

# The dynamic implications of debt relief for low-income countries

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## Abstract

Debt relief provides low-income countries with an incentive to accumulate debt, boost consumption, and reduce investment over time. We quantify this incentive effect employing a dynamic stochastic general equilibrium model, calibrated to 1982–2006 Ugandan data, and find that long-run debt and consumption-to-GDP ratios are about twice as high with debt relief than without it, while the investment-to-GDP ratio is sixty percent lower. Our simulations show that debt-relief episodes are likely to have only a temporary impact on debt levels but may have a lasting effect over the size of the economy, lowering GDP growth up to twenty percent over time. These results fill a gap in the debt relief literature since, to the best of our knowledge, the quantification of incentive effects is rather scarce. The paper further contributes to the literature by constructing a tractable structural model that is able to replicate the data well and captures key features of low-income countries facing the possibility of debt relief.

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## 1. Introduction

Following the receipt of debt relief poor countries face a classic time-consistency problem: they can either constrain their absorption and keep the debt-to-GDP ratios at the post-relief level or start borrowing again, possibly in excess of prudential levels. We argue that the recurrent availability of debt-relief schemes, like the Heavily Indebted Poor Countries (HIPC) Initiative and the Multilateral Debt Relief Initiative (MDRI), provide incentives for the latter option.<sup>1</sup> The prospect of future debt relief motivates indebted countries to contract more debt,

increase consumption, and lower investment. In doing so, these countries are driven by the past behavior of donors who have granted debt relief to countries whose debts have exceeded some arbitrary levels. While donor surveillance of poor-country economic programs prevents some of the excessive debt accumulation trajectories, it is unlikely to eliminate the dilemma completely.

After the oil and commodity price shocks of the 1970s and 1980s, most low-income countries closed their external financing gaps through borrowing and their debt-to-GDP ratios quickly increased to the point where they could not service their loans. Arrears to external lenders became widespread and bilateral official lenders started to offer increasingly generous refinancing schemes in the context of the Paris Club.<sup>2</sup> These offers were, however, piecemeal and debt continued to increase until the mid 1990s. By the early 1990s the international community started to call for a coordinated effort between bilateral

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<sup>1</sup> The HIPC initiative is a comprehensive approach to debt reduction for poor countries with unmanageable debt burdens. The MDRI provides relief to selected low-income countries to help them reach the Millennium Development Goals. For a description of the initiatives see [International Monetary Fund \(2007\)](http://www.imf.org/external/np/exr/facts/hipc.htm), <http://www.imf.org/external/np/exr/facts/hipc.htm>.

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<sup>2</sup> The Paris Club is an informal group of nineteen official creditors devoted to assist debtor nations to sort out debt payment problems. A detailed chronology of the relief mechanisms is available in the [Paris Club Annual Reports 2007, 2008 and 2009](#).

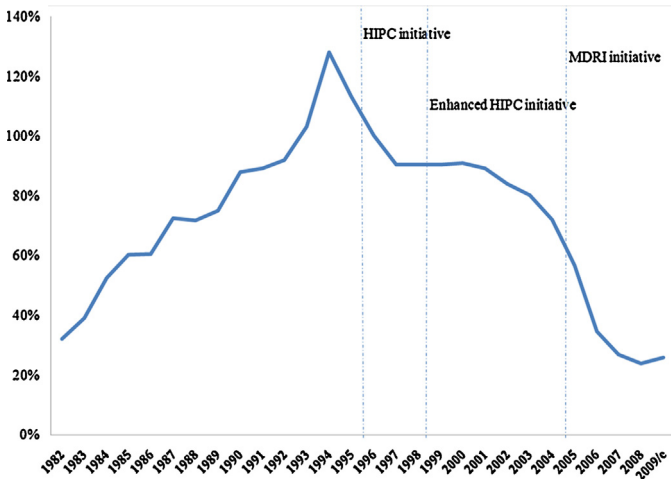


Fig. 1. Debt-to-GDP ratio of HIPC at completion point. We aggregate total debt outstanding at year-end and GDP series in current US\$ to compute average debt-to-GDP ratios of 28 countries at the completion point of the HIPC initiative as of September 2010.

Source: World Economic Outlook 2010. Excludes Afghanistan and the Republic of Congo. e/estimates.

and multilateral creditors to grant debt relief to those countries that were committed to pursuing sustainable macroeconomic policies under the IMF-supported adjustment programs. The underlying idea was simple. First, countries with a track record of responsible macroeconomic policies would have their slate wiped clean of debts that were clearly unserviceable. Second, looking forward, leaders of the newly debt-free countries would spurn the excessive borrowing of their predecessors and increase investment to encourage growth and reduce poverty.

The 1996 HIPC initiative succeeded in bringing the average debt-to-GDP ratio for countries at the completion point to 26 percent, significantly below the 1996 peak of 128 percent, thus fulfilling the first objective (Fig. 1). Regarding the second objective of debt sustainability, will HIPCs remain “debt free” or will they be tempted to accumulate debt again? On the one hand, to limit moral hazard, the HIPC initiative contained a sunset clause, making the initiative a one-off event and sending a signal that HIPC eligibility would not be unlimited (International Monetary Fund, 2004). On the other hand, the sunset clause was extended four times as progress under the initiative was slower than anticipated and HIPC eligibility was gradually extended. At the formal conclusion of the initiative the international financial institutions did not foresee any systemic debt difficulties in low-income countries; however, these statements could be hardly construed as a firm pre-commitment of no future debt relief.<sup>3</sup>

To ascertain the consequences of the lack of pre-commitment we ask the following question: how different would the behavior of low-income countries be with and without debt relief? We contribute to the literature by quantifying the incentive effects of debt relief through the lens of a structural model that includes key features of low-income countries. Further, our framework allows separating the effects of invariant country characteristics

(structural parameters) and exogenous shocks from endogenous choices including those of consumption and investment. This type of analysis is rather scarce in the literature. Specifically, we ask whether the possibility of debt relief motivates poor countries to take on additional debt. In this environment we examine the dynamic implications of relief expectations on consumption, investment, and the debt-to-GDP ratio given donors’ debt-relief policy. To this end, we build a parsimonious characterization of debt-relief schemes where donors’ debt-relief policy is characterized by a probability rule that encompasses the criteria traditionally used by donors and international financial institutions: the debt-to-GDP ratio and adverse macroeconomic conditions, that is, negative productivity shocks. We show that this simple formulation for debt relief fits the data well. A note of caution is in order; it is beyond the scope of the paper to propose an optimal mechanism to allocate debt-relief and we leave the formulation of optimal debt-relief rules open for future research. Furthermore, in our approach, we abstract from some important issues: first, political economy effects associated with strategic behavior by borrowers and lenders; second, learning-by-doing effects resulting from past actions; and third, commitment technologies that could allow the lender to pre-commit to specific relief mechanisms (e.g., commit not to grant debt relief in the future). In particular, this last extension of our framework could further enrich the study of the determinants of debt relief from a time-consistency problem approach.

The small open economy model is calibrated to match the data for Uganda, the first HIPC-eligible nation to reach the enhanced HIPC initiative completion point in 2000. The model features a minimum consumption requirement and an endogenous debt-relief policy rule. The former feature puts a floor under aggregate consumption; in particular, a country may decide to acquire additional debt to secure the subsistence minimum. The latter feature is meant to capture the relationship between low-income country debt decisions and donor relief policy. Moreover, to simplify the model, we assume that all debt is external, a reasonable simplification as domestic debt markets have been underdeveloped in HIPC.<sup>4</sup>

In the model debt decisions depend on the state of the world and a stochastic interest rate driven by the probability of debt relief. Although households do not know whether debt relief is going to be granted or not, they may formulate expectations thereof. On the one hand, debt relief is likely to be granted to a country with either unsustainable debt, or one that clearly has balance of payment difficulties, or both. On the other hand, poor countries do not automatically collect debt relief as donors may decide not to grant it.

To quantify the effect of HIPC’s expectations of future debt relief on consumption, investment, and debt decisions, we contrast two scenarios. In the benchmark scenario countries estimate the likelihood of obtaining debt relief based on the state of the

<sup>4</sup> Christensen (2004) found that sub-Saharan domestic debt markets are generally small, highly short-term, and have a narrow investor base. During 1980–2000 the average domestic debt-to-GDP ratio was 7.6% in HIPC countries and only 1.6% of GDP in Uganda, or 1/30 of its external debt.

<sup>3</sup> See, for example, International Monetary Fund (2010).

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