

Does debt relief “irresistibly attract banks as honey attracts bees”? Evidence from low-income countries’ debt relief programs.

Supplementary Appendix

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1 Descriptive statistics and covariates

1.1 Eurobonds developments in sub-Saharan African HIPCs

Table S.A1: Bonds issued by HIPCs between 2007 and 2015

Countries	Date	Interest rate	Maturity	Amount (M\$)	Currency
Ghana	09/27/2007	8.5	10	750	USD
Congo	12/06/2007	8.77	22	480	USD
Senegal	12/15/2007	9.473	5	200	USD
Cote d'Ivoire	03/15/2010	17.354	22	2330	USD
Senegal	05/06/2011	9.123	10	500	USD
Zambia	09/13/2012	5.625	10	750	USD
Tanzania	02/27/2013	6.284	7	600	USD
Rwanda	04/16/2013	6.746	10	400	USD
Ghana	08/01/2013	7.8	10	750	USD
Ghana	09/12/2014	8.25	12	1000	USD
Senegal	07/30/2014	6.25	10	500	USD
Zambia	04/14/2014	8.63	10	1000	USD
Ethiopia	12/2014	6.625	10	1000	USD
Cote d'Ivoire	07/2014	5.625	10	750	USD
Zambia	07/24/2015	9.375	12	1250	USD
Cote d'Ivoire	02/24/2015	6.625	12	1000	USD
Ghana	10/13/2015	10.75	15	1000	USD
Cameroon	11/13/2015	9.75	10	750	USD

Source: French Treasury' notes using data from IMF (2014) "issuing International sovereign bonds, opportunities and challenges for sub-Saharan Africa" for bonds issued up to April 2013, Reuters for remaining bond issues.

1.2 Control variables: discussion and selection

Control variables selected for this analysis rely on two specific strands of the existing literature; the determinants of market access for developing countries, and the reputation cost of defaulting on sovereign claims. Following [Cantor and Packer \(1996\)](#), we consider variables that have been identified as determinants of sovereign credit ratings, and which might affect the decision of private investors to lend as well as the risk premium associated with. We thus take as explanatory variable the per capita GDP (GDP_PC) since it reflects country's level of economic development, and so its ability to raise taxes and service its debt ([Eichengreen et al., 2002](#); [Afonso, 2003](#); [Afonso et al., 2007](#); [Gelos et al., 2011](#)). In the same vein, we add the economic growth (GDP_GROWTH) to our list of determinants ([Edwards, 1984](#); [Baldacci et al., 2008](#)). The ability to repay foreign debt is then captured by external reserves (TOT_RESV, expressed in months of imports) ([Benczúr and Ilut,](#)

2015) as well as the current account balance (CAB, net of external grants) which partly reflects structural strengths and weaknesses of debtor countries (Edwards, 1984; Baldacci et al., 2008). We also consider the inflation rate (INF) since high inflation points to structural imbalances and weak economic management which can both lead to economic and political instability and discourage foreign investors (Cuadra and Sapriza, 2008; Eichengreen et al., 2002). In order to include a more straightforward measure of political and economic risk, we consider the government's durability (DURABLE), the economic freedom index from the Heritage Foundation (ECO_FREE) as in Baldacci et al. (2008), and alternately the CPIA index following (Gelos et al., 2011). We also control for the degree of general openness of debtor countries using the overall globalization index (KOF_INDEX) developed by Dreher (2006). We expect these indicators to reflect country's foreign exchange capacity as well as institutional quality specific to capital and merchandises movements and thus being positively associated with debt contracted to private creditors. Lastly, we add the resource rent as a share of GDP (RES_RENT) in order to account for private lenders targeting solely resource-rich countries (which could face lower risk premiums given their large resource revenues (Presbitero et al., 2016)). Yet, dependency on natural resources can also divert external investors since it is often associated with volatile exports revenues which can weaken the debtor capacity to repay. This leads natural resources to have an ambiguous effect on borrowing to external private creditors.

As pointed in section 2, we also refer to papers investigating the reputation effects of having defaulted on sovereign loans. Although most of those papers control for the variables exposed above, (Cruces and Trebesch, 2013) show that the re-access can be determined by the debtor credit history, such as the size of prior haircuts on debt to private creditors. Therefore, we further investigate the role played by previous rescheduling on debt to private creditors in the HIPC's regained access to financial markets.

Table S.A2: Covariates: expected effects on public financing to private creditors.

Variables	Definition	expect. sign	Studies
GDP_PC	GDP per capita (constant USD, log)	+	Cantor and Packer (1996), Eichengreen et al. (2002), Afonso (2003), Afonso et al. (2007), Borensztein and Panizza (2009), Gelos et al. (2011), Richmond and Dias (2008), Benczúr and Ilut (2015)
GDP_G	GDP growth (%)	+	Edwards (1984), Cantor and Packer (1996), Afonso (2003), Borensztein and Panizza (2009), Gelos et al. (2011), Richmond and Dias (2008), Benczúr and Ilut (2015)
CAB	Current account balance net from ext. Grants	-/+	Edwards (1984), Cantor and Packer (1996), Ferrucci (2003), Afonso et al. (2007), Borensztein and Panizza (2009), Baldacci et al. (2008), Cruces and Trebesch (2013)
TOT_RESV	International reserves (in months of imports)	+	Edwards (1984), Afonso et al. (2007), Baldacci et al. (2008), Gelos et al. (2011), Hilscher and Nosbusch (2010), Cruces and Trebesch (2013), Benczúr and Ilut (2015)
INF	Inflation rate	-	Cantor and Packer (1996), Borensztein and Panizza (2009), Baldacci et al. (2008), Eichengreen et al. (2002), Afonso (2003), Afonso et al. (2007), Baldacci et al. (2008)
DURABLE/ ECO FREE	Political/Economic risk	-	Borensztein and Panizza (2009), Gelos et al. (2011), Cruces and Trebesch (2013) Cruces and Trebesch (2013), Trebesch and Zabel (2017)
CPIA	Institutional quality	+	Eichengreen et al. (2002), Afonso et al. (2007), Gelos et al. (2011)
KOFE	Globalization/openness index	+	Edwards (1984), Borensztein and Panizza (2009), Gelos et al. (2011), Eichengreen et al. (2002), Ferrucci (2003)
HAIR_CUT	Size of the haircut on prior restructuring	-	Cruces and Trebesch (2013); Trebesch and Zabel (2017)

1.3 Control variables: descriptive statistics

Table S.A3: Descriptive Statistics - Whole Sample [1992-2015]

Variables	Source	Unit	Mean	Std. Dev.	Obs.
<i>Dependent variables</i>					
<i>Priv..Bk.</i>	IDS	% of GDP	0.27	0.88	1319
<i>Priv..Cred.</i>	IDS	% of GDP	0.97	2.07	1319
<i>Priv..Com.</i>	IDS	% of GDP	1.03	2.21	1319
<i>Bonds</i>	IDS	% of GDP	2.062	1.81	1319
<i>Priv..Int.</i>	IDS	%	5.36	2.46	726
<i>Explanatory variables</i>					
GDP_PC	WDI	constant USD, log	7.63	0.95	1319
GDP_GROWTH	WDI	% change	4.77	4.06	1318
RES_RENT	WDI	% of GDP	9.20	11.14	1319
CAB	WDI	% of GDP	-7.97	11.61	1317
GROSS_SAVING	WDI	% of GDP	20.60	10.61	1319
FDLINFLOW	UNCTAD	% of GDP	3.78	4.67	1319
DURABLE	Polity IV	years	16.40	15.06	1319
KOF	Dreher (2006)	index	50.33	10.77	1230
ECO_FREE	Heritage Foundation	index	57.06	7.75	1319
FINA_FREE	Heritage Foundation	index	47.75	15.69	1319

Note: Descriptive statistics for the whole sample. The entire sample comprises an unbalanced panel of 24 HIPCs and 65 non-HIPC developing countries observed between 1992 and 2015.

Table S.A4: Descriptive statistics on official financing flows

HIPCs	Obs	Mean	Std. Dev.	Min	Max
NAT_All (% GDP)	322	12.55	6.31	2.57	49.85
BILAT (% GDP)	322	6.04	3.12	0.48	23.03
MULTI (% GDP)	322	6.51	3.84	0.93	26.81
Non-HIPCs	Obs	Mean	Std. Dev.	Min	Max
NAT_All (% GDP)	1046	4.01	5.07	0	38.45
BILAT (% GDP)	1046	2.39	3.02	0	21.85
MULTI (% GDP)	903	1.65	2.41	0	17.27

Notes: Data have been retrieved from the OECD-DAC database (International Development Statistics). The top half of the Table exposes statistics for HIPCs sample considered when looking at changes around the interim period (24 HIPCs). The bottom half then provides statistics for all the non-HIPCs (65 developing countries).

2 Control group's suitability

2.1 Ex-ante comparisons

Table S.B1: Descriptive Statistics on Pre-Debt Relief Periods

	(1)	(2)	(3)
	Pre-Decision point period		
	Mean		Mean difference
Variable / Group	HIPCs	Non-HIPCs	(I)-(II)
outcome variables:			
<i>Priv._Bk.</i> (% of GDP)	0.06	0.52	-0.46***
<i>Priv._Cred.</i> (% of GDP)	0.21	1.36	-1.15***
<i>Priv._Com.</i> (% of GDP)	0.22	1.41	-1.19***
<i>Bonds</i> (% of GDP)	0	0.44	-0.44***
<i>Priv._Int.</i> (%)	5.46	6.55	1.09**
country-level controls:			
PPG_EXT_DEBT (% of exports)	585.44	163.50	421.94***
LIC Status	0.91	0.32	0.59***
GDP pc (in log)	6.33	7.63	-1.30***
GDP Growth (% change)	4.04	3.86	0.18
RES_RENT (% of GDP)	10.88	7.52	3.35***
CAB (% of GDP)	-18.81	-8.33	-10.47***
DURABLE	6.54	15.96	-9.41***
KOF	34.99	42.38	-7.39***
ECO_FREE	53.56	54.78	-1.13**
GROSS_SAVING (% of GDP)	11.62	19.78	-8.16***
FINA_FREE	41.82	47.35	-5.53***
FDI_INFLOW (% of GDP)	2.21	3.37	-1.16***

Notes: Mean values have been computed over the 6 years before the decision point of each HIPCs. For control groups, we have calculated the average across non-HIPC developing countries and over the 6 years before the decision point of their associated HIPCs' cohort. ***, ** and * denote significance at 1%, 5% and 10% levels.

2.2 Parallel trend discussion

The hypothesis of common trends in the years preceding the treatment is of major importance in DiD settings. As underlined by Angrist and Pischke (2008), counterfactuals need to display a trend in the outcome variable similar to the one observed for the “treated” countries in order to provide a reliable prediction of how the dependent variable would have evolved in absence of the treatment. Parallel trend prior to the debt relief initiatives can first be tested using the following model (restrained over the ex-ante period (1991-1999) *i.e.* the period before the enhanced HIPC initiative was implemented):

$$Y_{i,t} = \alpha + \nu_i + \delta Trend_t + \beta HIPC_i \times Trend_t + \gamma Z_{i,t} + \epsilon_{i,t} \quad (1)$$

where $Trend_t$ stands for a (continuous) time trend defined over 1991-1999 common to both HIPCs and control countries. Note that thanks to our panel data, the dummy variable identifying “treated” countries ($HIPC_i$) is captured by country-fixed effects. The existence of a divergence in the outcome variables prior to the debt relief period would therefore lie in the coefficient associated with the interaction term $HIPC_i \times Trend_t$ which (if statistically significant) would indicate that, over the ex-ante period, HIPCs have experienced a different trend in the outcome variable of interest. Table S.B2 (Panel A) below suggests that there is no such diverging path in our various variables of interest with respect to non-HIPC countries.

Another approach to test for the common trend hypothesis is to run a simple placebo test. We suggest running an event-study model over the period before each HIPC’s decision point (six years). We match one group of non-HIPC countries with each HIPC cohort, since HIPCs entered the initiative at different dates (so the same countries as above but observed at different years with respect to the decision point date of each HIPC). We then create a placebo treatment with the variable $Post_Placebo_s$ which is equal to 1 for the three years preceding the decision point [-3; -1], and equal to 0 for the three years before this period [-6; -4]. The model takes the following form:

$$Y_{i,s} - \bar{Y}_{i,s} = \alpha + \beta Post_Placebo_s + \nu_i + \delta_t + \epsilon_{i,s} \quad (2)$$

and is estimated for the period [-6; -1] with respect to each HIPC cohort’s decision point. $Y_{i,s} - \bar{Y}_{i,s}$ represents the difference in the dependent variable between HIPC i and the average of its associated control group in year s (with $s \in [-6; -1]$). The variable $Postplacebos$ is a dummy variable that takes 1 for years more recent or equal to -3, and 0 otherwise, and thus captures the average ex-ante difference in outcome variable trends between HIPCs and their associated control group. Table S.B2 reports the results in Panel B. We observe that the coefficient associated with the Placebo test for the variables used as a proxy for access to international financial markets or for borrowing costs is not statistically significant.

This reassures us regarding the existence of a common trend between HIPCs and non-HIPC developing countries considered for this study and warrants the latter as a relevant control group.

Table S.B2: Parallel trend tests

Control Group: All DCs	(1)	(2)	(3)	(4)
Dep. var. (% of GDP)	<i>Priv._Bk.</i>	<i>Priv._Cred.</i>	<i>Priv._Com.</i>	<i>Priv._Int.</i>
Panel A: HIPCs time trend	Period: 1992-2000			
HIPC X Trend	-0.015 (0.023)	-0.039 (-0.551)	0.033 (0.348)	-0.011 (-0.085)
Trend	0.020 (0.027)	-0.009 (-0.092)	-0.049 (-0.396)	0.081 (1.019)
Observations	615	615	615	324
No. of country	86	86	86	68
No. of HIPCs	24	24	24	15
Controls	Yes	Yes	Yes	Yes
Year FE	No	No	No	No
Country FE	Yes	Yes	Yes	Yes
Panel B: Placebo Treatment	Period: Placebo test [-6;-4] vs [-3;-1]			
Post-Placebo period	0.021 (0.364)	-0.351 (-1.108)	0.698 (1.453)	-2.815** (-2.229)
Observations	144	144	144	37
No. of HIPCs	24	24	24	12
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes

Notes: Robust t-statistics in parentheses (with standard-errors clustered at both the country and year-level for Panel A estimates). ***, ** and * denote significance at 1%, 5% and 10% levels.

3 Robustness checks

3.1 Main results - Sensitivity tests

3.1.1 To dependent variable's unit measure

Table S.C1: Difference-in-Differences Estimates - Baseline results

Control Group: All DCs	(1)	(2)	(3)	(4)
POST-HIPC:	Post-Interim Period (with at least + 6 years after)			
OLS-DiD, Debt flows				
Dep. var. (% of EXP)	<i>Priv._Bk._{i,t}</i>		<i>Priv._Cred._{i,t}</i>	
POST-HIPC _{<i>i,t</i>}	0.892*** (0.271)	1.127*** (0.268)	2.742** (1.171)	2.532** (1.125)
Constant	0.904*** (0.085)	-6.604** (3.123)	4.045*** (0.392)	9.933 (15.049)
Observations	2,338	1,732	2,338	1,732
No. of country	101	89	101	89
Prob ≥ F (p-val)	0.018	0.009	0.004	0.007
R-squared	0.019	0.066	0.032	0.023
Dep. var. (% of EXP)	<i>Priv._Com._{i,t}</i>		<i>Bonds_{i,t}</i>	
POST-HIPC _{<i>i,t</i>}	2.135** (0.929)	2.552** (1.116)	0.369 (0.551)	0.621 (0.743)
Constant	3.260*** (0.365)	-18.410 (15.807)	0.292 (0.304)	-19.321* (10.967)
Observations	2,338	1,732	2,338	1,732
No. of country	101	89	101	89
Prob ≥ F (p-val)	0.000	0.000	0.004	0.005
R-squared	0.045	0.049	0.027	0.037

Notes: Table S.C1 shows the results for a sample of 24 HIPC's that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. *Priv._Bk.*, *Priv._Cred.*, *Priv._Com.*, and *Bonds* denote respectively debt disbursements to private external banks, external creditors, debt commitments to external private creditors, and PPG bonds in percentage of debtor's exports. All regressions include controls (same as in baseline estimates), country- and year-fixed effects. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

3.1.2 To control groups' composition

Table S.C2: Alternative Control Groups

Indebted (X/D) & Poor DCs				
<i>Debt-to-exports ratio sup. 170% and LIC average status at least (3/5)</i>				
Bangladesh	Bhutan	Eritrea	Georgia	India
Indonesia	Kenya	Kyrgyz Republic	Lao PDR	Lesotho
Nepal	Nigeria	Pakistan	Sudan	Vietnam
Yemen	Zimbabwe			
Indebted DCs				
<i>Debt-to-Exports Ratio sup. 170% and LIC average status at least (0/5)</i>				
Algeria	Argentina	Bangladesh	Bhutan	Cambodia
Dominica Republic	Ecuador	Eritrea	Georgia	Grenada
India	Jordan	Kenya	Kyrgyz Republic	Lao PDR
Lebanon	Lesotho	Morocco	Nepal	Nigeria
Pakistan	Peru	Samoa	Serbia	Sudan
Tonga	Vietnam	Yemen	Zimbabwe	
Poor DCs				
<i>Debt-to-Exports Ratio sup. 0% and LIC average status at least (5/5)</i>				
Armenia	Azerbaijan	Bangladesh	Bhutan	Cambodia
Eritrea	India	Kenya	Kyrgyz Republic	Lao PDR
Lesotho	Moldova	Mongolia	Nepal	Nigeria
Pakistan	Sudan	Tajikistan	Uzbekistan	Vietnam
Yemen	Zimbabwe			
African DCs				
<i>Debt-to-Exports Ratio sup. 0% and LIC average status at least (0/5)</i>				
Algeria	Angola	Botswana	Djibouti	Eritrea
Kenya	Lesotho	Mauritius	Morocco	Nigeria
South Africa	Sudan	Swaziland	Tunisia	Zimbabwe

Table S.C3: DiD Estimates - Sensitivity to alternative control groups

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POST-HIPC:	Post-Interim Period (with at least + 6 years after)							
OLS-DiD								
Dep. var. _{<i>i,t</i>} (% of GDP)	<i>Priv._Bk.</i>	<i>Priv._Cred.</i>	<i>Priv._Com.</i>	<i>Bonds</i>	<i>Priv._Bk.</i>	<i>Priv._Cred.</i>	<i>Priv._Com.</i>	<i>Bonds</i>
Control Group:	Indebted (X/D) & Poor DCs				Indebted DCs			
POST-HIPC _{<i>i,t</i>}	0.284** (0.106)	0.136 (0.246)	0.504* (0.244)	-0.027 (0.094)	0.257*** (0.080)	0.310 (0.553)	0.334 (0.444)	-0.318 (0.350)
Constant	-3.166*** (0.926)	-3.606 (2.241)	-6.126** (2.750)	-2.780** (1.166)	-3.275*** (0.829)	0.735 (4.025)	-2.359 (4.233)	0.588 (3.354)
Observations	759	759	759	759	919	919	919	919
No. of country	40	40	40	40	48	48	48	48
Prob ≥ F (p-val)	0.002	0.000	0.002	0.000	0.058	0.000	0.003	0.035
R-squared	0.156	0.069	0.098	0.094	0.136	0.069	0.055	0.061
Control Group:	Poor DCs				African DCs			
POST-HIPC _{<i>i,t</i>}	0.373*** (0.113)	0.395 (0.279)	0.702** (0.292)	0.034 (0.091)	0.686** (0.299)	1.302* (0.680)	1.273** (0.487)	0.125 (0.096)
Constant	-2.515** (0.952)	-1.367 (1.868)	-5.671** (2.421)	-3.035* (1.588)	3.934 (4.998)	7.487 (6.080)	5.444 (8.782)	-1.437 (1.919)
Observations	845	845	845	845	744	744	744	744
No. of country	45	45	45	45	39	39	39	39
Prob ≥ F (p-val)	0.000	0.001	0.001	0.014	0.000	0.000	0.000	0.024
R-squared	0.138	0.072	0.081	0.083	0.138	0.143	0.109	0.074

Notes: Table S.C3 displays results for a sample of 24 HIPCs that have reached their completion point no later than 2009. **Indebted (X/D) & Poor DCs:** Debt/Exports ≥ 170% and LIC Status at least (3/5), 17 countries; **Indebted DCs:** Debt/Exports ≥ 170% and LIC status at least (0/5), 29 countries. **Poor DCs:** Debt/Exports ≥ 0% and LIC status at least (5/5), 22 countries. **African DCs:** African countries, Debt/Exports ≥ 0% and LIC status at least (1/5), 15 countries. All regressions include controls (same as in baseline estimates), country- and year-fixed effects. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

3.1.3 To HIPC Initiatives' disclosure dates

Table S.C4: DiD Estimates - Interim period restricted down to the HIPCIs disclosure dates

Control Group: All DCs	(1)	(2)	(3)	(4)
Dep. var. (% of GDP)	<i>Priv._Bk._{i,t}</i>	<i>Priv._Cred._{i,t}</i>	<i>Priv._Com._{i,t}</i>	<i>Bonds_{i,t}</i>
Panel A: OLS-DiD	POST-HIPC: Post 1999-Completion point (with at least + 6 years after)			
POST-HIPC _{<i>i,t</i>}	0.357*** (0.090)	0.515 (0.354)	0.411 (0.333)	-0.322 (0.233)
Constant	-1.775 (1.429)	6.855 (5.655)	-0.671 (4.234)	-0.717 (2.712)
Observations	1,672	1,672	1,672	1,672
No. of country	89	89	89	89
Controls	Yes	Yes	Yes	Yes
Prob ≥ F (p-val)	0.022	0.009	0.001	0.000
R-squared	0.070	0.069	0.051	0.058
Panel B: OLS-DiD	POST-HIPC: Post 1996-Completion point (with at least + 6 years after)			
POST-HIPC _{<i>i,t</i>}	0.324*** (0.082)	0.429 (0.425)	0.267 (0.365)	-0.481* (0.245)
Constant	-1.775 (1.452)	6.929 (5.736)	-0.521 (4.301)	-0.627 (2.758)
Observations	1,624	1,624	1,624	1,624
No. of country	89	89	89	89
Controls	Yes	Yes	Yes	Yes
Prob ≥ F (p-val)	0.023	0.006	0.001	0.000
R-squared	0.071	0.070	0.053	0.061

Notes: Table S.C4 display estimates' results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 non-HIPCs developing countries considered as relevant counterfactual. Panel A results are obtained from estimates where the POST-HIPC_{*i,t*} variable takes the value 1 for all the years following the completion point and zero for years before 1999 (with 1999 included). Panel B displays estimates' results when this variable takes the value 0 for all the years before 1996 (with 1996 included). All regressions include country- and year-fixed effects as well as the set of control variables used so far. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

3.1.4 To sample dependence

Table S.C5: DiD Estimates - Outliers and Sample Sensitivity

Control Group: All DCs	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POST-HIPC:	Post-Interim Period (with at least + 6 years after)							
Dep.var. (% of GDP)	<i>Priv._Bk._{i,t}</i>							
OLS-DiD								
<i>excluding</i>	Benin	Bolivia	Burkina Faso	Burundi	Cameroon	CAF	Ethiopia	Gambia
POST-HIPC _{i,t}	0.345*** (3.784)	0.342*** (3.723)	0.352*** (3.830)	0.348*** (3.793)	0.339*** (3.780)	0.353*** (3.818)	0.325*** (3.841)	0.338*** (3.650)
<i>excluding</i>	Ghana	Guyana	Honduras	Madagascar	Malawi	Mali	Mauritania	Mozambique
POST-HIPC _{i,t}	0.340*** (3.848)	0.338*** (3.948)	0.344*** (3.860)	0.349*** (3.717)	0.341*** (3.804)	0.347*** (3.758)	0.363*** (3.524)	0.341*** (3.923)
<i>excluding</i>	Nicaragua	Niger	Rwanda	Senegal	Sierra L.	Tanzania	Uganda	Zambia
POST-HIPC _{i,t}	0.345*** (3.910)	0.346*** (3.693)	0.349*** (3.825)	0.347*** (3.783)	0.350*** (3.757)	0.334*** (3.841)	0.359*** (3.909)	0.341*** (3.872)
<i>excluding</i>	Top <i>Priv._Bk.</i> among:							
	All sample ¹		HIPC ²					
POST-HIPC _{i,t}	0.228*** (3.726)		0.305*** (3.923)					

Notes: All results are obtained from OLS-DiD estimates where each HIPC has been dropped one-by-one from the sample. The sample is made of 24 HIPCs that have completed the process no later 2009. OLS estimates in the bottom line of the table remove from the sample countries with largest debt disbursements from private foreign banks (alternately among all sample countries¹, and among HIPC²): ¹: Angola, Mauritius, Moldova, Mongolia, Paraguay; ²: Ethiopia, Ghana, Tanzania. All regressions includes country- and year-fixed effects as well as the set of control variables used so far. F-statistics are statistically significant at the 1% level. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

3.2 Identification strategy: an IV proposal

Despite the various attempts in reducing endogeneity bias in the core manuscript, readers might still worry about the non-randomness of debt relief programs. Selection issue indeed represents an serious concern in our empirical strategy that the presence of an ex-ante common trend, the control for time-varying observed characteristics and the inclusion of fixed effects cannot fully alleviate. A proper identification strategy therefore requires a mechanism that would randomly assign participation to the enhanced HIPC initiative among developing countries recording an economic pattern relatively close from the HIPCs' one. To this end, we suggest using an IV strategy exploiting changes that are exogenous to both HIPCs and non-HIPC countries and likely to affect their likelihood in debt relief program participation.

In the spirit of [Gehring and Lang \(2020\)](#), our instrumental variable consists in an interaction term combining variables with large spatial and temporal variability, and takes the following form:

$$POSTHIPC_{i,t} = PC_Prob_{i,t} \times Pub.Bal.PCmbrs_t$$

where firstly, $PC_Prob_{i,t}$ denotes a country's probability of having benefited from a debt treatment at the Paris Club in the past. Such probability is computed as the share of past years a country i received debt treatments from its official creditors under Paris Club agreements. To do so, we gathered information about all debt treatments (either debt write-offs or rescheduling) conducted at the Paris Club since 1956. $PC_Prob_{i,t}$ therefore varies over time and across countries as they benefit or stop benefiting from debt treatments at the Paris Club. Since recurrence in debt treatments at the Paris Club is likely to underline structural debt management issues in debtor countries, we expect $PC_Prob_{i,t}$ to positively explain participation in the enhanced HIPC initiative. As in [Gehring and Lang \(2020\)](#), we start counting past debt treatments at the Paris Club since its creation in 1956 (so well before our observation period) in order to prevent significant year-to-year changes in this variable in the early period of our sample. Such historical step back helps in mitigating the potential violation of the exclusion restriction as $PC_Prob_{i,t}$ mostly depends on earlier debt treatments.

Using information relative to the various mix of official creditors having participated to debt treatments since 1956 (also retrieved from the Paris Club website), we then compute the average fiscal balance of Paris Club members, $Pub.Bal.PCmbrs_t$. Fiscal balance of Paris Club members at time t is the weighted average of official creditors' fiscal balance in year t , that have been involved in Paris Club debt treatments. Fiscal balance data are thus weighted with respect to the participation frequency of each official creditor¹ involved in all debt treatments conducted at the Paris club since 1956. Furthermore, since our identification strategy aims at assessing the causal effect of having benefited from debt relief under the enhanced HIPC initiative on private foreign lending in the post-completion period (and since our instrument is more likely to capture

¹Which is defined as a participation share *i.e* the number of participation over all debt treatments.

participation into this initiative at the time t), we consider the five-year lagged value of the interaction term to instrument the post-debt relief period (the average HIPCs' interim period length being around 4 years long). The final version of our instrument can hence be written as:

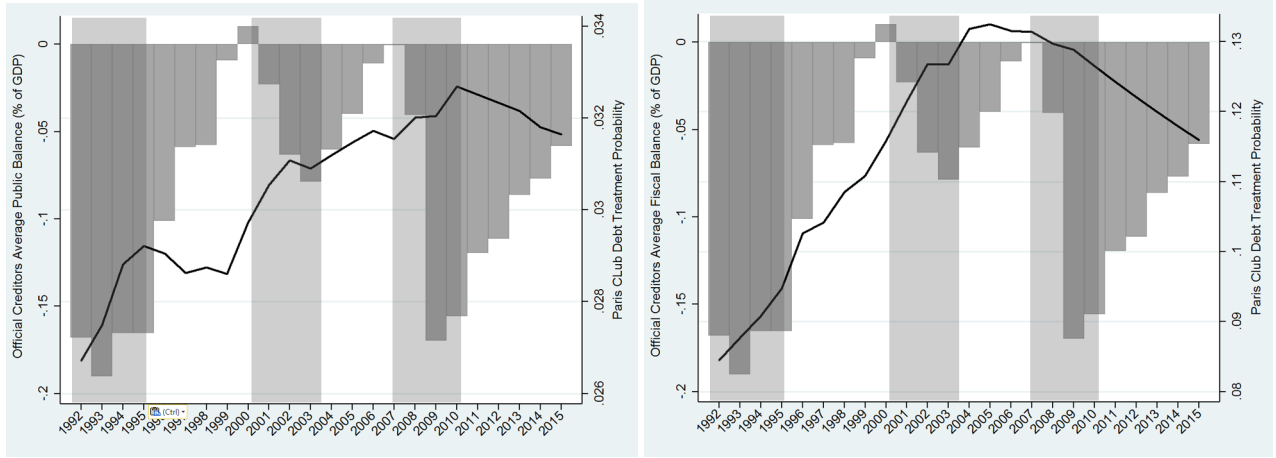
$$POSTHIPC_{i,t} = PC_Prob_{i,t-5} \times Pub.Bal.PCmbrs_{t-5} \quad (3)$$

Yet, despite the contribution of historical developments at the Paris Club to our measure of debt treatment's probability ($PC_Prob_{i,t-5}$), such probability might still be perceived as endogenous to the probability of having been granted debt relief under the Enhanced HIPC initiative. The frequency of debt treatment at the Paris Club could indeed be correlated with the same unobserved factors that explain participation in the debt relief initiative. The exogenous feature of our identification strategy thus relies on the idea that such probability potentially varies with respect to public finance developments in official creditors, which are the major stakeholders of the early 2000s debt relief initiatives. Contrary to the probability of having benefited from debt treatments at the Paris Club, economic developments in developing countries under review are unlikely to affect the fiscal balance's evolution of Paris Club members. In the same vein of [Werker et al. \(2009\)](#); [Nunn and Qian \(2014\)](#); [Ahmed et al. \(2016\)](#) and more recently [Dreher et al. \(2019\)](#), our identification strategy therefore builds on the interaction term between an excludable instrument and a potentially endogenous selection variable.

To our knowledge there is no study so far attempting to instrument participation in these debt relief initiatives with external instruments. Therefore, it is difficult to anticipate what would be the contribution of Paris Club members' public finance to the likelihood of having participated to the Enhanced HIPC initiative. Two competing stories come into play. Building first on the aid effectiveness literature, and more specifically on studies specific to the new generation of aid instruments, increase in donor's government expenditures has been shown to favor aid disbursements ([Round and Odedokun, 2004](#); [Dreher and Fuchs, 2011](#); [Brech and Potrafke, 2014](#)). One could therefore expect fiscal loosening in official creditors to reinforce the probability of having benefited from debt treatments. Conversely, one could also consider official creditors as being less careful regarding debt repayments in times of budget balance' surplus and therefore more willing to grant debt relief. Bearing in mind these mechanisms, a first look at the [Figure S.C1](#) suggests that, in our context, the first story prevails as non-HIPCs benefited from most of their debt treatments at the Paris Club when official creditors (on average) experienced episodes of fiscal loosening. Most salient increases in debt treatments' probability for non-HIPCs are indeed observed over periods corresponding to deepening in official creditors' public deficit (shaded areas in [Figure S.C1](#), left-hand side graph). While HIPCs experienced a continuous increase in debt treatment probability up to debt relief programs ([Figure S.C1](#), right-hand side graph), [Figure S.C1](#) suggests that selection into the debt relief initiatives would have been less important in times of official creditors' fiscal loosening, as most countries with some experience at the Paris Club would have had equal chances of benefiting from debt treatments, and as a result from debt relief under

the Enhanced HIPC initiative

Figure S.C1: Paris Club Debt Treatments and Official Creditors' Public balance



Notes: Left-hand side graph reports the average probability of Paris Club debt treatment for control group countries (*i.e.* 65 non-HIPC developing countries), while right-hand side graph reports the same for treatment countries (*i.e.* 24 HIPCs). The black solid line represents the average (unweighted) public balance of official creditors involved in Paris Club debt treatments (*i.e.* Paris Club members).

Lastly, and as noted in [Gehring and Lang \(2020\)](#), the relevance of our identification strategy also relies on the absence of long-run common trend between our excludable instrument and our various outcome variables. Figures [S.C2](#) and [S.C3](#) below show that private foreign financing to developing countries did not follow (on average) the same pattern as budget balance in official creditors over the study period. When they did (over the most recent years), the evolution was similar for both HIPCs and non-HIPCs, which also alleviate the risk of correlation between the excludable instrument and selection into the debt relief initiatives.

Based on this strategy, we run two-stage-least squares (2SLS) panel regressions over our sample. The first and second stage equation take the following form:

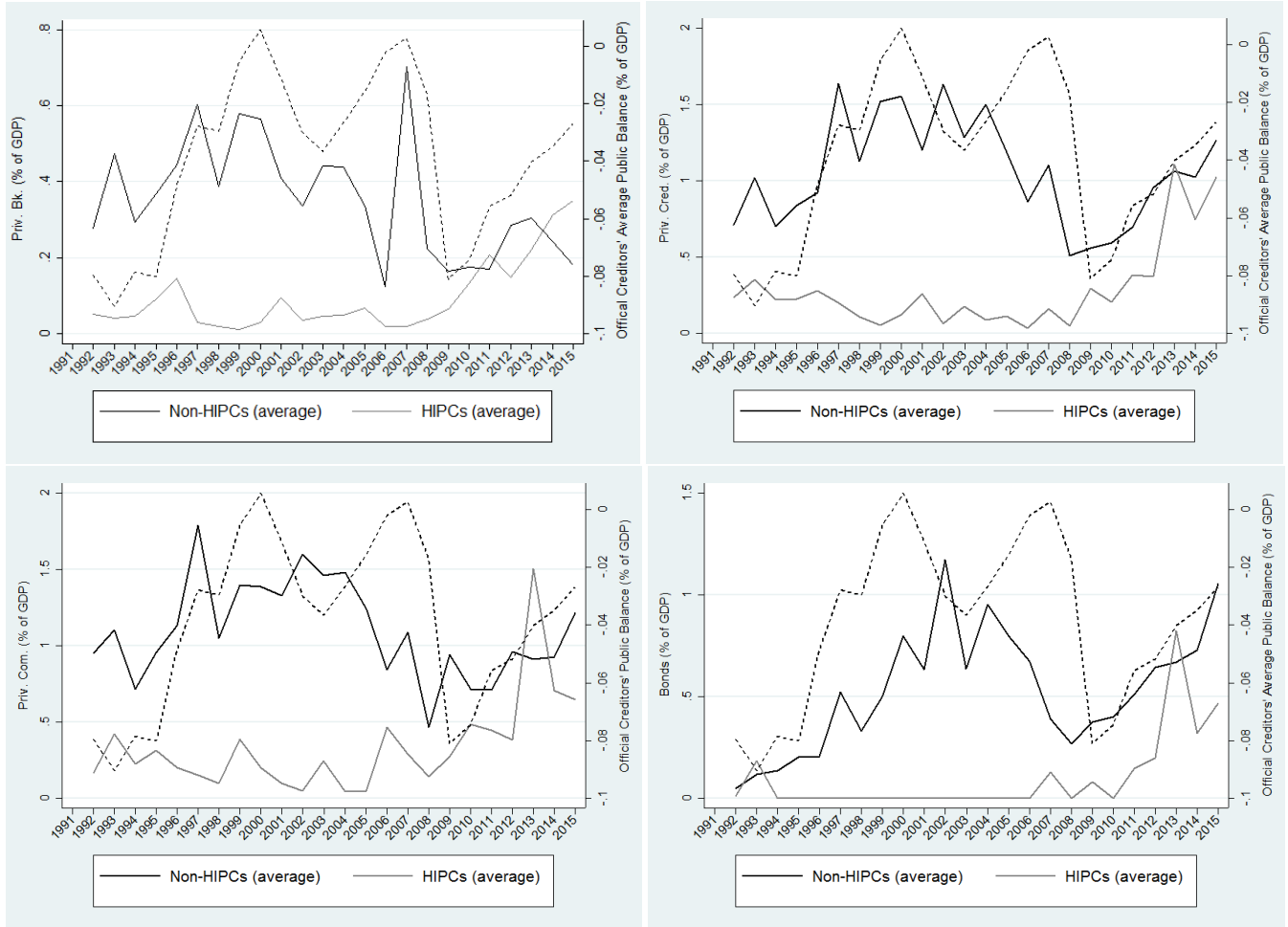
$$POSTHIPC_{i,t} = \alpha + \nu_i + \delta_t + \beta PC.Prob_{i,t-5} \times Pub.Bal.PCmbrs_{t-5} + \omega PC.Prob_{i,t-5} + \gamma Z_{i,t} + \epsilon_{i,t} \quad (4)$$

$Pub.Bal.PCmbrs_{t-5}$ being captured by year fixed effects (δ_t) and therefore not entered in the first stage estimate (beside in interaction with $PC.Prob_{i,t-5}$).

$$Y_{i,t} = \alpha + \nu_i + \delta_t + \beta \widehat{POSTHIPC}_{i,t} + \gamma Z_{i,t} + \epsilon_{i,t} \quad (5)$$

These regressions control for country- and time-fixed effects, as well as country-level covariates in both stages. In addition, second-stage estimates (equation (9)) will alternately control for IV

Figure S.C2: Official Creditor’s average public balance and trends in foreign private financing

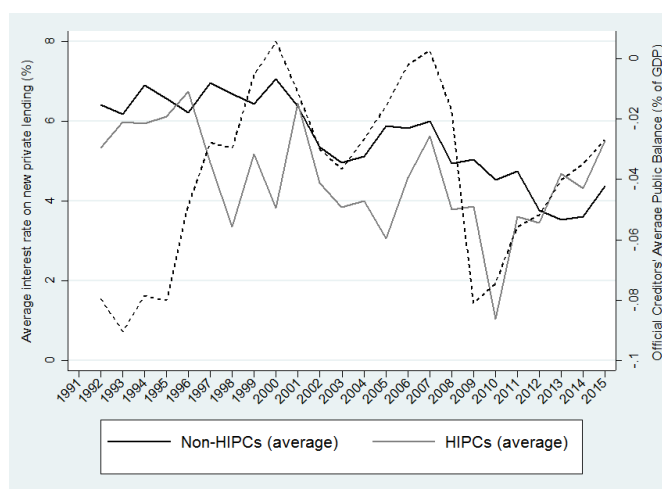


Notes: The four figures report the evolution of the official creditors’ average (unweighted) public balance in percentage of GDP and of foreign private financing flows (the four dependent variable under study) for both subgroups: HIPCs (24 countries) and non-HIPCs (65 other developing countries).

components (especially $PC.Prob_{i,t}$, as $Pub.Bal.PCmbrs_{t-5}$ is captured by year fixed effects) in order to mitigate selection issue in the estimation of the debt relief causal effect on external private new financing since $PC.Prob_{i,t}$ is expected to be an important predictor of participation into the Enhanced HIPC initiative. The results of our IV-DiD estimates are reported in Table S.C6 below.

As compared with the OLS-DiD estimates from the core manuscript, results suggest that, when imposing a more conservative strategy in terms of identification, the causal effect of having benefited from debt relief on new external financing from private creditors significantly varies. Focusing first on odd-number columns of Table S.C6 reporting second-stage IV estimates of equation (5), one can notice that the various types of private foreign financing positively react to the

Figure S.C3: Official Creditor’s average public balance and trend in the average interest rate on new debt disbursements from private creditors



Notes: The figure reports the evolution of the official creditors’ average (unweighted) public balance in percentage of GDP and of the average interest rate on new debt disbursements from private creditors for both subgroups: HIPCs (24 countries) and non-HIPCs (65 other developing countries).

provision of debt relief (except for bonds). Coefficients are now larger than those of OLS results, suggesting a downward bias in OLS estimates as we were expecting in the presence of a negative selection bias. Indeed, unobserved factors that explain participation in the debt relief initiatives are potentially the same that prevented private creditors to lend to the HIPCs in the first place.

Using then a more conservative model, we then enter $PC_Prob_{i,t-5}$ in the second stage estimates. Results are reported in even-number columns of Table S.C6. The positive effect of having benefited from debt relief on external private creditors financing flows, debt commitments from external private creditors, and bonds issuance disappear. Only remains the positive contribution of debt relief provision to private foreign banks’ lending (column (2)). The first stage, reports a positive coefficient for the interaction term, statistically significant at the one percent level. Given the positive coefficient associated with the probability of benefiting from Paris Club debt treatments, the positive effect of the interaction term indicates that in fiscal loosening years of Paris Club members, the history of participation to debt treatments at the Paris Club is less important in predicting the participation to the Enhanced HIPC initiative. The first-stage post-estimation tests reports satisfying values with a p-value inferior to 0.05 for the underidentification Kleibergen-Paap LM statistic. The Kleibergen-Paap F-statistics testing for weak identification is about 33, indicating a bias of less than 10 percent resulting from the IV strategy.

Table S.C6: Difference-in-Differences, IV Estimates (Debt flows)

Control Group: All DCs	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
POST-HIPC:	Post-Interim Period (with at least + 6 years after)							
IV - DiD								
Dep. var. (% of GDP)	<i>Priv._Bk._{i,t}</i>	<i>Priv._Cred._{i,t}</i>	<i>Priv._Com._{i,t}</i>	<i>Bonds_{i,t}</i>				
POST-HIPC _{i,t}	0.628*** (0.209)	0.582** (0.274)	1.591*** (0.536)	0.563 (0.696)	1.441** (0.501)	-0.130 (0.564)	0.510 (0.325)	-0.929 (0.549)
First Stage								
PC.prob _{i,t} X Pub.Bal.PC.mbrs _t	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)	18.837*** (3.241)
PC.prob _{i,t}	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)	9.940*** (1.438)
K-P weak identifi. F-Stat.	29.663	33.777	29.663	33.777	29.663	33.777	29.663	33.777
K-P underidentif. LM-Stat.	6.534	5.762	6.534	5.762	6.534	5.762	6.534	5.762
K-P underidentif. (p-val.)	0.038	0.016	0.038	0.016	0.038	0.016	0.038	0.016
Observations	1,368	1,368	1,368	1,368	1,368	1,368	1,368	1,368
No. of country	89	89	89	89	89	89	89	89
Controls for PC.prob _{i,t}	No	Yes	No	Yes	No	Yes	No	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prob ≥ F (p-val)	0.008	0.012	0.009	0.005	0.011	0.000	0.136	0.007

Notes: Table S.C6 shows the results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. *Priv._Bk.*, *Priv._Cred.*, *Priv._Com.*, and *Bonds* denote respectively debt disbursements to private external banks, external creditors, debt commitments to external private creditors, and PPG bonds in percentage of GDP. All regressions include country- and year-fixed effects. The set of control variables (when entered in the estimates) encompasses: **GDP_PC** in log, **GDP_GROWTH**, **CAB**, **DURABLE**, **KOF**, and **RES_RENT**. Robust standard-errors in parentheses (clustered at both the country and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

Table S.C7 below then display IV-DiD estimates with the average interest rate on new disbursements from private creditors as dependent variable. Overall, results are rather steady from one specification to the other and as compared to those obtained with the OLS-DiD specification from the core manuscript. They suggest that once HIPCs exit the debt relief program, they experience no increase in the interest rate they faced when borrowing from foreign private investors, but rather share with non-HIPCs a global lowering in interest rates.

Table S.C7: Difference-in-Differences, IV Estimates (Interest rates)

Control Group: All DCs	(1)	(2)	(3)	(4)
POST-HIPC				
			Post-Interim Period (with at least + 6 years after)	
IV - DiD				
Dep. var. (%)			<i>Priv.Int._{i,t}</i>	
POST-HIPC _{i,t}	1.556 (1.042)	-1.422 (3.761)	1.954* (1.066)	-1.403 (3.343)
Time trend _t			-0.163*** (0.047)	-0.127* (0.060)
First Stage				
PC.prob _{i,t} X Pub.Bal.PC.mbrs _t	9.579** (4.556)	9.579** (4.556)	9.579** (4.556)	9.579** (4.556)
PC.prob _{i,t}	7.449*** (2.186)	7.449*** (2.186)	7.449*** (2.186)	7.449*** (2.186)
K-P weak identifi. F-Stat.	5.840	4.420	5.868	4.606
K-P underidentif. LM-Stat.	4.619	3.456	4.924	4.393
K-P underidentif. (p-val.)	0.099	0.063	0.085	0.036
Observations	652	652	652	652
No. of country	68	68	68	68
Year-FE	Yes	Yes	No	No
Controls for PC.prob.	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Prob ≥ F (p-val)	0.153	0.000	0.010	0.000

Notes: Table S.C7 shows the results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. All regressions include country-fixed effects. The set of control variables (when entered) comprises **GDP_PC** in log, **RES_RENT**, **GROSS_SAVING**, **FINA_FREE**, **FDI**, which are found to maximize the explanatory power of the interest rate's variance. Robust standard-errors in parentheses (clustered at both the country and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

Overall, the results obtained with our instrumental variables strategy support the findings of the core manuscript. The debt relief initiatives indeed seem having fostered borrowing to private foreign banks, hence enlarging financing opportunities for benefiting countries. Yet, our IV strategy remains questionable, especially regarding the assumption made about exclusion restrictions. Although we believe the long-term aspect of our measure of $PC_Prob_{i,t-5}$ helps us in alleviating concerns regarding the effect of time-varying factors on both the instrument and the outcome variable, we cannot fully rule out the idea that confounding factors might explain at the same time debt treatments at the Paris Club (and so participation into the HIPC initiative) and development in external private financing (or simultaneously fiscal developments in creditors countries and foreign private banks' lending). Consequently, we think about our IV strategy as an attempt in minimizing estimation biases rather than a method that perfectly overcomes endogeneity issues, hence leading us to interpret cautiously our results in terms of causality.

3.3 Synthetic Control Method (SCM).

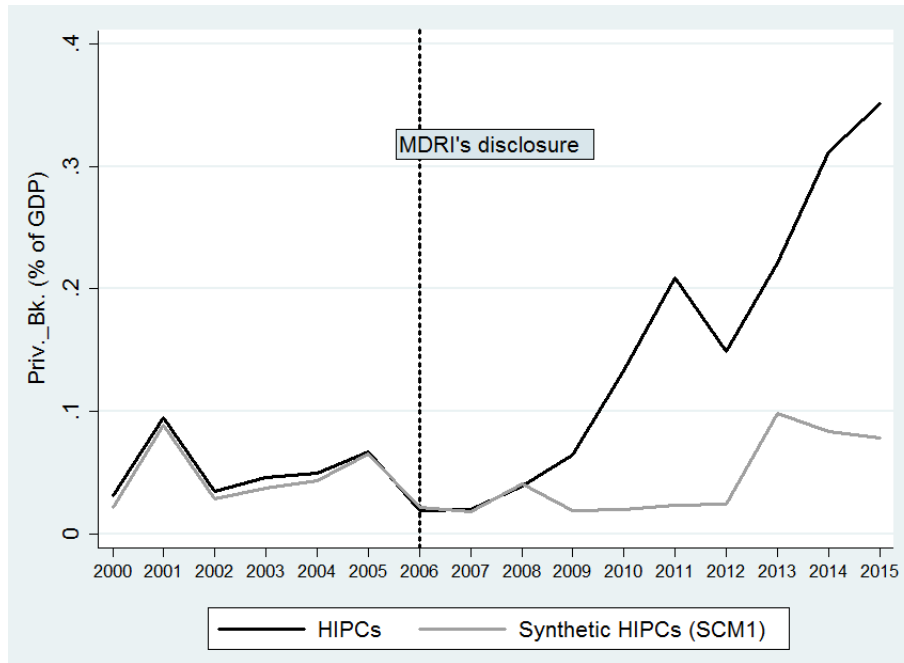
A synthetic control method approach is used in order to confirm that re-access to financing from private external banks indeed occurs in the post MDRI period (so once the HIPCs' debt stock as been almost completely written-off) rather than following the completion point, which for some of the HIPCs of the sample occurs few years before the launch of the MDRI (disclosed in late 2005 and effective in 2006). We thus run the synthetic control method based on [Abadie and Gardeazabal \(2003\)](#) and [Abadie et al. \(2010\)](#) and define as treatment year 2006 for all the 24 HIPCs, even if three of them benefited of the MDRI later on.

Table S.C8: Synthetic Control Method - Specifications & Ex-ante Fit

	HIPCs (all 24)	Synthetic Control Models						
		SCM 1	SCM 2	SCM 3	SCM 4	SCM 5	SCM 6	SCM 7
Ex-ante covariates								
Debt (% of exports)	460.20	463.23	455.77	-	466.65	-	-	-
Debt (% of GDP)	81.56	-	-	81.29	-	39.14	-	-
LIC status	0.88	0.88	0.87	0.87	0.87	0.43	-	-
Africa	0.83	-	-	-	0.83	0.36	0.83	0.83
Ex-ante outcome var.								
<i>Priv..Bk..(2005)</i>	0.22	0.21	0.21	0.20	0.21	0.21	0.21	0.20
<i>Priv..Bk..(2004)</i>	0.13	0.12	0.13	0.12	0.13	0.11	0.13	0.12
<i>Priv..Bk..(2003)</i>	0.16	0.14	-	0.15	0.14	0.14	-	0.15
<i>Priv..Bk..(2002)</i>	0.10	0.09	-	0.09	0.09	0.09	-	0.09
<i>Priv..Bk..(2001)</i>	0.26	0.25	-	0.25	0.25	0.24	-	0.25
<i>Priv..Bk..(2000)</i>	0.09	0.07	-	0.07	0.07	0.07	-	0.08
RMSPE:		2.04^{-12}	0.12	3.02^{-12}	3.41^{-12}	3.89^{-11}	0.095	3.64^{-12}

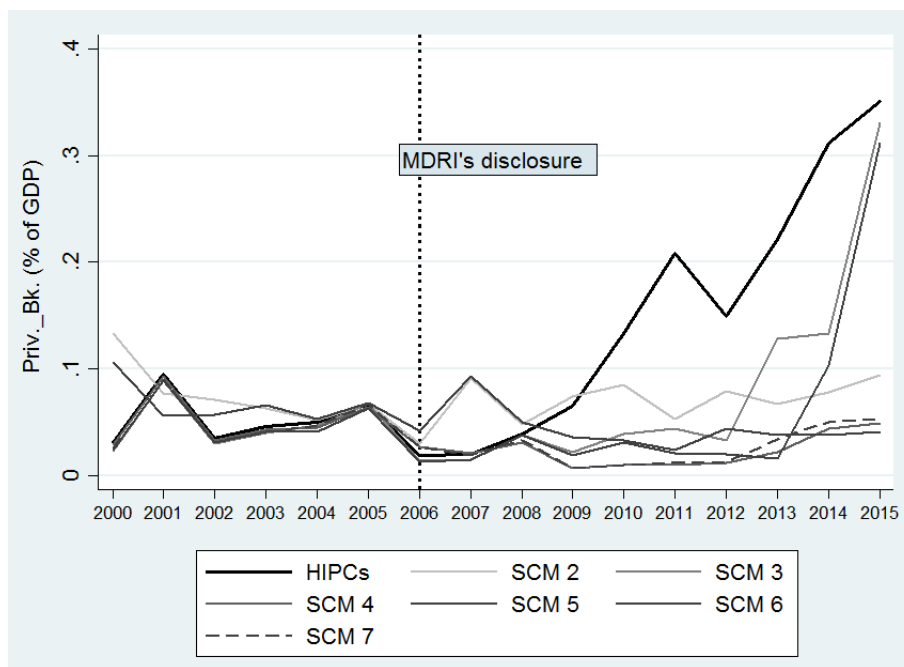
Notes: Table reports the ex-ante average values over outcome variables and additional controls for both the 24 HIPCs having benefited from the MDRI in 2006 as well as the synthetic HIPCs groups (from 1 to 7). The Table suggests almost no ex-ante difference between HIPCs and Synthetic HIPCs in the average levels of the various predictors included in the Synthetic Control Models. Table [S.C9](#) below reports the weights distribution among the sample of non-HIPCs for each synthetic control groups of figure [S.C4](#) & [S.C5](#). In order to save space we only report countries from the top 15 weights distribution. One can notice that weights are quite concentrated (Nigeria for the SCM 1, SCM 4, SCM 6 & 7 respectively). Synthetic control groups from SCM 2, 3, and 5 as reported in Figure [S.C5](#) display however a more disseminated weights distribution, leading to different Synthetic HIPCs but yet, supporting a peculiar increase in borrowing from external private banks for HIPCs.

Figure S.C4: MDRI's effect on unconventional borrowing - SCM



Notes: The synthetic HIPCs group have been obtained out of the pool of 113 control countries i.e. the extended control (when no control is imposed). The weights distribution of the synthetic HIPCs is reported in Table S.C9. The predictors used in order to minimized the Root Mean Squared Predicted Errors (RMSPE) are the lagged levels of the dependent variable (*Priv.Bk.*) averaged over the period (2005-2000). We also add as predictors for the ex-ante period reflecting eligibility criteria for the HIPC initiative such as the LIC status and the debt-to-exports ratio. RMSPE and ex-ante averaged levels of the various predictors for synthetic and treated samples in Table S.C8 suggest a pretty good fit of the Synthetic HIPC stemming from Synthetic Control Model 1 (SCM 1). As one can notice, HIPCs seem to experienced a positive diverging path with respect to their synthetic control groups after the announcement of the MDRI (even if among our 24 HIPCs, the large majority but not all of them benefited from the MDRI in 2006). However the pattern in unconventional borrowing starts to significantly change around 2008/2009 corroborating the potential contribution of the financial crisis to the renewed access of HIPCs to financial market and the influence of push factors. Yet the synthetic control groups catch up the HIPCs group around 2013 before keeping a relatively flat pattern with an average level of *Priv.Bk* below the one recorded for HIPCs in the ex-post period. **Conversely, HIPCs record a different trend regarding debt contracted to private foreign banks which drastically increases all along the post-MDRI period.**

Figure S.C5: SCM - Sensitivity tests



Notes: The predictors included in the various SCM models (as well as their associated RMSPE) are exposed in Table S.C8. One can notice that the difference in outcome variable between HIPCs and the various Synthetic HIPCs occurs few years after 2006, suggesting a delayed effect of the ultimate debt relief initiative, potentially triggered by the 2008 international financial crisis.

Table S.C9: Synthetic Control Groups - Composition & Weights distribution

Synthetic Control Model 1 (SCM 1)					
Nigeria	0.686	Myanmar	0.013	Nepal	0.002
Pakistan	0.137	St. Vincent Grd.	0.005	Vietnam	0.002
Costa Rica	0.036	Bangladesh	0.002	South Africa	0.002
Paraguay	0.035	Bhutan	0.002		
Papua New Guinea	0.026	Kyrgyz Rep.	0.027		
Egypt. Arab Rep.	0.016	Lao PDR	0.002		
Synthetic Control Model 2 (SCM 2)					
Cambodia	0.286	Kyrgyz Rep.	0.043	Myanmar	0.013
Tajikistan	0.086	Nepal	0.042	Uzbekistan	0.013
Moldova	0.070	Nigeria	0.039		
Pakistan	0.045	Lao PDR	0.035		
Bhutan	0.043	Sudan	0.035		
Synthetic Control Model 3 (SCM 3)					
Lao PDR	0.409	Paraguay	0.025	South Africa	0.002
Nigeria	0.292	St. Vincent Grd.	0.005	Cambodia	0.002
Pakistan	0.133	China	0.004	Moldova	0.002
Costa Rica	0.046	Bangladesh	0.002		
Egypt. Arab Rep	0.031	Bhutan	0.002		
Synthetic Control Model 4 (SCM 4)					
Nigeria	0.749	Myanmar	0.014	Eswatini	0.001
Pakistan	0.077	Dominica Rep.	0.012		
Djibouti	0.055	Costa Rica	0.008		
Papua New Guinea	0.053	St. Vincent Grd.	0.003		
Egypt, Arab Rep.	0.025	Jamaica	0.001		
Synthetic Control Model 5 (SCM 5)					
Lao PDR	0.368	Papua New Guinea	0.018	South Africa	0.002
Nigeria	0.193	St. Vincent Grd.	0.004	Bangladesh	0.002
Paraguay	0.168	China	0.003	Bhutan	0.002
Pakistan	0.149	Albania	0.002	Djibouti	0.002
Egypt, Arab. Rep.	0.025	Argentina	0.002	Botswana	0.002
Synthetic Control Model 6 (SCM 6)					
Nigeria	0.745	Morocco	0.004	Armenia	0.003
Botswana	0.030	Kenya	0.003	India	0.003
Djibouti	0.030	Zimbabwe	0.003	Lao PDR	0.003
Egypt, Arab. Rep.	0.004	Sudan	0.003	Bhutan	0.003
Mauritius	0.004	Tunisia	0.003	Bangladesh	0.003
Synthetic Control Model 7 (SCM 7)					
Nigeria	0.803	Dominica Rep.	0.010		
Pakistan	0.063	St. Vincent Grd.	0.004		
Papua New Guinea	0.047	Djibouti	0.003		
Egypt, Arab Rep.	0.022	Paraguay	0.002		
Costa Rica	0.013	Jamaica	0.001		

4 Heterogeneity in credit market access: additional results

4.1 With respect to commercial creditors' lawsuits

Table S.C10: Commercial Lawsuits face by HIPCs of interest

<u>Cameroon</u>		<u>Niger</u>	
2005	Winslow Bank - Bahamas	2005	Taiwan court judgment to pay
2005	Del Favero Spa - Italy	2014	Taiwan
2005	<i>Sconset - BVIs</i>	2015	Taiwan
2005	<i>Grace Church Capital - Cayman Isl.</i>	<u>Sierra Leone</u>	
2007	Winslow Bank - Bahamas	2005	J&S Franklin Ltd - UK
2007	Del Favero Spa - Italy	2005	<i>UMARCO - France</i>
2007	<i>Sconset - BVIs</i>	2005	<i>Executive Outcomes International - SAF/Panama</i>
2007	<i>Grace Church Capital - Cayman Isl.</i>	2005	<i>Chatelet Invest - Sierra Leone</i>
2007	<i>Antwerp - BVIs</i>	2005	<i>Scancem International - Norway</i>
2007	<i>Rumbold International Ltd</i>	2007	J&S Franklin Ltd - UK
2007	<i>Greylock Global Opportunities - USA</i>	2007	<i>UMARCO - France</i>
<u>Ethiopia</u>		2007	Executive Outcomes International - SAF/Panama
2007	<i>Kintex - Bulgaria</i>	2007	<i>Chatelet Invest - Sierra Leone</i>
2007	<i>Yugoimport - Serbia</i>	2007	Scancem International - Norway
2010	<i>Kintex - Bulgaria</i>	2014	International Construction Company
2013	<i>Kintex - Bulgaria</i>	2015	International Construction Company
2014	<i>Kintex - Bulgaria</i>	<u>Tanzania</u>	
2015	<i>Kintex - Bulgaria</i>	2014	Celtic Capital
<u>Guyana</u>		2015	Celtic Capital
2007	Citizens Bank Guyana Inc - Guyana	<u>Uganda</u>	
2007	Booker PLC - UK	2005	<i>Banco Arab Espagnol</i>
2007	Export services incorporated - USA	2005	<i>Transroad Ltd</i>
<u>Honduras</u>		2005	<i>Industry of Construction - Yugoslavia</i>
2005	<i>Bago Laboratories - Argentina</i>	2005	<i>Sours Fab Famous RZ</i>
2007	<i>Bago Laboratories - Argentina</i>	2005	<i>Shelter Afrique - Kenya</i>
2010	<i>Bago Laboratories - Argentina</i>	2005	Arab Fun for External Development - Iraq
2013	<i>Bago Laboratories - Argentina</i>	2007	Banco Arab Espagnol
<u>Liberia</u>		2007	Transroad Ltd
2010	Hamsah Investment - BVIs	2007	Industry of Construction - Yugoslavia
2010	Wall Capital	2007	Sours Fab Famous RZ
<u>Mozambique</u>		2007	Shelter Afrique - Kenya
2005	<i>Yugoimport - Former SFR Yugoslavia</i>	2007	<i>Arab Fun for External Development - Iraq</i>
<u>Nicaragua</u>		2010	<i>N/A - Irak</i>
2005	LNC Investments - USA	2013	<i>N/A - Irak</i>
2005	GP Hemisphere Associates	2014	<i>N/A - Irak</i>
2005	Van Eck Emerging Markets	2015	<i>N/A - Irak</i>
2007	LNC Investments - USA	<u>Zambia</u>	
2007	GP Hemisphere Associates	2005	Connecticut Bank of Commerce - USA
2007	Greylock - BVIs	2007	Connecticut Bank of Commerce - USA
2007	Hamsah Investment - BVIs	2007	<i>Donegal International Limited - BVIs</i>
2007	<i>Inex Belgrade - Serbia</i>	2013	ABSA Limited Sab
2007	<i>14 october Krusevac</i>		
2007	<i>IMT Belgrade - Serbia</i>		
2007	<i>DP FAP Famos</i>		
2007	<i>MPK Corporation</i>		

Source: HIPC Initiatives Status of Implementation Documents - IMF/IDA. Notes: Lawsuits in *italic type* refer to lawsuits having reached a settlement. Lawsuits in normal type refer to those still ongoing (most of them being in appeal).

4.2 With respect to global credit cycles

Table S.C11: Global Financial environment and private capital flows to developing countries

Control Group: All DCs	(1)	(2)	(3)	(4)
POST-HIPC	Post-Interim Period (at least +6 years after)			
Dep. Var. (% of GDP)	<i>Priv._Com._{i,t}</i>			
	VIX		LIBOR	
CYCLE _t	Asc. Phase	Desc. Phase	Asc. Phase	Desc. Phase
OLS-DiD				
POST-HIPC _{<i>i,t</i>}	0.696* (0.363)	0.312 (0.290)	0.760** (0.307)	-0.132 (0.268)
POST-HIPC X CYCLE _{<i>i,t</i>}	-0.153 (0.283)	0.728* (0.356)	-0.837*** (0.250)	0.931*** (0.287)
Constant	-7.098 (4.630)	-7.862 (4.599)	-7.358 (4.585)	-7.539 (4.633)
Observations	1,433	1,433	1,433	1,433
No. of country	88	88	88	88
Prob ≥ F (p-val)	0.007	0.009	0.004	0.005
Controls	Yes	Yes	Yes	Yes

Notes: Columns (2) to (2) expose effect of debt relief conditional on the VIX index's financial cycle (ascending vs. descending phase) while columns (3) to (4) do the same with respect to the LIBOR (3 months) rate. We study changes in disbursements and commitments to private creditors (banks and others) around the interim period. Note that CYCLE_t is common to all countries included in the sample and therefore not included to the regression since its contribution is captured by year-fixed effects. Fixed effects and control variables are similar to those used so far. F-stat are not reported in order to save space but are all significant at the 5% level. Note that results with respect to alternative control groups as defined in section 4.3 have not been reported in order to save space but are similar to those reported above. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

4.3 With respect to economic performances in HIPC's

Table S.C12: Investigating heterogeneity in HIPC's market access

Control Group: All DCs	(1)	(2)	(3)	(4)
POST-HIPC	Post-Interim Period (at least +6 years after)			
Dep. var. (% of GDP)	<i>Priv..Bk._{i,t}</i>			
VAR:	<i>GDP_G_{i,t}</i>	<i>RES_RENT_{i,t}</i>	<i>DURABLE_{i,t}</i>	<i>HAIRCUT_i</i>
OLS-DiD				
POST-HIPC _{<i>i,t</i>}	0.287*** (0.077)	0.409** (0.154)	0.182** (0.081)	0.295*** (0.075)
POST-HIPC _{<i>i,t</i>} X VAR	0.011 (0.008)	-0.005 (0.008)	0.014 (0.008)	0.090 (0.106)
VAR	-0.006 (0.007)	0.006 (0.008)	-0.006* (0.003)	
Constant	-5.673** (2.202)	-5.993** (2.283)	-5.982*** (2.259)	-5.938** (2.295)
Observations	1,732	1,732	1,732	1,732
No. of country	89	89	89	89
R-squared	0.068	0.068	0.070	0.068
Prob ≥ F (p-val)	0.035	0.046	0.029	0.045

Notes: Columns show results for a sample of 24 HIPC's that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. *GDP_G_{i,t}* denotes GDP growth rate, *RES_RENT_{i,t}* the resource rents as a share of GDP, *DURABLE_{i,t}* the government's durability (number of years in power) and *HAIRCUT_i* the amounts of haircut on external debt owed to private creditors prior to 2000 (which therefore only varies across countries, not over years). All regressions include the same set of fixed effects and control variables used so far. F-statistics are statistically significant at the 5% level. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

Table S.C13: Effects of debt relief programs' conditionality on HIPCs' market access

Control Group: All DCs	(I)	(II)	(III)	(IV)	(V)	(VI)
POST-HIPC	Post-Interim Period (at least +6 years after)					
Dep. var. (% of GDP)	<i>Priv._Bk._{i,t}</i>					
VAR:	Interim period average growth rate of:					
	GDP_G _i	GFCF_PRIV _i	TAX _i	INFL _i	TOT.RES _i	FDI_INFL _i
OLS-DiD						
POST-HIPC _{i,t}	0.405*** (0.123)	0.322*** (0.085)	0.274*** (0.087)	0.298*** (0.078)	0.364*** (0.106)	0.359*** (0.103)
POST-HIPC _{i,t} X VAR _i	-0.000 (0.001)	0.023* (0.012)	0.006 (0.007)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Constant	-1.808 (1.421)	-1.619 (1.549)	-1.584 (1.543)	-1.712 (1.420)	-1.796 (1.427)	-1.646 (1.494)
Observations	1,732	1,627	1,697	1,732	1,693	1,732
Number of country	89	83	87	89	87	89
R-squared	0.071	0.070	0.068	0.070	0.068	0.068
Prob ≥ F (p-val)	0.043	0.031	0.029	0.036	0.002	0.002

Notes: Columns show results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. Each regression includes control variables used so far. F-stat are not reported in order to save space but are all significant at the 1% level. GDP_G stand for GDP growth rate, GFCF_PRIV. for gross fixed capital formation (Private sector), TAX for tax-to-GDP ratio (including social contribution), INFL. for inflation, TOT.RES. for total foreign exchange Reserve, and FDI_INFL for foreign direct investment (inflows). All regressions include the same set of fixed effects and control variables used so far. F-statistics are statistically significant at the 5% level. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels.

4.4 With respect to ODA provision

Table S.C14: Substitutability with traditional official flows.

Control Group: All DCs	(1)	(2)	(3)	(4)	(5)	(6)
POST-HIPC:	Post-Interim Period (at least +6 years after)					
Dep. var. (% of GDP)	<i>Priv._Bk._{i,t}</i>					
$VAR_{i,t}$	NAT_OFF		BILAT		MULTI	
OLS-DiD						
POST-HIPC _{<i>i,t</i>}	0.368** (0.173)	0.479** (0.169)	0.409** (0.181)	0.445*** (0.153)	0.371* (0.193)	0.491** (0.176)
POST-HIPC X $VAR_{i,t}$	-0.004 (0.004)	-0.007 (0.007)	-0.021 (0.013)	-0.024 (0.019)	-0.013 (0.013)	-0.030 (0.020)
$VAR_{i,t}$	-0.009 (0.007)	-0.015 (0.010)	0.002 (0.010)	-0.012 (0.008)	-0.009 (0.015)	0.004 (0.007)
Constant	0.353*** (0.052)	-1.533 (1.489)	0.363*** (0.059)	-0.631 (1.630)	0.362*** (0.058)	-0.527 (1.663)
Observations	2,301	1,732	2,022	1,561	2,022	1,561
No. of country	101	89	89	80	89	80
Prob \geq F (p-val)	0.037	0.031	0.024	0.071	0.029	0.070
Controls	No	Yes	No	Yes	No	Yes

Notes: Columns show results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. NAT_OFF denotes net aid transfers from official donors (bilateral -BILAT- and multilateral -MULTI- donors) and is expressed in percentage of the beneficiary country's GDP. All regressions include the same set of fixed effects and control variables used so far (when entered). Regression with bilateral and multilateral net aid flows control for multilateral and bilateral aid flows, respectively. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels (+ at 10.8% level).

Table S.C15: Substitutability with traditional official flows.

Control Group: All DCs	(1)	(2)	(3)	(4)	(5)	(6)
POST-HIPC:	Post-Interim Period (at least +6 years after)					
Dep. var. (% of GDP)	<i>Priv._Com._{i,t}</i>					
$VAR_{i,t}$	NAT_OFF		BILAT		MULTI	
OLS-DiD						
POST-HIPC _{<i>i,t</i>}	0.737** (0.304)	0.946** (0.381)	0.690** (0.326)	0.651 (0.402)	0.877** (0.374)	0.937** (0.424)
POST-HIPC X VAR _{<i>i,t</i>}	-0.021* (0.010)	-0.057*** (0.018)	-0.022 (0.029)	-0.072 (0.053)	-0.049** (0.023)	-0.113*** (0.036)
VAR _{<i>i,t</i>}	-0.007 (0.009)	-0.026** (0.010)	0.005 (0.017)	-0.030 (0.022)	-0.025 (0.023)	-0.021 (0.017)
Constant	1.048*** (0.142)	-0.152 (4.134)	1.107*** (0.152)	1.057 (4.427)	1.087*** (0.152)	1.332 (4.451)
Observations	2,301	1,732	2,022	1,561	2,022	1,561
R-squared	0.019	0.055	0.025	0.059	0.025	0.061
No. of country	101	89	89	80	89	80
Prob \geq F (p-val)	0.012	0.000	0.007	0.000	0.007	0.000
Controls	No	Yes	No	Yes	No	Yes

Notes: Columns show results for a sample of 24 HIPCs that have reached their completion point no later than 2009 and of 65 developing countries that did not benefit from debt relief under the Enhanced HIPC initiative. NAT_OFF denotes net aid transfers from official donors (bilateral -BILAT- and multilateral -MULTI- donors) and is expressed in percentage of the beneficiary country's GDP. All regressions include the same set of fixed effects and control variables used so far (when entered). Regression with bilateral and multilateral net aid flows control for multilateral and bilateral aid flows, respectively. Robust standard-errors in parentheses (clustered at both the country- and year-level). ***, ** and * denote significance at 1%, 5% and 10% levels (+ at 10.8% level).

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