DOCUMENT DE TRAVAIL DT/2016-16

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Document de travail UMR DIAL
Novembre 2016

Abstract

Low income countries (LICs) generally have very little access to the international financial markets. In the 1990s, bilateral creditors and international financial institutions started granting LICs debt relief under the Heavily Indebted Poor Countries (HIPCs) initiatives and continued with the more recent Multilateral Debt Relief Initiative (MDRI). Have these debt relief initiatives led official and private creditors to change their lending policy with respect to beneficiary countries? This paper addresses this question using difference-in-differences methodology. Our findings tend to show that official lenders tighten their HIPC financing policy, shortening grace and maturity periods, and reducing the grant element on new loans once debt relief has been provided. We also find that beneficiary governments manage to diversify their financing sources by borrowing more from private creditors once they have completed the HIPC process and have received additional debt cancellations under the MDRI.

Key words: Debt Relief, low-income countries, access to financial markets, concessionality.

Résumé

Cet article évalue l'impact des initiatives d'allègement de dette multilatérale sur les conditions de réendettement extérieur des gouvernements bénéficiaires auprès de créanciers officiels et privés. Les résultats de cette étude indiquent qu'avoir bénéficié des initiatives PPTE (Pays Pauvres Très Endettés) et IADM (Initiative d'Annulation de Dette Multilatérale) conduit les gouvernements concernés à contracter des emprunts officiels comprenant des périodes de grâce et de maturité plus courtes (et donc un « élément-don » plus faible) que s'ils n'avaient obtenu ces annulations de dette. Nos résultats montrent également que les gouvernements bénéficiaires parviennent à emprunter davantage auprès de créanciers privés une fois leur dette annulée. Cependant, des tests additionnels révèlent que cet accès à de nouveaux marchés financiers ne s'effectue qu'après l'octroi des annulations de dette sous l'IADM et que les investisseurs internationaux privés ne s'autorisent donc à prêter aux PPTE qu'une fois la quasi-totalité de leur dette extérieure annulée.

Mots Clés: Annulation de dette, Pays à faible revenu, Financement international, Concessionalité.

JEL Code: C23, F34, O16

1 Introduction

Many low income countries (LICs) have been granted debt relief by bilateral creditors and international financial institutions under the HIPC (Heavily Indebted Poor Countries) initiatives since 1996, and the MDRI (Multilateral Debt Relief Initiative) since 2005. How have those debt relief initiatives impacted on HIPC financing? Have they led creditors to change their lending policies, deterring them from continuing to lend to LICs or prompting them to change their conditions? This paper sets out to answer these questions with an empirical assessment of the impact of debt relief on the financing conditions attached to official lending. We also investigate whether these initiatives have helped beneficiary countries access new financing sources such as international financial markets.

Historically, Rawling's Ghana refused HIPC debt relief in the first place, because of fears of subsequent increases in interest rates (although it was the only HIPC country to do so). The same concern lay behind the refusal of Sri Lanka, Indonesia and India to have their debt rescheduled following the tsunamis. Yet can the increase in risk premium and the narrowing of financing opportunities be deemed rational following a debt cancellation? In actual fact, debt relief probably sends a mixed signal. On the one hand, debt relief would not be expected to build confidence because countries unable to repay their debt in the past could be seen as risky borrowers. On the other hand, debt relief improves debt sustainability by creating fiscal space. The surge in bond issues by African countries on the international financial markets appears to provide the answer: investors like countries without debt. In addition, the global economic turmoil of recent years has prompted investors to search for assets with higher returns, such as African bonds. In 2011, Graham Stock, Director of JP Morgan's Research Department on Emerging Countries, explained that the increase in commodity prices, high Chinese demand, and the growing quality of institutions on the continent was improving the appeal of African bonds to investors seeking portfolio diversification with attractive returns.[1] He went on to say that the debt relief initiatives had really improved debt sustainability in those countries as they had reassured investors about the debtor's capacity to pay in the short and medium term.[2]

However, the story is not quite that straightforward. Some bond-issuing countries were not LICs or HIPCs (Kenya and Gabon). The surge might then be due to the "irrational exuberance of the markets" in a situation of historically low interest rates in OECD countries. This increase could also be explained by Africa's dramatically improving economic prospects attracting new financing from emerging countries, in particular China, India and Brazil. Yet some other countries that were HIPCs, such as Ghana and Senegal, appear to have problems borrowing regularly and steadily. In addition, the high interest rates charged by private lenders have raised concerns that loans to Africa might be no other than a new wave of "subprime loans" (Stiglitz and Rashid, 2013).

Bear in mind, however, that even after debt relief, the majority of LIC and HIPC financing remains official (public) financing. As shown by Figure 1 in the appendix, bilateral and multilateral loans account for nearly all external public debt disbursements. And although public financing institutions switched, at least partly, from loans to grants after the 1982 debt crisis, this trend has been reversing since 2006

[1] With spreads on African bonds 400 to 600 basis points higher than on European bonds.
[2] Les Afriques, No. 167, 23 to 29 June, 2011.

due to commitments to increase Official Development Aid (ODA) in a situation of public finance crisis in the donor countries. So it is likely that bilateral creditors, who already agreed to cancel a significant part of the claims they had on HIPCs, are now looking for higher (than before) returns on new loans and are tightening their financing conditions by lowering the level of concessionality. However, such a shift would be expected less from multilateral donors given the rigidity of their lending policy, which remains defined mainly by the economic and institutional features of the beneficiary countries.

We use a difference-in-differences (DID) methodology to investigate whether debt relief provided under the Enhanced HIPC initiative and the MDRI has led official donors to change the lending terms they offer to beneficiary countries. We also look at changes in access to international financial markets, proxied by public debt contracted from private creditors, which could also be affected by the provision of debt forgiveness. We first build a control group of countries as similar as possible from among the HIPCs in order to overcome the usual selection issue with the DID approach. The conditionality of debt relief on certain criteria defined in terms of per capita GDP and public indebtedness is then taken to identify those countries that might have been eligible (or almost eligible) for the initiative, but did not ultimately benefit from it. We also define two other control groups, which control to a certain extent for potential trends in developing countries, or Africa, since most of the HIPCs are Sub-Saharan African countries. The DID estimates include an important set of macroeconomic covariates in addition to country and time fixed effects to help minimize the risk of omitted variable bias. A comparison with the different control groups hence provides external validity to the DID estimates, which show that debt relief leads official donors to tighten their lending policy. However, the results also suggest that debt relief helps beneficiary governments access international financial markets and borrow from private creditors, as public debt contracted from private investors significantly increases after the MDRI. We provide a series of robustness checks designed to rigorously control for the selection issue and sample dependence. They all support our benchmark results.

The rest of this paper is organized as follows. Section 2 presents a brief background on LIC financing and the potential effects of debt relief on concessionality. Section 3 details the data and the HIPC samples used for this study. Section 4 describes our empirical methodology. Section 5 presents the benchmark results and robustness checks. Section 6 concludes.

2 LIC financing and the impact of debt relief

Middle income countries (MICs) have the option of borrowing on international financial markets, but not in their own currency, and borrowing on their own financial domestic market, but only short term. This peculiarity among the emerging economies has been coined "original sin" by (Eichengreen et al., 2002), because it cannot be explained by these economies' "fundamentals". This constraint has been somewhat relaxed since 2003, as some emerging countries have been able to borrow from international investors in their own currency and from their own domestic market for longer periods.

LICs are different. We propose describing their (non-)access to the international financial market as "double original sin", because they cannot usually borrow from international sources even in hard

currency at market conditions. This situation abounded in the 1990s, but double original sin was far from prevalent in the 1970s prior to the 1982 debt crisis. In the early 1980s, LICs turned to public institutions like the development banks to provide them with concessional loans. The development bank set-up had been put in place following the independence of the African States in the early 1960s. The World Bank, for instance, set up its special subsidiary the International Development Association (IDA) in 1960 in order to provide concessional lending to LICs defined as countries with a per capita GNI of less than $1,215 (in IDA's fiscal year 2015). Concessional lending means loans that are "significantly" below the market rate. OECD-DAC defines this as being the case when the present value of the loan, discounted at 10 percent, is less than 75 percent of the face value of the loan (so when the grant element is at least equal to 25 percent of this face value). The rationale behind this institutional set-up is somewhat puzzling, however, because economic theory assumes that returns on investment tend to be much higher in LICs, and so private capital should transit from rich to poor countries ("Lucas paradox"). The wording "double original sin" is thus relevant because, as in the case of "original sin" for emerging countries, there is no rationality behind this financial market behavior. Even when LICs are well managed, they still cannot access the market.

Yet although they are unable to borrow from the international financial markets and benefit from soft lending conditions, LIC governments accumulated large amounts of external debt owed to official creditors through the 1980s and 1990s. Inefficient project loans, poor public management, and defensive lending all contributed to debt stockpiling in LICs, especially Sub-Saharan African countries. Debt relief started with small bilateral decisions, before becoming systematic for bilateral lenders in the Paris Club under the Toronto Treatment (1988) and being extended to 90% to 100% of claims under the Cologne treatment (1999). Multilateral debt was not concerned pre-1996, since it was considered senior and could therefore never be canceled or even rescheduled. However, under the 1996 Heavily Indebted Poor Countries (HIPC) Initiative and the 2005 Multilateral Debt Relief Initiative (MDRI), virtually all the multilateral debt stock held by HIPC countries has been canceled by the multilateral creditors (IMF, World Bank, African Development Bank and Inter-American Development Bank).

Under the HIPC initiative (and especially the Enhanced HIPC initiative launched in 1999), debt relief is conditional on fulfilling each of the steps in the process. First, a country has to fulfil income rank, debt level, and macrostability program implementation criteria to be eligible for the initiative. Once eligible, the country reaches the decision point and is granted cancellations on its debt service. Then, conditional on the implementation of a poverty reduction strategy in the form of the Poverty Reduction Strategy Paper (PSRP), the HIPC reaches the completion point that marks the end of the process and is granted debt relief on a set amount of external public debt stock. The MDRI then cancels the remaining debt stock for LICs that have already reached the HIPC initiative's "completion point".

From the standpoint of international private investors, debt relief may be seen either as a negative signal (incapacity to repay the former debt) or as a positive signal (recovery of a capacity to repay). Which side they come down on will depend on the investors' characteristics, mainly their memory of past defaults and losses, but also their ability to assess the risks in a context that always looks different from the past; the "this time is different" syndrome analyzed by Reinhart and Rogoff (2009).

Official creditors, however, would consider it logical to stop lending to LICs after the debt relief initiatives and to provide them with grants only, thus easing their external financing further. The Bush administration indeed insisted that IDA provide only grants. The outcome is mixed: IDA still provides concessional lending (as does the IMF), but also grants. Yet public lenders and multilateral donors do not have the same objectives and constraints as private investors. They are supposed to meet various objectives at the same time: providing resources for development (disbursing their budget), being profitable or at least financially sustainable (development banks), and promoting economic liberalization (See Mosley et al. (1995) for an analysis of the World Bank on this point). They also face different constraints: they borrow on the international financial market (so they have to protect their rating), but they rely heavily on subsidies for LIC financing. These particularities may explain why public lenders react differently. For instance, countries like Burkina Faso and Mali have been repaying all their debt since 1994, but have also been granted debt relief by multilateral institutions, which sounds surprising.

A further issue that needs to be taken into account is the problem of free rider behavior. If a specific lender or specific group of lenders (such as Paris Club Members) provides debt relief, this may open the door for non-cooperative lenders to enter the scene. China and, to a lesser extent, Brazil, India and other emerging economies may be seen behaving in this way. For instance, the IMF postponed debt relief to the Democratic Republic of Congo (DRC) because the government was considering borrowing large amounts from China, with special arrangements for in-kind repayments. In order to avoid such non-cooperative strategies, Bretton Woods Institutions require that their borrowers refrain from borrowing at non-concessional terms at the same time.

The impact of debt relief has been debated from a theoretical point of view. Debt relief is widely viewed as having positive effects on the beneficiary economy, mainly because it creates fiscal space. The fact of not repaying the debt anymore paves the way for more public expenditure - and, in keeping with the conditions attached to debt relief under the HIPC initiative, better quality public expenditure - but only for countries that were paying their debt service prior to the HIPC initiative. A large body of economic literature has pointed up that high levels of debt can result in a debt overhang, lowering investment and growth (see a survey in Obstfeld et al. (1996)). This view (often termed the Debt Laffer Curve) holds that debt relief should boost investment and growth. This was the rationale behind the HIPC initiative, but not behind the MDRI where all the debt stock is canceled, not just that considered to be overindebtedness. The increase in capital accumulation induced by debt relief could hence boost beneficiary countries' attractiveness and explain, along with other factors, why HIPCs currently contract more debt from private creditors. However, to our knowledge, there is no convincing empirical evidence of the existence of a debt overhang for LICs (Idlemouden and Raffinot, 2005).

Conversely, potential adverse effects have been pointed out such as the possibility that debt relief can result in moral hazard, casting doubt on future repayments. For instance, it has been shown that public aid to developing countries sometimes lowers savings and tax ratios (Clist and Morrissey, 2011). The same might hold true for debt relief, which is a special kind of grant. Indeed, although these concerns may have been overstated (Cassimon and Campenhout, 2008), Ferry (2015) shows that moral hazard behavior that lowers the beneficiary governments' capacity to pay may be at play within the HIPC initiative.

So the impact of debt relief on financing flows is hard to predict. Some concerns have been raised that debt relief may make it impossible to resume borrowing. If that were true, debt relief would then be a mixed blessing as it seems impossible for a country to develop (not to mention emerge) with foreign financing made up of just grants. Surprisingly, as of 2007, some LICs granted debt relief have been able to borrow not just from public institutions and emerging countries, but also from the private international financial market.[3] Low interest rates in OECD countries have made LICs interesting potential borrowers in the eyes of private international investors.[4] Kenya, Tanzania and Zambia have been considering issuing bonds on the international financial market. Ghana has already done so, issuing USD 750 million in Eurobonds (with ten-year maturity and a B+ Fitch rating at 8.5 percent). M. Baah-Wiredu, Ghana's Minister of Finance, stated that this bond issue: "... came as the next logical step after the completion of the HIPC Program and the Poverty Reduction Growth Facility Program with the IMF which classified Ghana as a matured stabilizer."[5] This surge in bond financing is puzzling. Given the mixed past records of those countries, the question might arise as to whether the improvement in their growth prospects is enough to make this debt sustainable. Stiglitz and Rashid (2013) do not believe it and call this surge a new kind of subprime movement. However, the bulk of the LICs' borrowing remains with concessional sources that have switched from loans to grants to a certain extent. This raises another question about the role of debt relief on the financing conditions attached to official lending.

3 Data and HIPCs samples

3.1 Outcomes of interest and their determinants

A look at official borrowing conditions reveals whether multilateral and bilateral creditors, which provide the bulk of the low-income countries' financial resources, change their lending policy in response to the debt relief initiatives. An analysis of borrowing from private creditors, on the other hand, observes whether debt relief is a positive or negative signal for international private investors and changes the likelihood of beneficiary countries contracting this kind of loan.

As regards official borrowing conditions, we collected data from the *International Debt Statistics* (IDS) database and look at the change in average grace period (AGP), average maturity period (AMP), and average grant element (AGE) for new external official debt commitments. However, since the AGE measure in the IDS database only considers the grant element on loans and does not include grants provided to recipient governments, we suggest a broader alternative measure to AGE called AGE_MO, where we include the level of grants (net of debt forgiveness grants). We then use this measure as a dependent variable in our estimates alongside the IDS indicator. This modified measure of the official average grant element is thus computed as follows:

$$AGE\_MO_{i,t} = \frac{Grants_{i,t} + [AGE_{i,t} \times PPG\_OFF_{i,t}]}{PPG\_OFF_{i,t} + Grants_{i,t}}$$

[3] Cf. Figure 1 in the appendix.
[4] See the Economist n24, International Sovereign Bond Hunters On Safari in Africa, 24/12/07
[5] Accra Mail, 12/01/2007

where $Grants_{i,t}$ are grants net of debt forgiveness grants and technical cooperation for country i in period t, $AGE_{i,t}$ is the IDS measure of the official grant element as described above, and $PPG\_OFF_{i,t}$ are official disbursements on public and publicly guaranteed (PPG) debt, which represent a certain extent of official external public debt flows for country i in period t. In addition, we compute the grant element on total new external debt commitments (AGE_MT) across all types of debtor (government and private entities) for all debt contracted from either official or private creditors. This modified grant element on new (total) external debt takes the following form:

$$AGE\_MT_{i,t} = \frac{Grants_{i,t} + [AGE\_TOTAL_{i,t} \times DIS\_EXT_{i,t}]}{DIS\_EXT_{i,t} + Grants_{i,t}}$$

with $AGE\_TOTAL_{i,t}$ being the average grant element on total external debt for country i in period t, and $DIS\_EXT_{i,t}$, the disbursements on external long-term debt (maturity over one year) contracted by country i in period t. With respect to private debt flows, we choose the public and publicly guaranteed debt commitments to private creditors ($PRIV\_CO$) as our variable of interest measured as a percentage of the country's exports.

We then consider a number of control variables in order to observe the debt relief impacts that are conditional on changes to other macro-covariates that might directly affect those of our dependent variables. As implicitly explained above, official borrowing conditions and amounts of public debt contracted from private creditors are influenced by both supply and demand factors. On the demand side, the debtor country's level of development and financing needs may lead the government to ask for different borrowing conditions or seek new financing sources such as international financial markets. On the supply side, the creditor's lending policy is also driven by specific country characteristics, which often differ depending on the type of creditor. Indeed, where the international financial institutions are expected to act in a benevolent and altruistic way, external investors are often thought to be more profitability-driven. Therefore, it is more likely that structural aggregates reflecting the development needs of the debtor countries determine official borrowing conditions, while proxies for capacity to pay or short/medium-run business prospects should explain the level of debt contracted from private creditors. Although it is impossible to pinpoint which effect prevails in the outcome, we can differentiate between control variables that appear to be demand- or supply-side driven in order to identify the factors that affect changes in the dependent variables.

With respect to official borrowing conditions, and in keeping with the literature on aid allocation (Knight and Santaella, 1997; Alesina and Dollar, 2000; Neumayer, 2003), we consider variables that reflect the country's development level to a certain extent and are therefore liable to reflect both the official creditors' supply-side factors and the debtors' financing needs. This first set of control variables includes per capita GDP (in log and constant USD (GDP_PC)), the level of gross fixed capital formation ($GFCF$), the share of agriculture or industry in total value added ($AGRI\_SHARE$, $INDU\_SHARE$), and gross

domestic savings (DOM_SAV). We then also account for macroeconomic aggregates expressing both debtor capacity to pay (or able to significantly affect it) and the debtor's external financing needs. This second cluster of control variables hence comprises the level of foreign exchange reserves (TOT_RESV), and the current account balance net of external grants (CAB). Subsequently, given the increasing attention paid by official lenders to institutional quality (Bird and Rowlands, 2001; Dollar and Levin, 2006; Harrigan et al., 2006), we consider as supply-side control variables the institutional quality of recipient countries using the Polity IV index ($POLIT\_IV$), the indices of Political Rights ($POLIT\_R$) and Civil Liberties ($CIVIL\_L$) from the Freedom House database and, to a lesser extent, the inflation rate (INF) that can reflect the macroeconomic stability of recipient countries and the quality of policy management.

Then, for the private debt commitments, we consider all those variables that have also been identified as determinants of market access by the existing literature (Eichengreen et al., 2002; Sandleris et al., 2004; Aguiar and Gopinath, 2006; Cuadra and Sapriza, 2008; Baldacci et al., 2008; Gelos et al., 2011). In addition, we add in a Theil index of export diversification (EXP_DIVERS) which provides a measure of the debtor country's vulnerability to external shocks. We also consider the GDP growth rate (GDP_GROWTH) and the total population (POP) of the debtor country, which can reflect respectively business prospects in the country, the potential domestic market, and even the reserve of taxpayers who could help pay the debt back. Lastly, we occasionally add the rent resource as a share of GDP (RES_RENT) in order to control for private debt targeting solely resource-rich countries. Descriptive statistics for the entire sample, period coverage and data sources are found in Table 1 in the Appendix.

3.2 Temporal depth and HIPCs sample

Before turning to the identification strategy, we define the sample of HIPCs considered for the study. One important feature of this paper is that, given the multilateral debt relief initiatives that occurred in the early and mid-2000s, we now have enough temporal depth to observe the potential effects of these programs in beneficiary countries. However, although the Enhanced HIPC initiative was launched in 1999, some countries only benefited from it later on because they did not meet the required eligibility criteria at the time. So to properly observe the impacts of debt relief in recipient countries, our sample needs to exclude countries that entered the HIPC initiative late. This prevents us from considering Afghanistan, the Central African Republic, Liberia, Togo, Cote d'Ivoire, and Comoros in this study. Haiti is also excluded because of the 2010 earthquake that prompted huge amounts of foreign aid (both public and private), which could be wrongly attributed to the debt relief initiatives.

Given that our dataset ends in 2012, we decide to keep HIPCs for which data are available for at least six years after a debt relief event. As mentioned in the introduction, the HIPC initiative is a stepwise process: decision point, completion point, and interim period (the period between the decision and the completion point). We therefore define two debt relief events in this paper: the decision point, which represents the entry into the HIPC process, and the interim period, which reflects the entire period during which HIPCs receive debt cancellations. The restriction on the years available after the debt relief event means that we consider different HIPC samples depending on the HIPC initiative step we are focusing on. If we consider the impact of having reached the decision point, our sample can include

28 HIPCs that reached their decision point no later than 2006. However, if we consider the entire HIPC process or the interim period (from entry to exit), we can only consider 21 HIPCs that reached their completion point no later than 2006 and for which records are thus available six years after the end of the debt relief process. The overall period of study therefore runs from 1992 to 2012. Table 2 in the Appendix presents the different samples of HIPCs for this study.

4 Empirical Strategy

4.1 Reasons for the Difference-in-Differences approach

Our empirical assessment of the impacts of debt relief on borrowing conditions and private debt commitments in beneficiary countries uses a difference-in-differences (DID) approach which, with respect to the HIPC initiative, means that we estimate the following model:

$$Y_{i,t} = \alpha + \delta HIPC_i + \phi Post_t + \beta HIPC_i \times Post_t + \gamma Z_{i,t} + \epsilon i, t$$

where $Y_{i,t}$ is the dependent variable for country i in year t, $Z_{i,t}$ is the set of control variables for country i in year t, $HIPC_i$ is a dummy variable that takes 1 if the country i is an HIPC and 0 otherwise, $Post_t$ is a dummy variable that takes 1 for the year t the HIPCs reach their debt relief event and for all the subsequent years (the dummy is thus equal to 0 in all years prior the debt relief event), and $HIPC_i \times Post_t$ is an interaction term that takes 1 for the HIPC i that is in its post-debt relief event period in t. However, this specification cannot be estimated since it is impossible to define a $Post$ period for control group countries since HIPCs reached their debt relief event at different dates. Therefore, we take another commonly-used DID specification where we replace the HIPC dummy with country fixed effects ν_i, and the $Post$ variable with time fixed effects δ_t. The inclusion of country fixed effects rather than a dummy for the HIPCs addresses the countries' unobservable heterogeneity better. Considering the dummy for HIPCs only implicitly assumes that the treatment group is homogenous, whereas HIPCs can be significantly different from each other. This model therefore takes the following form:

$$Y_{i,t} = \alpha + \nu_i + \delta_t + \beta HIPC_i \times Post_t + \gamma Z_{i,t} + \epsilon i, t \quad (1)$$

So when taking the decision point as debt relief event, the interaction dummy $HIPC_i \times Post_t$ is equal to 0 in the years prior to the decision point and 1 in the years after it. However, taking the interim period as the debt relief event means setting this interaction dummy to 0 for the years prior to the decision point and 1 for the years after the completion point (after the exit point from the HIPC process). Observations between the decision and the completion point are thus intentionally omitted (replaced with missing values). We can hence compare the change in the outcome variables before and after the HIPC process, regardless of what happens during the interim period, to see whether changes in lending policy last even after full and irrevocable debt relief has been granted.

There are a number of reasons for using the DID strategy. First, this specification can study the impact of debt relief on treatment countries compared with control group countries, which are supposed to be similar enough to the treatment group to be deemed good counterfactuals. This approach hence analyzes the DID coefficient as the impact of having benefited from the HIPC initiative compared with the situation where beneficiary countries would have not been granted debt relief. This provides external validity to the results.

Second, the DID specification includes time fixed effects, which control for trends in dependent and explanatory variables that could be shared by both treatment and control group countries, which would produce fallacious regressions if not controlled for. Given that we are looking at the development of borrowing conditions and private debt flows, these time fixed effects capture global macroeconomic trends that influence changes in the dependent variables such as the overall low interest rate level in OECD economies, the emerging countries' slowdown, and even fluctuations in international commodity prices. All these "push factors" influencing private investors' decisions to redirect capital flows towards developing countries are therefore taken into account by time fixed effects, which reduces the risk of omitted variables bias. Lastly, since the beneficiary countries did not all enter the HIPC process in the same year, the DID approach includes in the control group future HIPCs that are even closer in terms of economic characteristics to the treatment group countries since they are going to be treated in the subsequent periods. However, when included in control groups designed to show that debt relief impacts are not due to trends specific to developing or African countries, future HIPCs marginally "pollute" the control for potential income-group and geographical trends.

4.2 Searching for relevant counterfactuals

Although increasingly used in applied macroeconomics, the use of DID estimators is often justified by the existence of a natural counterfactual which, at macro-level, is rare not to say non-existent. Nevertheless, since benefiting from the HIPC initiative is determined by eligibility criteria, some countries can be found that met these conditions, but ultimately did not benefit from this initiative. Yet if these countries were eligible in the early 2000s, they probably had an offer to join the HIPC initiative alongside current HIPCs. Therefore, given the inability to force a country to benefit from this program, the simple fact that they refused the HIPC initiative makes them different from the treatment group. We nevertheless put it that the counterfactual selection process reduces this selection bias without completely ruling it out.

As explained above, a country is eligible for the HIPC initiative if: (i) it is ranked as a low-income country (LIC) by the World Bank classification; (ii) it is IDA-eligible only, meaning that the country's government can only borrow from the concessional window of the World Bank (the International Development Association); (iii) the government has agreed to a macro-stability program defined by the World Bank and the IMF; and (iv) if the IFIs consider the external public debt (in net present value) as unsustainable at over 150% of the country's exports. A relevant control group should thus comprise countries that met these criteria (more or less strictly), but which did not benefit from this debt relief initiative.

Consequently, we define our benchmark control group as the "narrow" control group including those countries which, in the five years before the decision point for each HIPC cohort, had a World Bank

ranking as an LIC for at least three years and posted an external public debt in face value of over 170% of their exports. Although we do not specifically look at the application of the macro-stability program and the World Bank borrowing arrangements for our benchmark control group countries, we know that LICs are constrained to borrow from the IDA window and that borrowing is frequently accompanied by the application of a macro-stability program. In addition, in keeping with the paper by Chen et al. (2008) that uses an event-study methodology to identify the effects of civil wars on several macroeconomic outcomes, we also consider an "extended" control group including countries classified as an LIC at least once in the five years preceding the decision point for each HIPC. This controls for a potential trend among developing countries (both LICs and LMICs). Lastly, since 33 of the 39 HIPCs are African countries, we also define a control group of non-HIPC African countries also classified as an LIC at least one year in the five years prior to the decision point. This controls for a potential trend in Sub-Saharan Africa, to a certain extent. Table 3 in the Appendix presents the composition of the different control groups.

4.3 Counterfactual suitability

Figure 2 shows the evolution of external public debt for HIPCs, the "narrow" control group and our two other control groups based on the HIPC initiative occurrence year. It is clear that the impact of debt relief on HIPCs (i.e. the treatment on the treated) has been efficient since it significantly helped to reduce the debt-to-exports ratio. We also notice that our "narrow" control group is the control group with the highest average indebtedness level of all our, although it remains significantly lower than the HIPCs (as shown by Table 4 in the appendix). Table 4 also shows that, although the "narrow" control group returns the figures closest to the HIPCs in terms of eligibility criteria for the Enhanced HIPC initiative (in the years preceding the decision point), there is a significant ex-ante difference when it comes to the other economic features (which we moreover use as macro-covariates in the DID estimates). Nevertheless, on several covariates (especially those illustrating the level of development), the "narrow" control group remains relatively similar to the HIPC group compared with the "extended" and "African" control groups. Indeed, the economic sector breakdown for the "narrow" control group of countries more or less mirrors the HIPC breakdown, where agriculture accounts for a larger share of GDP than the industrial sector. In addition, HIPCs and "narrow" control group countries appear to contend (on average) with the same structural issues in terms of their external position (current account) and controlling inflation.

Descriptive statistics in Table 5 then show that there is also an ex-ante (i.e. before debt relief) significant difference in our variables of interest between our treatment and our control groups. Although we expected to find such gaps with the "extended" and the "African" control group, differences compared to the "narrow" control group need to be small for a counterfactual to be close enough to the treatment group to be relevant. Yet perfect similarity between two groups of countries is quite unlikely at macro-level. It can nevertheless be observed that the "narrow" control group displays figures that are the closest on average to the HIPC group. The average grace period before debt relief is just ten months longer for HIPCs than for this control group, while the level of commitment to external private creditors is just 1% lower on average. Ex-ante differences in the average grant element (modified or not) and the maturity period are, however, more significant, although figures for the benchmark control group are the closest to

those of the HIPCs.

However, these differences between "treated" and "control" countries are of no concern to us when it comes to identifying the effects of debt relief, since unobserved differences between these two groups are supposed to be captured by country fixed effects in the DID specification. What is important in the DID setting is the hypothesis of common trends in the years preceding the treatment. Indeed 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. To test this common trend hypothesis, we first look at the evolution of our variables of interest over the years before the HIPC process. Figure 3 in the appendix shows that, although HIPCs benefited (on average) from longer grace and maturity periods in the years before the HIPC process, the trend in these variables is similar to the one observed for the three other control groups. The common trend hypothesis also appears to hold for the average grant element and the debt commitments to private creditors, although the ex-ante evolution of both variables is less parallel to trends in the control groups.

Another approach to test for the common trend hypothesis is the placebo test. We propose running an event-study model over the period before each HIPC's decision point (six years). We match one control group with each HIPC cohort, since HIPCs entered the initiative at different dates. Control countries are selected based on the selection criteria we previously defined (for the "narrow", "extended", and "African" control groups). We then create a placebo treatment with the variable $Post\_Placebo_s$ which is equal to 1 for the three years s 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:

$$Y_{i,s} - \bar{Y}_{i,s} = \alpha + \beta Post\_Placebo_s + \nu_i + \epsilon_{i,s}$$

and is estimated for the period [-6; -1] and 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 . The variable $Post_{i,s}$ is a dummy variable that takes 1 for years over or equal to -3, and 0 otherwise, and thus captures the ex-ante difference in outcome variable trends between HIPC and control countries. Table 6 reports the results. We observe that, although the static ex-ante differences are significant, there is no robust difference in the trends displayed by our variables of interest between our treatment and control groups. Moreover, the coefficient for the average maturity period with respect to the narrow control group is statistically significant with a positive sign. This means that if our DID estimates find a negative, significant coefficient for the average maturity period, the debt relief impact is probably underestimated since HIPCs benefited from softening borrowing conditions in terms of the maturity period before the HIPC initiative.

The same argument can be made for the average grace period, the modified grant element, and private debt commitments with respect to the extended control group. Nevertheless, it can be seen that the average grant element (modified or not) was already decreasing for HIPCs prior to the decision point and as compared to the African control group. Therefore, according to the value of the coefficient we find in our DID estimates, the impact of having been granted debt relief should be lowered by the magnitude

of this prior decrease.

[Insert Table 6 here]

5 Results and Robustness Checks

5.1 Benchmark Findings

Table 7 presents the estimates of equation (1) with respect to our three control groups and for our six dependent variables. Looking first at columns (I) to (VI), where the debt relief event is the decision point (i.e. entry into the HIPC process), a significant tightening in official borrowing conditions can be observed for countries that entered the HIPC initiative as compared to countries that did not. Having reached the decision point seems to shorten grace and maturity periods by respectively slightly over a year and a half and five and a half years compared to our benchmark control group. We also note that this shortening of the length of the grace period after the decision point is not due to a downward trend within developing or African countries. This also appears to hold true for the evolution of the average grant element (modified or not), although the African dimension is more questionable from the point of view of our different grant element measures. The reduction in the average grant element is indeed significant compared to the "narrow" and "extended" control groups, but not the African control group (not even marginally significant). This suggests that non-HIPC African countries probably also faced tightened borrowing conditions around the decision point years and that this change in lending policy from official creditors is possibly not due to entry into the debt relief initiative. Conversely, the change in commitment to private creditors is highly significant compared to our three control groups, reflecting broader access to this type of loan for HIPC countries in the years after the decision point.

Focusing then on the impact of having fully benefited from the HIPC initiative, we observe that the results obtained for the decision point are still significant and that the magnitude of the coefficients is even greater. The results in columns (VII) to (XII) suggest that the fact of having fully benefited from the HIPC initiative leads official creditors to shorten the average grace and maturity periods on new loans by just over a year and a half and six years respectively. The average grant element on new official loans also falls more than 7 percentage points compared to our benchmark control group (6.3 percentage points if we consider the AGE measure from the IDS database, and more than 10 if we look at the average grant element across the entire external debt). All these debt relief impacts are robust to the two other control groups, showing that these developments are not driven by potential trends among developing or African countries. These findings thus rule out the doubts we had about the contribution of a potential regional trend for estimates around the decision point.

The reduction in financing concessionality after debt relief might be explained by several factors. First, lenders may decide to alter the composition of their financing by providing more loans than grants, which can reduce the grant element of total financing. Second, lenders may also reduce the grant element on new external debt by increasing the interest rate on their loans. However, these changes in financing

composition and the interest rate level on new loans do not pop up in our data.[6] Yet a reduction in the grant element can also come from the observed changes in maturity and grace periods for HIPCs, which automatically increase the present value of the claims owed to official creditors and thus reduce the grant element on external public debt. Although we do not expect to observe a significant switch in lending policy across the multilateral creditors, since the Bank and the Fund's lending conditions are quite rigid and only vary by debtor country income bracket and ranking in institutions quality, an adjustment by bilateral creditors is likely to happen. Indeed, most of the bilateral creditors which already complied to cancel significant amounts of debt through the HIPC initiative could now ask for higher returns on investment by reducing the grant element in their new loans to HIPCs (especially given the public finance crisis in donor countries). Unfortunately, the IDS does not provide the data to be able to compute the grant element for bilateral and multilateral creditors separately. Yet since our indicators are for official debt (i.e. both multilateral and bilateral debt), we assume the change in lending policy to be driven mainly by bilateral rather than multilateral creditors.

Lastly, the results in the first part of the table suggest that having benefited from the HIPC initiative provides access to new financing sources, since debt commitments to private creditors increase on average by 2.3 percentage points of exports after the HIPC process.

[Insert Table 7 here]

5.2 Sensitivity to benchmark control group

As our first robustness check, we test whether our benchmark results for the narrow control group are robust to the criteria we use to define this control group. One of the features of the Enhanced HIPC initiative compared to the initial HIPC initiative is the reduction of the indebtedness threshold from 250% of exports to 150%. In addition, under the Enhanced HIPC initiative, the debt threshold required for eligibility can be expressed in fiscal terms for highly indebted countries with a high rate of openness, which do not meet the threshold defined in balance of payments terms.

Countries with an external debt of over 250% of their domestic revenues are thus also eligible for the HIPC initiative (subject to the other eligibility criteria such as income ranking, etc.). Therefore, we define another control group (Panel A) including countries with an average external public debt of over 250% of their domestic revenues in the five years before each HIPC cohort's decision point. Panel A includes solely those countries ranked as LICs at least three years in this five-year period. We also define two other control groups (Panel B and C). Panel B comprises countries with a debt-to-exports ratio of over 170% in the five years before the decision point for each HIPC cohort, regardless of their income ranking. This control group therefore includes only highly indebted countries. Panel C, however, includes countries constantly ranked as LICs in the five years preceding the decision point for each HIPC cohort, regardless of their indebtedness level, and hence only considers poor countries. Table 8 in the Appendix presents these alternative samples.

Table 9 presents results with these alternative control groups. We observe that having reached the

[6] Not reported in order to save space.

decision point leads official creditors to shorten both the average grace and maturity periods on new public external debt. In addition, results also suggest that the achievement of the decision point (and the entire HIPC process) is followed by a reduction in the average grant element on new official claims, although this effect is less robust when considering the modified AGE measure.

The increase in commitments to private creditors is also supported by these robustness checks since the coefficients on debt commitments to private creditors are positive and significant across all control groups. As regards the impact of the overall initiative, we note that, here again, the previously obtained results are robust. Benefiting from the entire HIPC process appears to shorten the average grace period by almost 2 years, the average maturity period by 5 to 7 years, and the modified average grant element by at least 7.3 percentage points. In addition, the post-debt relief period also features a significant acceleration in debt commitments to private creditors with a significant increase of some 2 percentage points of exports.

[Insert Table 9 here]

5.3 Falsification tests

Finally, in a last check on the robustness of our benchmark results, we run falsification tests where "treated" countries (HIPCs) have been randomly drawn from our pool of developing countries. The purpose of this additional test is to see whether our results capture some sort of spurious correlation between a given group of countries and the several dependent variables we consider, or whether the effects we observe are really HIPC-specific, which would strengthen the reliability of our results.

We thus randomly draw samples of countries that we now consider as if they were HIPCs. We keep the sample size identical to that observed for each HIPC cohort. For instance, and for the 2000 HIPC cohort, we randomly select 22 countries and then consider these countries as if they had benefited from debt relief under the Enhanced HIPC initiative from 2000 on. We then randomly select two countries and define their treatment period from 2001 on, and so on for the other HIPC cohort. We finally obtain a sample of 29 "random HIPCs", which have been randomly chosen from our pool of 105 developing countries. Note that, since we randomly draw countries for our global pool of developing countries (including HIPCs), some countries randomly selected as "treated" may be "true" HIPCs. We then run the classic DID specification, as presented by equation (1), on the newly defined "treatment" group. We replicate this random draw and the DID estimate 500 times, and then compute the average value (and standard error) of the coefficient of interest, i.e. the interaction term between the HIPC dummy and the Post variable. We expect to observe non-significant results (on average over the 500 replications), which would indicate that the effect of debt relief that we observed on the different outcome variables is indeed specific to HIPCs.

We adopt this approach to both checking the effect of having reached the decision point and having fully benefited from the entire interim period. Table 10 reports the results for both effects, and also when we consider 300 replications instead of 500. We observe that, when the "treatment" group is randomly selected, having reached the decision point or having fully benefiting from the interim period produces no change in the different outcome variables. In total, only 5% of the 500 estimates report a statistically

significant coefficient for the interaction term between the $HIPC$ dummy and the $Post$ variable.

These tests thus reinforce the robustness of our benchmark findings by showing that, when the "treatment" group does not consider "true" HIPCs, neither "debt relief" nor the period associated with it has any observed effect on financing conditions.

[Insert Table 10 here]

5.4 Sensitivity to sample composition and outliers

Debt commitments to private creditors are quite low on the whole in developing countries, especially since the debt crisis of the early 1980s, although amounts are currently increasing. Public debt contracted from private creditors tends to be short- to medium-term debt and is thus frequently regarded as opportunistic behavior on the part of the creditors. These capital inflows may be driven by the existence of natural resources that, in developing countries, remain largely controlled by the government and that on the whole prompt medium-/long-term investment from abroad. Yet they can also be fueled by short-run positive economic performances that create incentives for external private investors to settle in the country, temporarily or not. Consequently, in order to avoid wrongly attributing the increase in these debt commitments to debt relief, we run the DID specification excluding each HIPCs from the sample one by one. This enables us to see whether the positive impact of debt relief on public debt contracted from private creditors is a "true" average effect actually due to debt relief or whether this surge is merely induced by one HIPC's economic situation leading its government to contract large amounts of this type of debt.

The results in Table 11 show that the positive effect of debt relief on debt commitments to private creditors is not driven by an outlier that may have contracted unusual amounts of these debts. The magnitude of the coefficients is similar to that obtained by previous estimates, showing that HIPC governments continue to contract debt from private creditors after they exit the HIPC process. However, data for Ethiopia and Ghana reveal that they contracted impressive amounts of external debt from private creditors following the HIPC initiative. Therefore, to be sure that the debt relief effect is an average effect across HIPCs, we run the model excluding both Ethiopia and Ghana from the sample, which ultimately does not change the results.[7] We thus conclude that having benefited from the HIPC program on average increases access to private capital for beneficiary governments.

[Insert Table 11 here]

5.5 Which debt relief program triggers loans from private creditors?

The above results show that debt cancellations lead recipient countries to contract more debt from private creditors compared to if they had not been granted debt relief. This could now raise the question as to which step of the HIPC process sends the signal that prompts international investors to lend to HIPC governments. Being eligible for the HIPC initiative could be interpreted by private creditors as

[7] Not reported in the Table to save space but available on request upon the authors.

future debt cancellation and could thus decide them to lend more to HIPCs even before the debt relief process ends. Yet given the low creditworthiness of HIPCs, private creditors could possibly also wait until the end of the debt relief process, i.e. the completion point, before lending to HIPC governments. However, given that HIPC debt is reduced, but still significant following the HIPC process, some may even postpone their first loans until after the MDRI in order to have a debtor with a clean balance sheet, hence ensuring future repayment of their claims. Therefore, in keeping with Papaioannou and Siourounis (2008) and Ferry (2015), we decide to estimate the following equation to see which step of the HIPC process fosters lending by private investors:

$$Y_{i,t} = \alpha + \nu_i + \delta_t + \beta_1 HIPC_i * D1_{i,t} + \beta_2 HIPC_i * D2_{i,t} + \beta_3 HIPC_i * D3_{i,t} + \gamma Z_{i,t} + \epsilon_{i,t} (2)$$

where $D1$ is a dummy taking one for the 4 years preceding the decision point, and zero otherwise. β_1 approximates the announcement effect of the HIPC initiative launched in 1996, i.e. four years before the first HIPC entered the initiative. The $D2$ variable is a dummy equal to 1 for the years from the decision point to the completion point (i.e. for the interim period years). Lastly, $D3$ is a dummy that takes the value 1 for the years after the completion point. We alternately estimate this model using a dummy $D2$ that covers all years from the decision point to the MDRI (i.e. including the years between the completion point and the MDRI), and a dummy $D3$ equal to 1 for all years in the post-MDRI period. Comparisons between these two specifications reveal whether private creditors react immediately after the HIPC initiative completion point or whether they prefer to await subsequent debt cancellations under the MDRI before lending to HIPC governments

We schematize these two potential cases in figures 4 and 5 in the appendix. Figure 4 presents the situation where private creditors start to lend to HIPC governments as soon as the countries complete the HIPC process. In this scenario, coefficient β_2 of equation (2) should not be statistically significant if we consider period $D2$ as the interim period. However, if $D2$ is defined as the period running from the decision point through to the MDRI (period drawn in light gray below the time arrow), coefficient β_2 should be significantly different from the baseline. In the second case, where private investors wait until the MDRI before lending, β_2 should not be significantly different from the baseline period where the $D2$ period runs either through to the completion point or the MDRI. Note that if an increase in debt commitments is short term instead of long lasting as schematized in figures 4 and 5, the results should be the same except for the β_3 coefficient if the temporary increase occurs after the completion point and if $D2$ represents the period between the decision point and the MDRI. In this scenario, β_2 should still be significantly different from the baseline period, but β_3 should not.

Columns (I) to (II) and (V) to (VII) in Table 12 report β_1, β_2, and β_3 model 2 coefficients when the $D2$ dummy covers the interim period. The results show that debt commitments to private investors increase during period $D3$, i.e. after the completion point. This result is robust across the different control groups we have used as it is to the choice of control variables. However, looking at columns (III) to (IV) and (VII) to (VIII), the results when $D3$ represents the post-MDRI period are similar to those above. This means that the increase in debt commitments to private creditors occurs, on average, at the

end of the period of study and therefore after the MDRI. International investors thus seem to wait until the HIPCs benefit from the entire debt relief package (cancellations under the HIPC initiative plus those granted by the MDRI) and display more than sustainable levels of debt before lending to their respective governments.

[Insert Table 12 here]

6 Conclusion

This paper shows that the debt relief initiatives did indeed affect HIPCs' borrowing conditions. The findings of our DID strategy, where we provide external validity to our results with the use of different control groups, suggest that having benefited from the Enhanced HIPC initiative leads official lenders to tighten their lending conditions by shortening both grace and maturity periods on new loans. This tightening of borrowing conditions consequently reduces the grant element on new official external public debt for HIPCs. Moreover, given the rigidity of multilateral donors' financing policies, we suspect this tightening of lending conditions on new loans to be driven by bilateral creditors seeking higher returns on their investments, especially in view of the public finance crisis in the OECD countries.

As regards other potential sources of financing, our study also reveals that HIPCs manage to access the international financial markets once they have been granted full, irrevocable debt relief. As shown by the results in Section 5.5, HIPCs contract more debt from private creditors after they have benefited from debt cancellations under the MDRI (i.e. once all their remaining multilateral debt stock has been canceled).

In sum, it appears that the positive impact of debt cancellations on debt sustainability leads official creditors to propose financing to HIPCs on terms closer to "real market" conditions than before. These initiatives have also driven up the financing opportunities by making borrowing on the international financial markets accessible for HIPCs historically excluded from them. In a way, then, the debt relief initiatives have helped relieve the "double original sin" that weighed on HIPCs prior to these initiatives.

Nevertheless, a close eye should be kept on this new borrowing dynamic to avoid future unsustainable debt levels. As detailed above, debt to private creditors is often associated with high interest rates, which can easily lead to repayment issues. The 2015 IMF *Regional Economic Outlook* reports that some HIPCs such as Zambia, Senegal, Ghana, Gambia, and Malawi are expected to reach a debt-to-GDP ratio in 2016 twice that they posted just after the MDRI. Even more worrying is the fact that some HIPCs such as Mozambique are suffering from the fall in international commodity prices and are already experiencing repayment difficulties. Stiglitz may have got it right, again.

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Appendix

Table 1: Descriptive Statistics - Whole Sample (114 DCs) [1992-2012]

Variables	Source	Unit	Mean	Std. Dev.	Obs.	% missings
Dep. Var.						
AGP	IDS 2015	years	6.181	3.269	2218	2.719
AM	IDS 2015	years	23.456	12.297	2219	2.675
AGE	IDS 2015	in %	54.251	19.821	1985	12.938
AGE_MO	authors' comput.	in %	71.764	21.464	1987	12.850
AGE_MT	authors' comput.	in %	64.362	26.276	2214	2.895
PRIV_CO	IDS 2015	% of exports	2.938	8.905	2129	6.623
Control var. Demand side						
GDP_PC	WDI 2015	constant USD, log				
GDP_GROWTH	WDI 2015	% change	4.336	6.510	2180	4.385
GFCF	WDI 2015	% of GDP	21.623	8.441	2080	8.772
DOM_SAV	WDI 2015	% of GDP	13.043	16.872	2083	8.640
AGRI_SHARE	WDI 2015	% of GDP	21.978	14.445	2115	7.236
INDU_SHARE	WDI 2015	% of GDP	28.085	11.521	2109	7.500
RES_RENT	WDI 2015	% of GDP	11.473	15.517	2235	1.974
TOT_RESV	WDI 2015	% of GDP	17.493	18.245	2149	5.745
CAB	WDI 2015	% of GDP	-5.077	10.408	2232	2.105
INF	WDI 2015	% change	54.932	795.621	2024	11.228
POP	WDI 2015	inhabitants, log	15.824	1.903	0	2280
Control var. Supply side						
EXP_DIVERS	UNCTAD	[0; 1]	0.721	0.102	1978	13.245
POLIT_IV	Polity IV	[-10; 10]	1.777	6.104	1928	15.438
POLIT_R	Freedom House	[1; 7]	4.189	1.944	2253	1.184
CIVIL_L	Freedom House	[1; 7]	4.116	1.52	2253	1.184

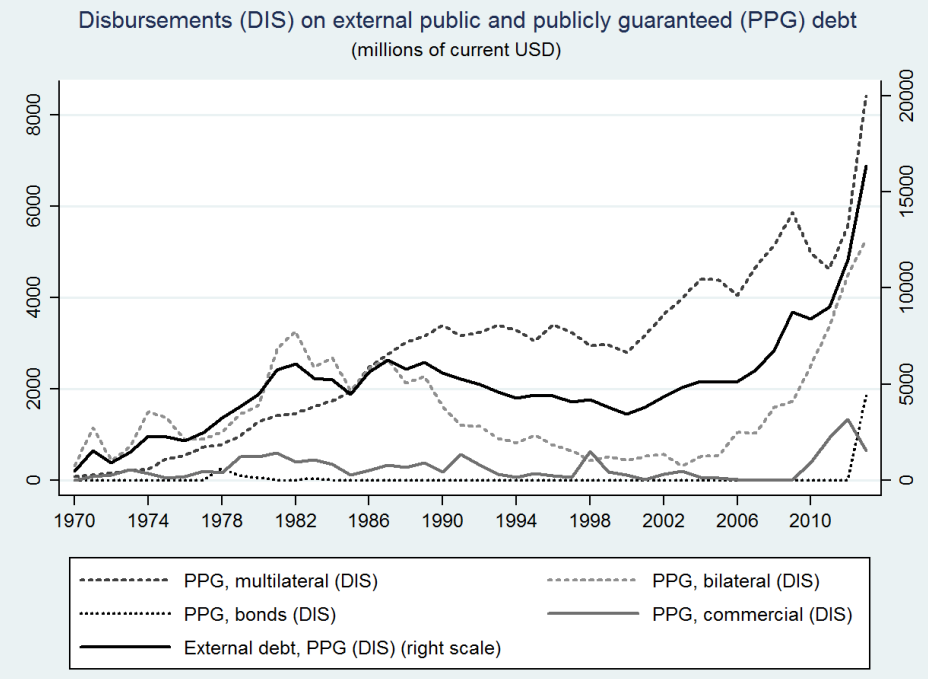
Descriptive statistics for the whole sample that includes both HIPCs and control group countries. The entire sample comprises 114 developing countries observed between 1992 and 2012. Note the panel is unbalanced.

Table 2: Heavily Indebted Poor Countries and Sample Restrictions

Countries	**Decision Point**	**Completion Point**	**MDRI**
	Entry	Exit	
Decision Point and Completion Point reached no later than 2006			
Uganda	**2000**	**2000**	**2005**
Mozambique	**2000**	**2001**	**2005**
Bolivia	**2000**	**2001**	**2005**
Tanzania	**2000**	**2001**	**2005**
Burkina Faso	**2000**	**2002**	**2005**
Mauritania	**2000**	**2002**	**2005**
Benin	**2000**	**2003**	**2005**
Mali	**2000**	**2003**	**2005**
Guyana	**2000**	**2003**	**2005**
Sao Tome & Principe	**2000**	**2003**	**2005**
Senegal	**2000**	**2004**	**2005**
Nicaragua	**2000**	**2004**	**2005**
Niger	**2000**	**2004**	**2005**
Madagascar	**2000**	**2004**	**2005**
Honduras	**2000**	**2005**	**2005**
Rwanda	**2000**	**2005**	**2005**
Zambia	**2000**	**2005**	**2005**
Cameroon	**2000**	**2006**	**2006**
Malawi	**2000**	**2006**	**2006**
Ethiopia	**2001**	**2004**	**2005**
Ghana	**2002**	**2004**	**2005**
Sierra Leone	**2002**	**2006**	**2006**
Decision Point reached no later than 2006			
The Gambia	2000	2007	2007
Guinea Bissau	2000	2010	2010
Guinea	2000	2012	2012
Chad	2001	-	-
Democratic Republic of Congo	2003	2010	2010
Burundi	2005	2009	2009
Republic of Congo	2006	2010	2010
Haiti	2006	2009	2009
Decision Point reached after 2006			
Afghanistan	*2007*	*2010*	*2010*
Central African Republic	*2007*	*2009*	*2009*
Liberia	*2008*	*2010*	*2010*
Togo	*2008*	*2010*	*2010*
Côte d'Ivoire	*2009*	*2012*	*2012*
Comoros	*2010*	*2012*	*2012*

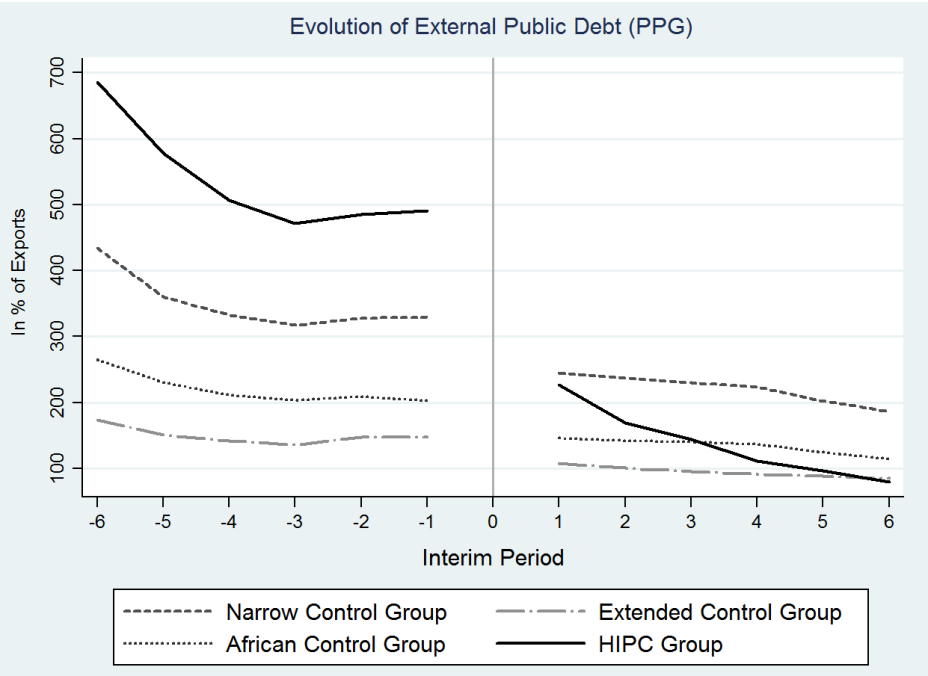
Sources: HIPC and MDRI Status of Implementation - International Monetary Fund. *HIPCs in italic font are excluded from the sample.* **Only HIPCs in bold font are considered for the impact of the whole HIPC process**. Finally Sao Tome & Principe is excluded from the analysis because of too many missing values on control variables.

Figure 1: Foreign Financing of LICs (Disbursments, current USD)



Sources: International Debt Statistics Database - World Databank, downloaded on the 11/26/2015.

Figure 2: Looking for a Valid Control Group



Sources: International Debt Statistics Database - World Databank
Note: Control group curve pools the average debt ratios of control groups relative to each HIPCs' cohort. For instance, observation point in -1 for the Narrow control group is the mean value of the average debt ratio computed in -1 over each control group associated with its HIPC cohort (the control group associated with the 2000's cohort, the one associated with the 2001's cohort, and so on until the control group associated with the 2006's cohort). We weight the share of each control group in the total average according to the number of HIPCs in each cohort. Since most of HIPCs entered the HIPC initiative in 2000 (and so belong to the 2000's cohort), the average debt ratio of the control group relative to the 2000's cohort has the biggest weight in the total debt ratio average.

Table 3: "Extended" Control Group Countries

Albania	Dominica	Lebanon	Sri Lanka
Algeria	Dominican Republic	***Lesotho***	St. Lucia
Angola	Ecuador	Malaysia	St. Vincent
Argentina	*Egypt*	Maldives	***Sudan***
Armenia	El Salvador	*Mauritius*	*Swaziland*
Azerbaijan	***Eritrea***	Moldova	Syria
Bangladesh	Fiji	Mongolia	Tajikistan
Belarus	**Georgia**	*Morocco*	Thailand
Belize	Grenada	Myanmar	Tonga
Bhutan	Guatemala	**Nepal**	*Tunisia*
Bosnia and Herzegovina	**India**	**Nigeria**	Turkey
Botswana	Indonesia	**Pakistan**	Turkmenistan
Brazil	Iran. Islamic Rep.	Panama	Ukraine
Cambodia	Jamaica	Papua New Guinea	Uzbekistan
Cape Verde	Jordan	Paraguay	Vanuatu
China	Kazakhstan	Peru	Venezuela
Colombia	***Kenya***	Philippines	**Vietnam**
Costa Rica	**Kyrgyz Republic**	Serbia	Yemen
Djibouti	**Lao PDR**	*South Africa*	*Zimbabwe*

Narrow Control Group countries
African Control Group countries

Table 4: Pre-Debt Relief Period: Descriptive Statistics on Covariates

	(I)	(II)	(III)	(IV)
	Pre-Decision Point Mean			
Variable / Group:	**HIPC DP**	**Narrow CG**	**Extended CG**	**African CG**
Debt (% of exports)	**622.50**	**340.16**	**150.07**	**215.15**
LIC Status	**0.93**	**0.95**	**0.32**	**0.36**
GDP_PC (in log)	6.00	6.11	7.26	7.11
GDP_GROWTH (% change)	3.56	5.16	3.78	3.98
GFCF (% of GDP)	16.93	22.93	22.79	21.72
DOM_SAV (% of GDP)	7.67	4.14	15.06	11.09
AGRI_SHARE (% of GDP)	35.50	30.19	19.76	17.06
INDU_SHARE (% of GDP)	22.41	25.52	30.28	33.75
RES_RENT (% of GDP)	12.70	9.03	7.94	8.87
TOT_RESV (% of GDP)	9.26	13.06	15.57	20.38
CAB (% of GDP)	-7.21	-6.49	-4.33	-3.94
INF (% change)	20.69	17.33	54.70	97.36
POP (inhabitants, log)	15.73	16.90	15.80	15.84
EXP_DIVERS	0.76	0.73	0.70	0.73
POLIT_IV	1.17	-0.44	1.32	-1.10
POLIT_R	4.16	5.09	4.12	4.70
CIVIL_R	4.22	5.12	4.27	4.54
	Pre-Decision Point - Difference in Mean			
Variable / Diff:	**(I)**	**(I) - (II)**	**(I)-(III)**	**(I-IV)**
Debt (% of exports)	-	**282.44*** **	**472.55*** **	**407.66*** **
LIC Status	-	**-0.02**	**0.60*** **	**0.56*** **
GDP_PC (in log)	-	-0.11**	-1.26***	-1.11***
GDP_GROWTH (% change)	-	-1.60***	-0.23	-0.42
GFCF (% of GDP)	-	-5.99***	-5.85***	-4.77***
DOM_SAV (% of GDP)	-	3.53***	-7.38***	-3.43***
AGRI_SHARE (% of GDP)	-	5.29***	15.74***	18.44***
INDU_SHARE (% of GDP)	-	-3.10***	-7.87***	-11.34***
RES_RENT (% of GDP)	-	3.69***	4.75***	3.81***
TOT_RESV (% of GDP)	-	-3.82***	-6.31***	-11.12***
CAB (% of GDP)	-	-0.72	-2.88***	-3.29***
INF (% change)	-	3.76	-32.29***	-75.90***
POP (inhabitants, log)	-	-1.17***	-0.068	-0.11
EXP_DIVERS	-	0.03***	0.06***	0.03***
POLIT_IV	-	1.46***	-0.12	2.34***
POLIT_R	-	-0.93***	0.03	-0.53***
CIVIL_R		-0.90***	-0.05	-0.32***

Mean values have been computed over 6 years before the decision point for HIPCs. For control groups, we have calculated the average across control group countries and over the 6 years before the decision point of their associated HIPCs' cohort. $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Table 5: Pre-Debt Relief Period: Descriptive Statistics on Outcome variables

	(I)	(II)	(III)	(IV)	(V)
	Pre Decision-Point Mean				
Variable / Group:	**HIPC DP**	**HIPC IP**	**Narrow CG**	**Extended CG**	**African CG**
AGP (in years)	8.19	8.78	7.33	5.66	5.02
AMP (in years)	31.92	33.97	27.16	20.65	19.48
AGE (in %)	69.11	69.14	61.93	42.95	47.70
AGE_MO (in %)	85.53	85.23	76.59	59.49	69.18
AGE_MT (in %)	82.98	82.59	69.72	51.21	56.25
PRIV_CO (in % of exports)	0.83	0.61	1.85	4.72	3.74
	Pre-Decision Point - Difference in Mean				
Variable / Diff:	**(I)**	**(II)**	**(I) - (III)**	**(I)-(IV)**	**(I-V)**
AGP (in years)	-	-	0.86***	2.53***	3.17***
AMP (in years)	-	-	4.75***	11.27***	12.43***
AGE (in %)	-	-	7.17***	26.23***	21.46***
AGE_MO (in %)	-	-	8.92***	26.09***	16.38***
AGE_MT (in %)	-	-	13.27***	31.78***	26.74***
PRIV_CO (in % of exports)	-	-	-1.01***	-3.88***	-2.90***

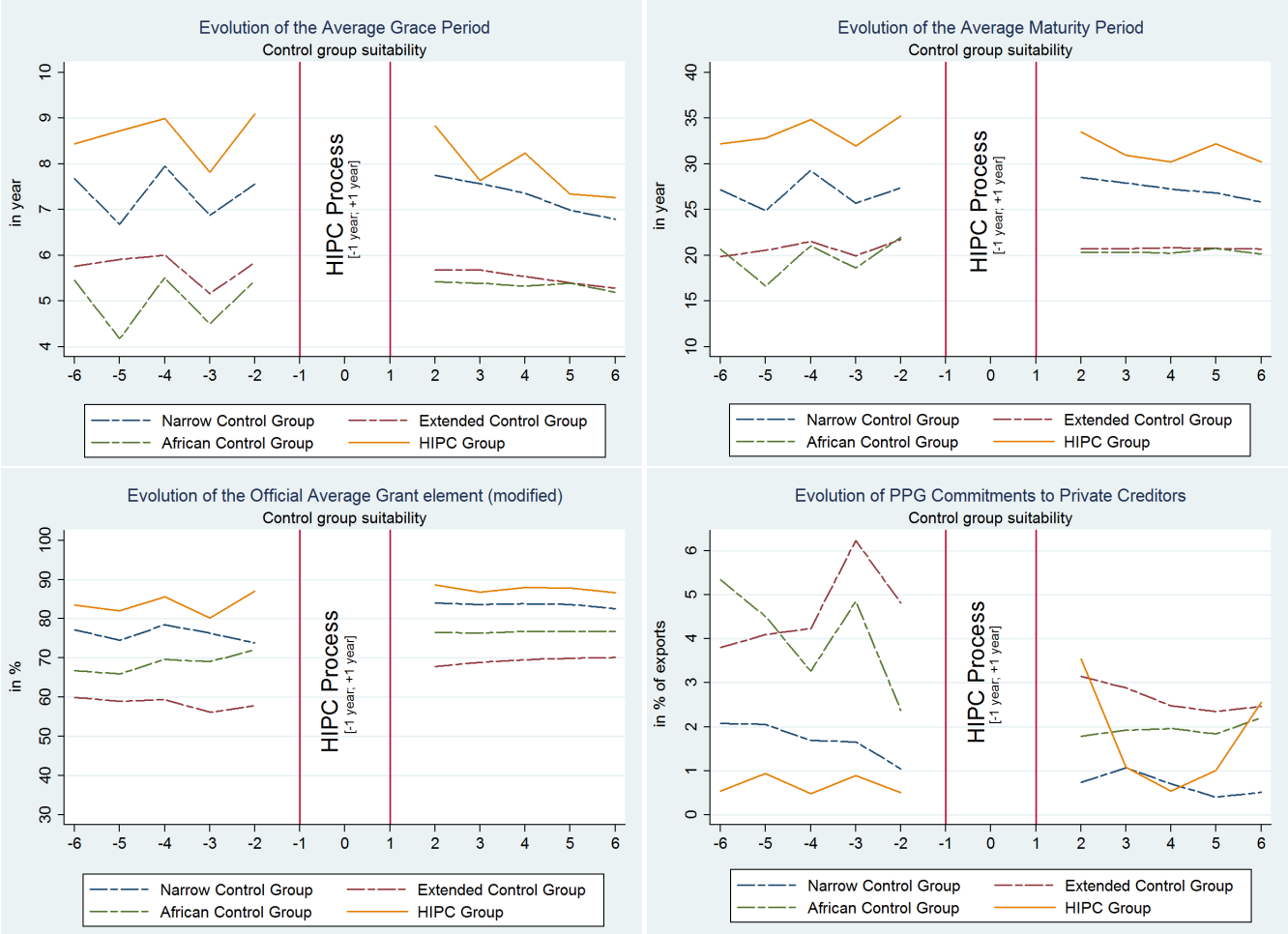
Mean values have been computed over the 6 years before the decision point of each HIPCs. For control groups, we have calculated the average across control group countries and over the 6 years before the decision point of their associated HIPCs' cohort. $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Table 6: Event-Study - Test for Parallel Trends prior Debt Relief

	(I)	(II)	(III)	(IV)	(V)	(VI)
Period	**Placebo test [-6;-4] vs [-3; -1]**					
Dep. Variable	AGP	AMP	AGE	AGE_MO	AGE_MT	PRIV_CO
Narrow Control Group						
Post_Placebo-Period	0.395	2.324*	-1.340	0.728	0.725	-0.226
	(1.436)	(2.030)	(-0.808)	(0.668)	(0.642)	(-0.277)
Extended Control Group						
Post_Placebo-Period	0.565**	1.742	-1.573	0.488	1.735	-1.943***
	(2.186)	(1.565)	(-0.921)	(0.432)	(1.512)	(-2.795)
African Control Group						
Post_Placebo-Period	0.365	1.910	-3.000*	-2.822**	-2.028*	0.162
	(1.475)	(1.670)	(-1.806)	(-2.741)	(-1.721)	(0.207)
Number of HIPCs	29	29	29	29	29	28
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observation	174	174	162	174	174	168

Robust t-statistics in parentheses, clustered at the country-level. $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Figure 3: Parallel Trend - Visual Examination before the HIPC Process



We use the same methodology as for Figure 2. Control group curve pools the average outcome variable of control groups relative to each HIPCs' cohort. We do not report graph for non-modified measure of the average grant element and the average grant element on total external debt. This is because graphs for these two variables are really similar to the one for the modified average grant element on official debt.

Table 7: Difference-in-Differences Estimates - Benchmark Results

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)
Debt Relief Event	**Decision Point [with at least +6 years after]**						**Interim Period [with at least +6 years after]**					
Dep. Variable	AGP	AMP	AGE	AGE_MO	AGE_MT	PRIV_CO	AGP	AMP	AGE	AGE_MO	AGE_MT	PRIV_CO
Narrow CG												
Post-Debt Relief Event	-1.379**	-5.460**	-5.247*	-4.971	-8.599*	2.219**	-1.676**	-6.068**	-6.347*	-7.657*	-10.194*	2.263**
	(-2.189)	(-2.407)	(-1.929)	(-1.473)	(-1.785)	(2.157)	(-2.585)	(-2.503)	(-1.758)	(-1.748)	(-1.994)	(2.647)
F-Stat	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	723	724	702	703	724	710	550	551	535	536	551	540
Nb of country	43	43	43	43	43	43	36	36	36	36	36	36
Extended CG												
Post-Debt Relief Event	-0.964**	-2.881*	-7.759***	-6.257**	-6.011**	1.296*	-1.412***	-4.113**	-10.650***	-8.157**	-8.328**	2.321**
	(-2.134)	(-1.736)	(-3.264)	(-2.314)	(-2.096)	(1.694)	(-2.729)	(-2.114)	(-3.518)	(-2.473)	(-2.596)	(2.610)
F-Stat	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	1,474	1,475	1,397	1,399	1,474	1,461	1,301	1,302	1,230	1,232	1,301	1,291
Nb of country	88	88	88	88	88	88	81	81	81	81	81	81
African CG												
Post-Debt Relief Event	-1.773**	-4.769*	-4.631	-6.920	-3.327	2.752**	-1.412***	-6.447**	-8.365*	-5.435	-10.509**	2.420**
	(-2.643)	(-1.890)	(-1.335)	(-1.491)	(-1.004)	(2.200)	(-2.729)	(-2.322)	(-1.793)	(-1.183)	(-2.183)	(2.710)
F-Stat	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Observations	734	735	690	691	734	725	561	562	523	524	523	555
Nb of country	44	44	44	44	44	44	37	37	37	37	37	37

Columns (I) to (VI) expose results for a sample of 28 HIPCs that have reached their decision point no later than 2006. Columns (VII) to (XII) expose results for a sample of 21 HIPCs that have reached their completion point no later than 2006. All estimates are obtained through the WITHIN estimators. The set of control variables is the same for each columns and includes *GDP_PC*, *GDP_GROWTH*, *POP*, *AGRI_SHARE*, *GFCF*, *DOM_SAV*, *CAB*, *INF*, *TOT_RESV*, *POLIT_IV*, and *POLIT_R*. *EXP_DIVERS* has been intentionally omitted since series only start in 1995. However including *EXP_DIVERS* into our set of control variables does not change the results. Robust t-statistics in parentheses (clustered at the country-level). $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Table 8: Alternative Selection Criteria, Alternative Control Groups

Panel A		
Debt-to-dom.rev. sup. 250 % and LIC average status at least (3/5)		
Bangladesh	Bhutan	Cambodia
Georgia	Indonesia	Kyrgyz Republic
Lao PDR	Nepal	Pakistan
Sudan	Tajikistan	Vietnam
Yemen		
Panel B		
Debt-to-Exports Ratio sup. 170 % and LIC average status at least (0/5)		
Algeria	Argentina	Bangladesh
Bhutan	Cambodia	Dominica
Ecuador	Egypt	Eritrea
Georgia	Grenada	India
Jordan	Kenya	Kyrgyz Republic
Lao PDR	Lebanon	Lesotho
Morocco	Nepal	Nigeria
Pakistan	Peru	Samoa
Serbia	Sudan	Syria
Tonga	Vietnam	Yemen
Panel C		
Debt-to-Exports Ratio sup. 0 % and LIC average status at least (5/5)		
Armenia	Azerbaijan	Bangladesh
Bhutan	Cambodia	Eritrea
India	Kenya	Kyrgyz Republic
Lao PDR	Lesotho	Moldova
Mongolia	Myanmar	Nepal
Nigeria	Pakistan	Sudan
Tajikistan	Uzbekistan	Vietnam
Yemen	Zimbabwe	

Table 9: Difference-in-Differences Estimates - Sensitivity to the Benchmark Control Group

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)	(XI)	(XII)
Debt Relief Event	**Decision Point [with at least +6 years after]**						**Interim Period [with at least +6 years after]**					
Dep. Variable	AGP	AMP	AGE	AGE_MO	AGE_MT	PRIV_CO	AGP	AMP	AGE	AGE_MO	AGE_MT	PRIV_CO
Panel A												
Post-Debt Relief Event	-1.052*	-4.117**	-5.949*	-5.127	-3.903	2.098*	-1.471**	-4.700*	-7.781*	-8.169	-5.051	1.704*
	(-1.888)	(-2.072)	(-1.933)	(-1.308)	(-1.139)	(1.941)	(-2.270)	(-1.882)	(-1.846)	(-1.565)	(-1.104)	(1.970)
Observations	685	686	668	669	686	672	512	513	501	502	513	502
Nb of country	41	41	41	41	41	41	34	34	34	34	34	34
Panel B												
Post-Debt Relief Event	-1.223**	-4.464**	-5.181**	-6.157**	-9.357**	1.440	-1.617***	-5.278**	-6.384**	-7.632*	-10.700**	1.635*
	(-2.199)	(-2.168)	(-2.179)	(-2.043)	(-2.247)	(1.540)	(-2.705)	(-2.383)	(-2.123)	(-2.014)	(-2.360)	(1.757)
Observations	858	859	827	828	859	845	685	686	660	661	686	675
Nb of country	51	51	51	51	51	51	44	44	44	44	44	44
Panel C												
Post-Debt Relief Event	-1.398**	-5.520**	-5.861**	-5.456	-8.478*	1.685*	-1.815**	-6.713**	-7.433*	-7.517*	-9.865*	1.847**
	(-2.133)	(-2.333)	(-2.078)	(-1.625)	(-1.842)	(1.891)	(-2.502)	(-2.428)	(-2.019)	(-1.769)	(-1.949)	(2.180)
Observations	799	800	778	779	800	786	626	627	611	612	627	616
Nb of country	48	48	48	48	48	48	41	41	41	41	41	41

Columns (I) to (VI) expose results for a sample of 28 HIPCs that have reached their decision point no later than 2006. Columns (VII) to (XII) report results for a sample of 21 HIPCs that have reached their completion point no later than 2006. The debt relief calendar for these two samples therefore runs from -6 to +6. All estimates are obtained through the WITHIN estimators. The set of control variables is the same as for Table **??**. **Panel A**: Debt/Revenues sup. **250%** and LIC status at least **(3/5)**, **13** control group countries; **Panel B**: Debt/Exports sup. **170%** and LIC status at least **(0/5)**, **30** control group countries; **Panel C**: Debt/Exports sup. **0%** and LIC status at least **(5/5)**, **23** control group countries. All F-Stat are statistically significant at the 0.01% level. Robust t-statistics in parentheses (clustered at the country-level). $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Table 10: Falsification Tests

	(I)	(II)	(III)	(IV)	(V)	(VI)
Effect of having reached:	The Decision Point					
Dep. Variable	AGP	AMP	AGE	A_MO	A_MT	PRIV
Random draw replications: 500						
Coefficient of **Post-Decision Point**						
Mean	-0.026	0.028	-0.019	-0.028	-0.213	-0.066
Standard deviation	0.396	1.610	2.292	2.701	2.756	0.891
Percent significant	5.00	5.40	6.40	5.40	3.00	5.40
Observations	1539	1540	1437	1439	1539	1526
Nb of country	93	93	93	93	93	93
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Effect of having fully benefited from:	The Interim Period					
Dep. Variable	AGP	AMP	AGE	A_MO	A_MT	PRIV
Random draw replications: 500						
Coefficient of **Post-Interim Period**						
Mean	0.057	-0.048	-0.061	-0.120	0.256	-0.037
Standard deviation	-1.964	1.999	3.256	3.734	3.867	1.139
Percent significant	6.00	5.00	6.00	6.00	7.20	5.80
Observations	1471	1483	1364	1374	1472	1475
Nb of country	92	93	93	92	93	93
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes

In this table, we rename AGE_MO by A_MO, AGE_MT by A_MT, and PRIV_CO by PRIV in order to get a better Table format. The first part of the Table presents the effect of having reached the decision point on the different outcome variables representing the financing conditions to official and private creditors. The second part of the Table reports the effect of having fully benefited from the interim period on the same dependent variables. We randomly draw samples of treated countries, estimate the effect of having benefited from debt relief under the decision point or the entire interim period, and then replicate the operation 500 times (or 300 times). The average statistics (mean and standard error) of the coefficient of interest are reported below the indication of the number of replications. Finally, the raw "Percent significant" reports the percentage of estimates where the coefficient of interest is statistically significant (over the 500 or 300 replications). All the estimates account for macroeconomic covariates as in the benchmark specification.

Table 11: Difference-in-Differences estimates - Outliers and Sample Sensitivity

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
Dep. Variable:	Private commitment on New Official Public Debt						
	With respect to the ***Narrow Control Group***						
Debt Relief Event	**Decision Point [with at least +6 years after]**						
excluding:	Uganda	Mozambique	Bolivia	Mauritania	Tanzania	Honduras	Senegal
Post-DR Point	2.259**	2.229**	1.980*	2.189**	2.257**	2.366**	2.175**
	(2.230)	(2.099)	(1.925)	(2.125)	(2.174)	(2.352)	(2.048)
excluding:	Benin	Burkina Faso	Mali	Cameroon	Guyana	Nicaragua	Niger
Post-DR Point	2.214**	2.209**	2.196**	2.200**	2.232**	2.208**	2.231**
	(2.141)	(2.131)	(2.131)	(2.102)	(2.065)	(2.128)	(2.137)
excluding:	Madagascar	Rwanda	Zambia	Malawi	Ethiopia	Ghana	Sierra Leone
Post-DR Point	2.197**	2.183**	2.209**	2.220**	1.860*	2.457**	2.215**
	(2.129)	(2.106)	(2.121)	(2.124)	(1.915)	(2.286)	(2.144)
excluding:	Gambia	Guinea-B	Guinea	Chad	DRC	Burundi	Congo
Post-DR Point	2.237**	2.219**	2.212**	2.447**	2.220**	2.285**	1.532**
	(2.126)	(2.150)	(2.140)	(2.234)	(2.155)	(2.240)	(2.027)
Observation	693	693	693	693	693	693	693
Number of country	42	42	42	42	42	42	42
Debt Relief Event	**Interim Period [with at least +6 years after]**						
excluding:	Uganda	Mozambique	Bolivia	Mauritania	Tanzania	Honduras	Senegal
Post-DR Point	2.493***	2.282**	2.093**	2.275**	2.333**	2.602***	2.168**
	(2.825)	(2.496)	(2.429)	(2.604)	(2.671)	(2.905)	(2.480)
excluding:	Benin	Burkina Faso	Mali	Cameroon	Guyana	Nicaragua	Niger
Post-DR Point	2.274**	2.287**	2.269**	2.239**	2.235**	2.307**	2.226**
	(2.624)	(2.591)	(2.591)	(2.605)	(2.508)	(2.646)	(2.669)
excluding:	Madagascar	Rwanda	Zambia	Malawi	Ethiopia	Ghana	Sierra Leone
Post-DR Point	2.289**	2.234**	2.195**	2.272**	2.333**	2.328**	2.237**
	(2.674)	(2.648)	(2.650)	(2.684)	(2.671)	(2.589)	(2.646)
Observation	535	535	535	535	535	535	535
Number of country	35	35	35	35	35	35	35

All results are obtained from model (2) where the reference control group is the "narrow" control group. For each estimate we removed one of the HIPC present into the sample. There are 28 HIPCs in the sample for the Decision point since 28 HIPCs have reached their decision point no later than 2006. And the sample for the whole HIPC process (so the interim period) is made of 21 HIPCs since 21 countries have completed the process no later 2006. All F-statistics are statistically significant at the 0.01% level. Robust t-statistics in parentheses (clustered at the country-level). $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.

Figure 4: Debt to Private Creditors Evolution - Case 1

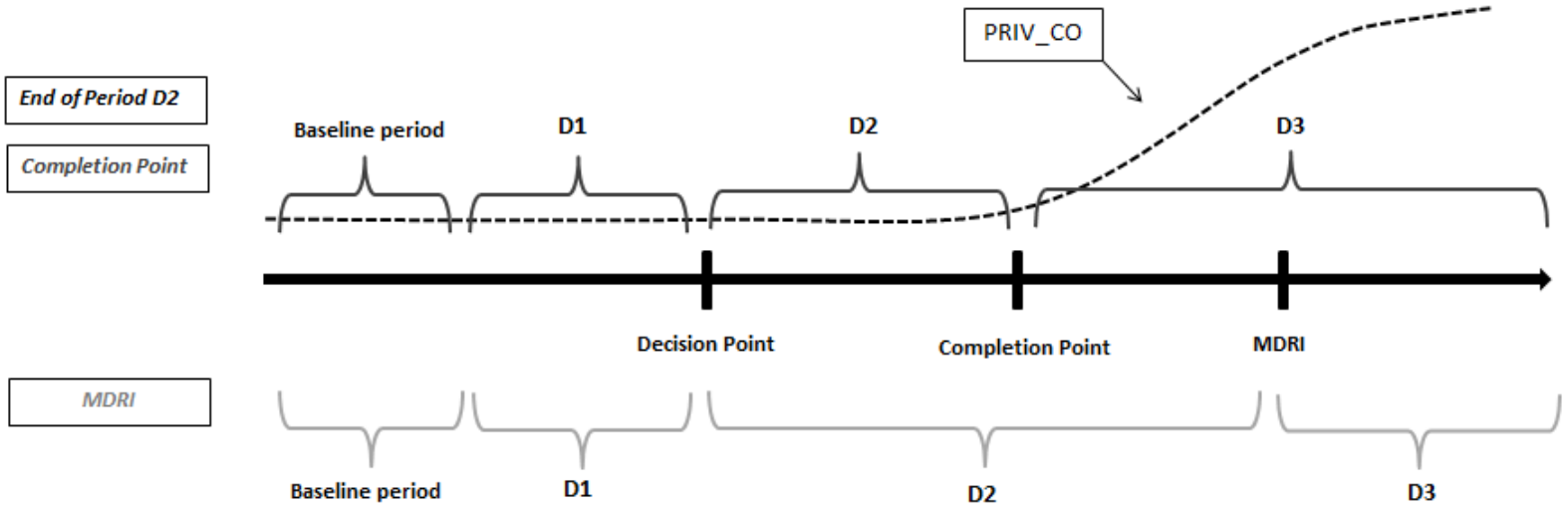


Figure 5: Debt to Private Creditors Evolution - Case 2

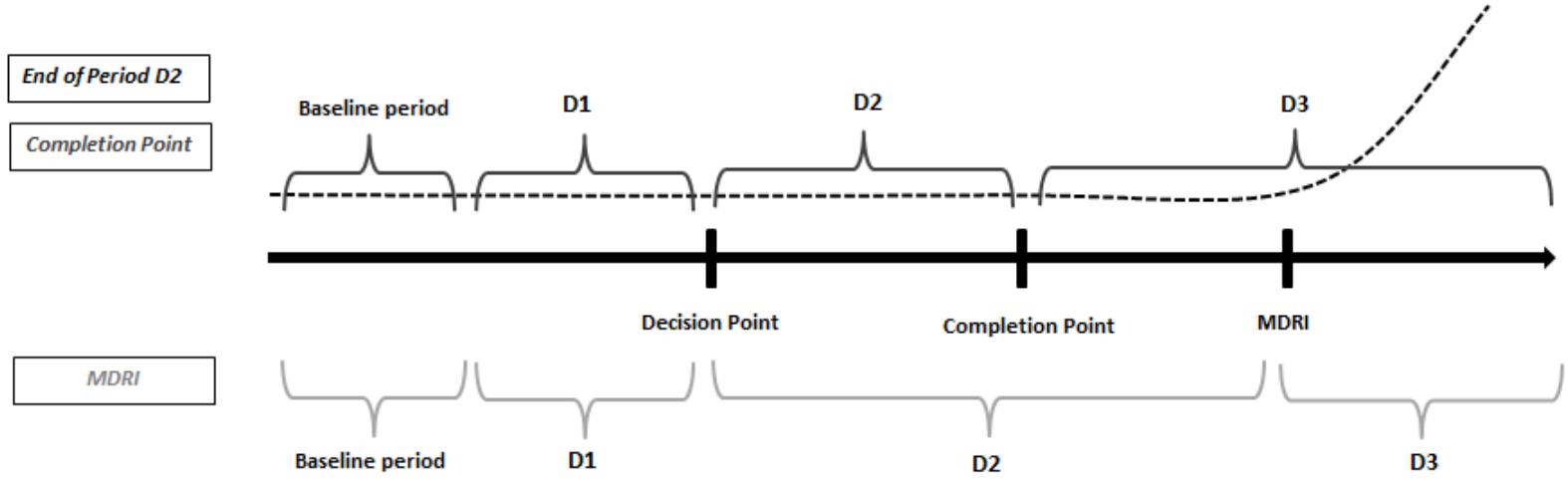


Table 12: Difference-in-Differences estimates - Gradual Effect of Debt Relief

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)
Dep. Variable:	PRIV_CO							
D2 period	IP (DP-CP)		DP-MDRI		IP (DP-CP)		DP-MDRI	
Control group:	***Narrow Control Group***				***African Control Group***			
HIPC*D1:	1.048	0.755	1.069	1.527	3.253	2.825	3.340	3.656
	(0.870)	(0.623)	(0.888)	(1.663)	(1.227)	(1.041)	(1.270)	(1.453)
HIPC*D2:	1.814	2.483	1.220	3.571	3.719	4.475	2.885	5.585
	(1.315)	(1.516)	(0.681)	(1.421)	(1.367)	(1.543)	(0.938)	(1.545)
HIPC*D3:	2.852**	3.003**	3.368**	5.266**	5.003**	5.200**	6.044**	7.957**
	(2.417)	(2.530)	(2.562)	(2.092)	(2.106)	(2.230)	(2.475)	(2.656)
R-Squared	0.129	0.127	0.130	0.144	0.178	0.217	0.181	0.235
Nb of country	40	40	40	40	41	41	41	41
Observations	734	752	734	752	765	776	765	776
Control group:	***Extended Control Group***				***Panel A***			
HIPC*D1:	0.009	-0.316	0.054	0.252	0.588	0.410	0.605	1.068
	(0.009)	(-0.249)	(0.052)	(0.240)	(0.621)	(0.390)	(0.638)	(1.364)
HIPC*D2:	-0.130	-0.110	-0.789	0.248	1.189	1.840	0.676	2.769
	(-0.100)	(-0.081)	(-0.472)	(0.134)	(1.157)	(1.419)	(0.494)	(1.411)
HIPC*D3:	2.276*	2.118*	3.135**	4.173**	2.196**	2.397**	2.675**	4.418*
	(1.939)	(1.717)	(2.355)	(2.237)	(2.183)	(2.359)	(2.214)	(1.981)
R-Squared	0.103	0.117	0.106	0.127	0.119	0.123	0.120	0.135
Nb of country	85	85	85	85	51	51	51	51
Observations	1,563	1,585	1,563	1,585	923	941	923	941
Control var. set:	C1	C2	C1	C2	C1	C2	C1	C2

All results are obtained from model (2). In order to estimate equation (2), one needs sufficient observations over D1, D2, D3, and the baseline period. We therefore consider 22 HIPCs having reached their decision point no later than 2002. COntrol variables set C1 includes *GDP_PC*, *GFCF* (the growth rate), *DOM_SAV*, *EXP* (exports share, *CAB*, *INF*, *TOT_RES*, *POP*, *POLIT_IV*, *POLIT_R*. C2 comprises all control variables used so far in the previous estimates. In addition, each control variable set also includes the length of the interim period or of the period running from the decision point of the MDRI (depending on the D2 period considered). Finally adding RES_RENT to our set of control variables does not change the results. Note that results with respect to Panel B, C, and D have not been reported to save space but are similar to those of Panel A (available on request to the authors). All F-statistics are statistically significant at the 0.01% level. Robust t-statistics in parentheses (clustered at the country-level). $^{***}p \leq 0.01, ^{**}p \leq 0.05, ^{*}p \leq 0.1$.