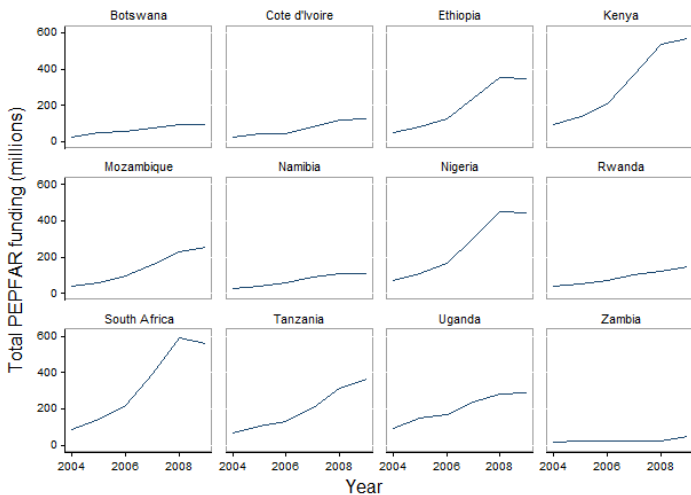
HIV prevalence rates by focus status



HIV prevalence rates by country



Total PEPFAR funding by country



Per capita PEPFAR funding by country

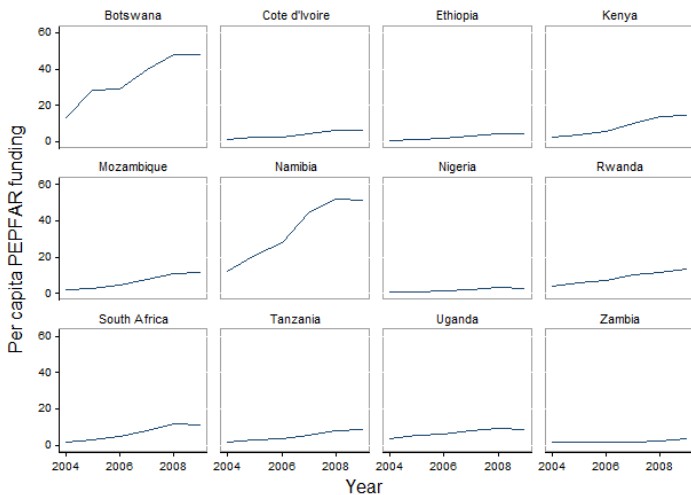


Table: Difference-in-differences regression

	(Neonatal mortality)	(Neonatal mortality)
Focus	-0.110 (0.541)	-0.448 (0.442)
Policy	-0.107 (0.167)	0.329 (0.219)
Focus*Policy	0.635 (0.349)	0.722* (0.314)
GDP		1.373*** (0.372)
Health aid		-0.430** (0.123)
Gov't health spending		-0.289* (0.139)
Polity		0.0362 (0.0317)
Population		-0.0269 (0.165)
Urbanization		-0.0314* (0.0128)
Constant	-1.565*** (0.292)	-8.088* (3.801)
<i>N</i>	432	424
<i>r</i> ²	0.0160	0.282

Standard errors clustered by country

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Robustness checks

- ▶ Alternate windows: 1997-2010, 1999-2008, 2000-2007, 2001-2006
- ▶ Five extra countries: Gambia, Madagascar, Niger, Senegal, Somalia
- ▶ Initial levels term
- ▶ HIV prevalence term
- ▶ Health aid covariate includes HIV aid
- ▶ Fiscal covariates as levels and annual % changes
- ▶ South Africa and Swaziland dropped
- ▶ Botswana and Namibia dropped