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Debt Position of Developing Countries and New Initiatives for Debt Reduction

A Panel Data Fixed Effects Estimation of the Impacts of the HIPC Initiatives

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Table of Contents

List of Figures

List of Tables

Abstract

In September 1996, the World Bank and the International Monetary Fund launched the Heavily Indebted Poor Countries Initiative (HIPC). This initiative was endorsed by 180 governments around the world as an effective and welcome approach to help poor, severely indebted countries reduce debt as a part of the overall poverty reduction strategy. Three years later, the initiative was enhanced to provide for faster, broader and deeper debt relief.

Using a panel data fixed effect estimation, this study assesses the achievements of the first and second HIPC initiatives and explores further areas of intervention that might help the HIPCs graduate from debt rescheduling and achieve sustainable growth and poverty alleviation. Despite moderate achievements of the HIPC measures so far, this paper argues in favour of a HIPC III initiative. Much more relief is needed to link debt reduction to poverty alleviation if the expectations raised by the HIPC initiatives are to become reality.

Keywords: debt relief, indebtedness, governance, HIPC initiatives, panel data, poverty.

Debt Position of Developing Countries and New Initiatives for Debt Reduction
A Panel Data Fixed Effects Estimation of the Impacts of the HIPC Initiatives

Nazaire Houssou[1] and Franz Heidhues[2]

1 The HIPC Debt Problem

Since the debt crisis of the 1980s, the international financial community has been providing help to debtor countries in reducing their external debt burdens in order to foster growth, reduce poverty, and attain external viability. This assistance has taken the form of the provision of concessional financing from international financial institutions, debt relief from official creditors mainly in the context of Paris Club reschedulings and, in some cases, bilateral action by creditors. These measures have resulted in considerable success in alleviating the external debt burden of many middle-income countries. Many poor countries, however, continue to suffer from unacceptable levels of poverty and heavy external debt burdens due to a combination of factors, including inappropriate development policies, imprudent external debt management policies, lack of perseverance in structural adjustment and economic reform, deterioration in their terms of trade, and poor governance. This group of countries has been classified as Heavily Indebted Poor Countries (HIPCs).

In response, the World Bank and the IMF launched in September 1996, the initiative for Heavily Indebted Poor Countries (HIPC)[3]. This initiative was endorsed by 180 governments around the world as an effective and welcome approach to help poor, severely indebted poor countries reduce debt as a part of the overall poverty reduction strategy. In addition, the HIPC initiative called for faster and broader debt release for poor countries that pursue economic and social policy reforms. In September 1999, the initiative was significantly enhanced to provide more debt relief to more countries faster (World Bank, 2002).

About eight years after these new initiatives[4] were launched, little effort appears to have been directed towards assessing empirical evidence whether the initiatives have had the intended effects on debt stock, debt service and poverty-reducing expenditures. Likewise, whether HIPCs have responded in a similar manner to HIPC measures remains unanswered.

This study analyses the beneficial effects of the new debt reduction initiatives and their contribution to development. Specifically, we seek to answer the following questions:

1. What have been the effects of the new HIPC debt reduction initiatives for debt stock, debt service and poverty-reducing expenditures?
2. Is governance a source of variability in response to HIPC measures?
3. Under what conditions could the HIPC initiatives be more effective?

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[3] For a fuller description of the HIPC initiatives, see World Bank, 2003.
[4] The framework of HIPC initiatives contrasts with traditional debt relief efforts in four major aspects: (i) it places **debt sustainability** as explicit objective; (ii) it is comprehensive, in that assistance is provided by **all creditors**; (iii) it is **participatory** as debt sustainability analyses which provide the basis for relief decisions are prepared jointly by the IDA and IMF, and the country concerned; and (iv) it broadens the performance requirements to include explicitly **social criteria**.

We hypothesize that:

Hypothesis 1. *HIPC measures have not significantly reduced debt stock and debt service of HIPCs. Consequently, the debt positions of the HIPCs have not been changed significantly and the impact on economic growth in the future remains limited.*

Hypothesis 2. *Poverty-reducing expenditures of HIPCs remain unchanged after implementation of HIPC measures. Therefore, the HIPC debt relief did not improve the potential for poverty alleviation.*

Hypothesis 3. *The responses of countries to HIPC measures in terms of debt stock, debt service and poverty-reducing expenditures depend on factors such as: i) government effectiveness, ii) control of corruption, and iii) political stability.*

This paper is organised as follows. Section 2 reviews the relevant theoretical and conceptual considerations, whereas section 3 describes the methodological approach used. Section 4 presents and discusses the empirical results and section 5 concludes with policy implications.

2 Theoretical and Conceptual Considerations

2.1 Debt-Cycle Hypothesis

In examining the HIPC initiatives, one has to look at the overall debt cycle in order to approach the HIPC debt problem. We have to consider more precisely the different debt stages a country will move through on its way of economic development. Analysing the specific characteristics of every single stage in the debt cycle gives information about how to act in a certain situation of indebtedness. These considerations lead us to the ***debt cycle hypothesis*** which focuses its attention on five balance of payments situations and debt stages. The debt cycle hypothesis works with the most relevant economic indicators for capital flows, i.e. the trade account, the net interest payments, the net capital flows and the debt stock.

Analysing these aspects with regards to direction and extent of international capital flows, leads to the following characterization of the five debt stages:

Table 1 Characterization of debt stages

Debt stages	1st Young debtor	2nd Mature debtor	3rd Debt reducer	4th Young creditor	5th Mature creditor
Characteristics	*Trade deficit *Net capital inflow *Net outflow of interest payments *Rising debt	*Decreasing trade deficit *Decreasing net capital inflow *Net outflow of interest payments *Debt rising at diminishing rate	*Rising trade surplus *Net capital outflow *Diminishing net outflow of interest payments *Falling net foreign debt	*Decreasing trade surplus, then deficit *Outflow of capital at decreasing rate *Net outflow of interest payments, then inflow *Net accumulation of foreign assets	*Trade deficit *Diminishing net capital flows *Net inflow of interest payments *Slow-growing net foreign asset position

Source: Compiled from Heidhues et al., 1996

Observing the long term development of today's industrial countries confirms the debt cycle hypothesis on a large scale with exceptions. With regards to developing countries, we have to distinguish different historical experiences. In the colonial period, some countries achieved current account surpluses and even became capital exporters, but most economies (especially oil-importers) remained in the first stage of the debt cycle. During the 1970s, many countries thought to be at the second stage running remarkable trade surpluses imported huge amounts of capital. Some of them then reached the third stage running remarkable trade surpluses and reducing net debt. However, others did not experience this desirable economic progress and fell into high indebtedness due to the rising capital inflows and the inability to slow down the increase of net debt. These countries have been classified as HIPCs, despite decades of implicit and explicit debt relief efforts.

2.2 Framework of the HIPC Initiatives

According to economic theory, the HIPC initiatives are expected to bring about a sustainable debt level, reduce the constraints on growth and alleviate poverty in HIPCs. The following framework is applied to analyse their impacts.

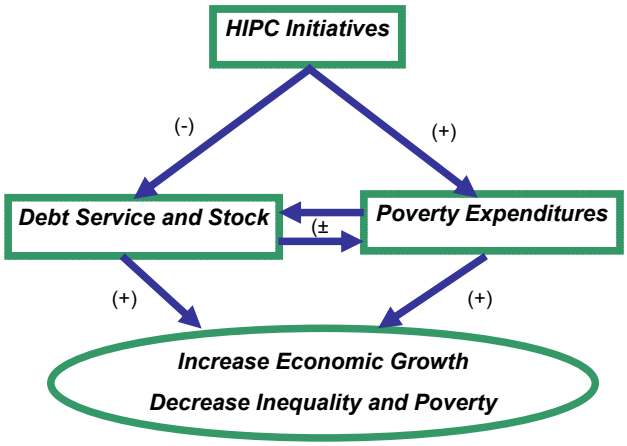


Figure 1: Framework of the HIPC Initiatives
Source: Own presentation

This frame suggests that HIPC measures aim at reducing the debt stock and debt service, allow raising poverty expenditures in HIPCs and consequently effect positively economic growth, poverty, and inequality. The next section describes the methodology used to estimate the effects of the HIPC debt initiatives.

3 Data and Methodology

3.1 The HIPCs and Data Collection

The HIPCs for which HIPC debt relief has been approved at decision point are the main target group[5] of the study. The flows of HIPC debt relief are available only for the World Bank and IMF. These flows represent about 40% of the total HIPC debt relief in net present value terms. The contribution of Paris Club and other creditors amounts about 60% of the total relief in net present value terms. Therefore, the total flows of HIPC relief are determined by computing the product of the flows of the World Bank and IMF and a factor of 2.5 (100/40). The main assumption of this method is that the terms of HIPC relief are comparable and its flows are delivered in constant proportion over time.

Data on debt service, debt stock and poverty-reducing expenditures were taken from World Development Indicators, Global Development Finance (2004), and HIPC documents. Estimates of governance indicators were taken from Kaufmann et al. (2002).

3.2 Analysis Methods

The approach used in this analysis integrates the "before and after" approach and panel data fixed effect regressions with econometric models in order to quantify the changes that have occurred in terms of debt stock, debt service and poverty-reducing expenditures within the framework of the HIPC initiatives and isolate their causes as well. Since HIPC effects cannot be captured in one single year alone, we used the average values of debt service, debt stock and poverty expenditures over three-year periods before (1997-1999) and after (2000-2002)[6] the implementation of HIPC measures.

Given the heterogeneity of HIPCs and the relatively short period of HIPC implementation, panel data allowing fixed group effects estimation was formulated to isolate the impacts of HIPC debt relief. Panel data sets are more oriented toward cross-section analyses; they are wide, but typically short. Even though modelling in this setting calls for some complex stochastic specifications (Greene, 2003); a panel analysis (cross sectional-time series) offers a better framework for analysing the HIPCs. The fixed group effects approach appears to be the most appropriate for the questions under research.

Interaction factors between the HIPC debt relief and three governance indicators (Political Stability, Government Effectiveness and Control of Corruption) were introduced in the model. The idea is that we may expect high beneficial effects in HIPCs with improved governance records. Therefore, creditors' institutions may be interested in promoting such factors in order to establish an environment conducive to debt relief initiatives in the future.

[5] For a complete list of HIPCs, see appendix 1.

[6] Even though the HIPC initiatives were launched in 1996, The World Bank (2003) reports that the situation until late in 2000 largely reflects the pre-HIPC relief because many countries did not reach their decision point at that time. Therefore, we use year 2000 as the reference.

Correlation analyses using time series for selected Middle Income Countries and HIPCs[7] were performed to test if there is a correlation between debt level and growth and debt service level and growth. To make sure that the data represent a meaningful pattern, they were screened for missing values and outliers' cases. The Democratic Republic of Congo and Sao Tome and Principe were removed from the datasets due to incomplete records.

Finally, governance estimates were charted to explore whether they have improved under the HIPC initiatives. Estimations of the model[8] and statistical analyses were performed using EXCEL and three econometric packages: LIMDEP, SAS, and SPSS.

The various models used in this study have their merits and limitations. In bringing them together, we intend to highlight their differences, identify complementarities as well as indicate needs for further research. Despite methodological limitations, findings show a meaningful and relevant pattern that could not be set aside.

4 Results and Discussions

The empirical results suggest that the HIPC initiatives have had significant effects on debt stock and debt service. Likewise, the initiatives have had an indirect, but small effect on poverty-reducing expenditures through debt service reduction. Much of the changes reported in poverty-reducing expenditures, however, are due to aid and most probably to other factors. A thorough investigation of these factors requires another set of approaches which goes beyond the scope of this study. Good governance is also found to strengthen the effects of debt relief.

This section reports the main findings of the study. The relationships between debt and economic growth are discussed. We then present the governance patterns of HIPCs under the HIPC initiatives. Finally, the results of the model are revealed.

[7] Most of the HIPCs also belong to the group of Low Income Countries of the World Bank (2003).
[8] For a full description of the model, see appendix 2.

4.1 External Debt, Debt Service and Economic Growth

Table 2 shows the statistical results for the correlation between debt level and economic growth for selected HIPCs and Middle Income Countries (MICs).

Table 2 Spearman correlation test for selected HIPCs and MICs

Countries	Variables	Debt Service and Growth		Debt Stock and Growth	
		Coefficient	Time Series	Coefficient	Time Series
HIPCs	Benin	.0129^{ns}	1974 -2002	-.007^{ns}	1974 -2002
	Bolivia	-.547***	1976 -2002	-.546***	1976 -2002
	Cameroon	-.321^{ns}	1977-1995	-.470**	1977-2002
	Ethiopia	-.032^{ns}	1982-2002	.225^{ns}	1982-2002
	Ghana	-.334^{ns}	1976-2002	-.289^{ns}	1970-2002
	Honduras	-.023^{ns}	1974-2002	-.189^{ns}	1970-2002
	Kenya	-.020^{ns}	1970-2002	0.248^{ns}	1975-2002
	Mali	-.243^{ns}	1975-2002	-.032^{ns}	1970-2002
	Senegal	-.149^{ns}	1974-2002	-.021^{ns}	1970-2002
	Tanzania	-.464**	1989-2002	-.569**	1989-2002
MICs	Algeria	-.618***	1977-1991	-.335**	1970-2002
	Brazil	-.084^{ns}	1975-2002	-.135^{ns}	1975-2002
	China	-154^{ns}	1982-2002	.543**	1987-2002
	Egypt	.36^{ns}	1977-2002	.350**	1970-2002
	Guatemala	-.300^{ns}	1978-2002	-.518***	1970-2002
	Philippines	-.143^{ns}	1977-2002	-.451***	1970-2002
	Romania	-.065^{ns}	1981-2002	.511**	1990-2002
	South Africa	-.700^{ns}	1994-2001	-.200^{ns}	1994-2001
	Thailand	-.360**	1975-2002	-.264^{ns}	1970-2002
	Turkey	-.225^{ns}	1976-2000	.036^{ns}	1976-2000

Source: Own computations; data from GDF, WDI and HIPC documents, 2004.
Note: *** (**) (*) indicates 1% (5%) and (10%) significance level. ^{ns} denotes not significant.

As indicated in Table 2, for most countries in the sample, debt stock and debt service affect economic growth negatively although in quite a number of them, the link is not shown to be significant. Furthermore, the coefficients are statistically significant for some of these countries. These figures show that external debt stock and debt service can be burdens for economic growth. The results are consistent with Karagol (1999), Metwally and Tamaschke (1994), and Were (2001).

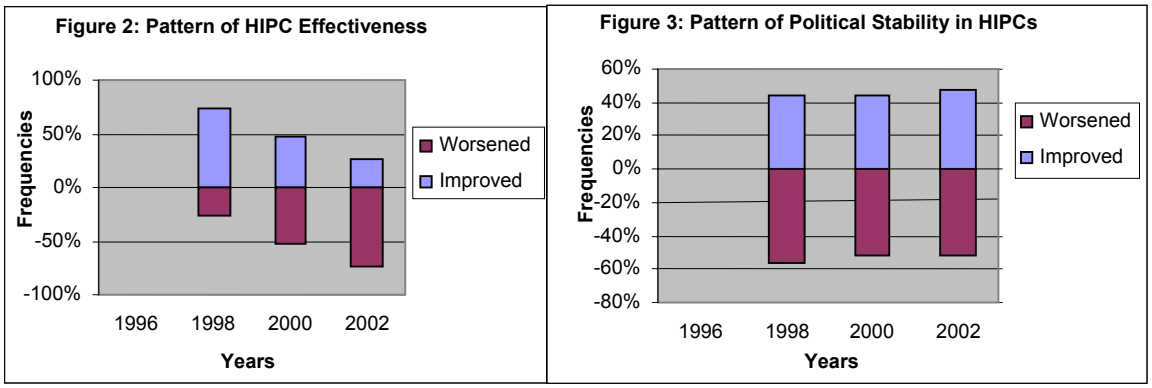
Unexpectedly, China, Romania and Egypt display a positive and significant correlation between debt stock and economic growth. This result suggests that whether debt is a burden for economic growth also depends on factors such as proper use of resources and economic and political management. It indicates that proper management of external resources is important to spur economic growth.

As concerns HIPCs, empirical evidence confirms the theoretical assumption, suggesting that the improvement in their debt positions, that is a reduction of debt stock and debt service levels, may help economic growth and poverty alleviation in the future, but that need not necessarily be the case. Especially for those developing countries that do not meet their debt service obligations or where the relief is made on debt which is not serviced, the effects will not show up, at least not in the short to medium term. In the long run, these countries may find their access to new credits impaired.

4.2 Country Governance under the HIPC Initiatives

Good governance is essential to the success of the HIPC initiatives. The World Bank and the IMF (2003) report that the current framework is fully supportive of good governance policies and includes related conditions and indicators. The initiatives form a broader effort by the international community to support improvement in governance in these countries.

In the following figures, we examine the trends of three governance criteria[9] within the period of HIPC debt relief. These figures describe the frequency (number of HIPCs in percent) that have improved or worsened their governance indicator compared to the previous period. With this, we wish to express the efforts made by HIPCs as a group to improve their performances while receiving debt relief.

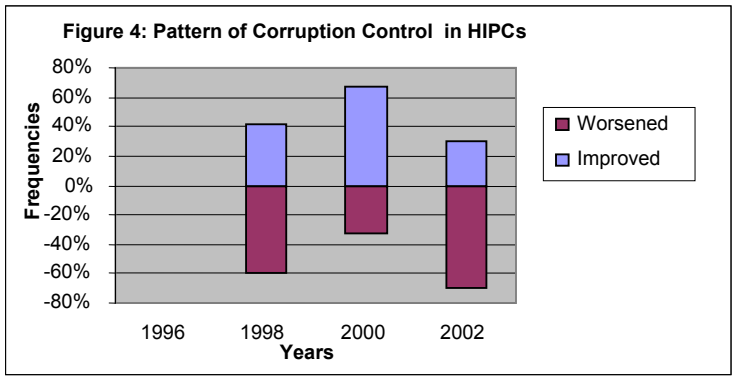


Source: Own computations; data from Kaufmann et al., 2002. Frequencies refer to the number of HIPCs that have improved or worsened their governance indicators compared to the previous period.

Figure 2 shows that in 1998, 74% of HIPCs have improved their performances compared to 1996; that is the beginning of HIPC initiatives. However, this number has significantly declined in the subsequent years. Many HIPC effectiveness estimates have worsened.

As concerns the political stability indicator (Figure 3), it shows practically no change in the estimates from 1996 to 2002.

[9] The definitions of governance indicators are given in appendix 3.



Source: Own computations; data from Kaufmann et al., 2002.

Estimates of the frequency of the control of corruption indicator (Figure 4) display a sinusoidal trend, reflecting the very volatile influence of HIPC governments on corruption.

The question that arises from the above discussion is: Have the HIPCs improved their governance under the HIPC initiatives? The answer is no. Apart from political stability for which no sensible change is reported, both of the others governance indicators show a substantial decline.

Overall, it seems fair to say that HIPCs have displayed worse governance indicators despite the waves of HIPC debt relief, with an average falling below the world average in every single period. Yet good governance has been emphasized as a key factor for the success of the initiatives. This is not to imply that HIPCs are worse than other developing countries in terms of governance; many of them are making serious efforts to improve their governance instead.

4.3 Modelling the Effects of the HIPC Initiatives

An important question of this research is to ascertain whether the HIPC initiatives have had an impact on debt indicators and poverty-reducing expenditures. In addition, the role played by three important governance indicators in HIPC responses was examined. We investigate all these issues using a variety of methods. The most important results are reported in this sub-section.

Table 3 Wilcoxon signed ranks test for debt stock, debt service and poverty-reducing expenditures of HIPCs

	MDST2 – MDST1[10]	MDSR2 – MDSR1[11]	MPEXP2 – MPEXP1[12]
Z-obs	-1.251[ns]	-3.200***	-3.528***
p-value	.211	.001	.000

Source: Own computations; data from GDF, WDI and HIPC documents, 2004.
Note: *** (**) (*) indicates 1% (5%) and (10%) significance level. [ns] denotes not significant.

From Table 4.2, it appears that there are highly significant differences between the debt service and poverty-reducing expenditures before and after the HIPC initiatives, indicating that debt relief is primarily affecting the flow variables such as here debt service and government expenditures for poverty reduction.

Such differences could not be established for the external debt stock indicator. In other words, the analyses suggest that debt service has been significantly reduced; poverty expenditures have been significantly increased, whereas the stock of external debt remains the same.

These results are broadly plausible. However, many factors interact in the economies of HIPCs, and it is not possible to systematically attribute the observed changes directly to the HIPC measures. The reason is that the approach used fails to separate the changes due to HIPC measures from other factors.

The above analysis, however, has the merit of giving a first insight into the impacts of the HIPC debt relief. Interestingly, while there is still no evidence of the effects of the HIPC initiatives, this discussion does answer partly the first and second hypothesis. The next part of the section quantifies the specific effects of HIPC debt relief.

- **Results of the Model Estimation**

As stated earlier, panel data allowing fixed group effects estimation was used, given the heterogeneity across HIPCs and the relatively short period of implementation of the HIPC initiatives. The model is described in appendix 2. No co-linearity was found between variables in the model, as values of estimated correlation coefficients were far below 0.8. The Hausmann specification tests give a mixed picture of the statistical significance of the fixed over the random effects models. Considering the above theoretical discussions, all three equations were estimated using the fixed effects model.

[10] External Debt Stock before and after the HIPC initiatives
[11] Debt Service before and after the HIPC initiatives
[12] Poverty-Reducing Expenditures before and after the HIPC initiatives

The results of the model, including some classical statistics, are reported in Table 4. They show a puzzling and seemingly contradictory result.

Table 4 Estimation of the panel model coefficients (Fixed effects are available upon request)

	N=100 Observations		
Variables[13]	One-Way Fixed Effect Model		
	EDT	DSR	PEXP
	Debt Stock Equation	**Debt Service Equation**	**Poverty Expenditures Equation**
EDT	**DEP**	-0.029^{ns} (-0.723)	0.11^{ns} (1.035)
DSR	-0.30^{ns} (-0.86)	**DEP**	-0.069** (-2.275)
PEXP	1.175^{ns} (0.97)	-0.534^{ns} (-1.320)	**DEP**
HIPC	**-3.928***** (-3.01)	**-2.228***** (-5.609)	**-0.134^{ns}** (-1.114)
AGRO	0.390** (2.28)	0.063^{ns} (1.072)	-0.001^{ns} (-0.91)
GDPG	-.870^{ns} (-1.35)	-0.098^{ns} (-0.457)	
POL	-21.950** (-2.16)	0.392^{ns} (0.108)	9.50^{ns} (1.133)
CTR	-5.742^{ns} (-0.82)	-0.884^{ns} (-0.355)	-0.508^{ns} (-0.827)
GOV	21.339* (-1.87)	-1.871^{ns} (-0.448)	-0.958^{ns} (0.992)
GRC	0.663^{ns} (1.46)		
IIL	**1.960***** (3.45)		
INF		-0.276** (-2.076)	
GRNE			-0.485*** (-6.052)
EBG			-0.489*** (-5.663)
AID			**0.129***** (3.281)
Hausmann Statistic	33.10***	12.40^{ns}	13.96^{ns}
Adjusted R-squared	94%	64%	87%
Model test F	[34, 62]= 47.99***	[32, 60] = 6.17***	[34, 62] = 20.15***

Source: Own computations; data from Kaufmann et al., 2002; GDF, WDI, and HIPC documents, 2004.
Note: *** (**) (*) indicates 1% (5%) and (10%) significance level. ^{ns} denotes not significant. t- values in brackets.

[13] **EDT_{it}**= External Debt Stock (in percent of gross domestic product) of the ith-country in year t
DSR_{it}=Debt Service Ratio (in percent of exports of goods and services) of the ith-country in year
$PEXP_{it}$=Poverty Expenditures (in percent of gross domestic product) of the ith-country in year t
$HIPC_{it}$ = HIPC debt relief (in percent of gross domestic product) of the ith-country in year t
INF_{it} = Inflation rate (consumer price) of the ith-country in year t
$AGRO_{it}$ = Annual growth of export of goods and services (%) of the ith-country in year t
$GDPG_{it}$ = Annual growth of gross domestic product (%) of the ith-country in year t
$GRNE_{it}$ = Gross national expenditures (in percent of gross domestic product) of the ith-country in year t
GRC_{it} = Gross capital formation (in percent of gross domestic product) of the ith-country in year t
EBG_{it} = External balance on export of goods and services of the ith-country in year t
AID_{it} = Aid (in percent of gross national income) of the ith-country in year t
IIL_{it} = IBRD and IDA loans (in percent of gross domestic product) of the ith-country in year t
CTR_{it} = Control of corruption index of the ith-country in year t
GOV_{it} = Government effectiveness index of the ith-country in year t
POL_{it} = Political stability index of the ith-country in year t

From the debt stock equation, most of the results support expectations in terms of the sign of the coefficients (poverty expenditures, growth rate of exports of goods and services, gross capital formation, IBRD and IDA loans, HIPC debt relief, growth rate of GDP, control of corruption and political stability). The sign for the growth rate of exports of goods and services, government effectiveness and debt service, however, were not expected. Moreover, the coefficients for the growth rate of exports of goods and services and government effectiveness are significant. It may be explained that countries with promising exports potential and high government effectiveness tend to obtain more foreign loans that culminate in larger external debt. The higher the growth rates of exports, the higher the country's ability to borrow from abroad.

This reduces the uncertainty from the country's side to meet its debt service obligations in the future and increases its creditworthiness vis-à-vis creditors' institutions. Likewise, HIPCs with higher government effectiveness indicator have high debt stock. More effective governments tend to attract more funds and use them well. It is interesting to note that loans are highly significant; the higher the loan, the higher the debt stock.

More importantly, the HIPC debt relief is negative and highly significant. Clearly, this result indicates that the HIPC debt relief has an impact on the debt stock of the HIPCs for the period 1996-2002. However, these impacts are modest. A one percent increase in HIPC relief is associated with about four percent debt stock reduction. Surprisingly, while HIPC debt relief has impact on debt stock, the flow of new loans seems to have diluted these effects. The HIPCs have borrowed from abroad during the same period - probably because of the reduced debt overhang effect and improved creditworthiness following the debt stock reduction. This explains why their debt stock has not changed, as discussed earlier in this section. Such evidence goes in the same direction as Easterly's hypothesis. These results are also similar to those of Dijkstra and Hermes (2001b) who report that the stock effect of debt reduction in Latin American Countries has translated into improved creditworthiness for these countries.

As concerns the debt service equation, apart from debt stock, growth rate of exports of goods and services and political stability, all of the variables have the hypothesized signs. Inflation is found to be negative and highly significant. This may be due to the fact that when inflation is higher, HIPCs lack resources to service their debt.

Likewise, estimation results strongly suggest that HIPC debt relief did significantly and negatively affect debt service for the period 1996-2002. A one percent increase in HIPC debt relief reduces the debt service by about two percent. This implies that the HIPC debt relief is significantly associated with the debt service reduction observed earlier. Unlike the debt stock, the debt service of HIPCs was reduced during the period of study.

As concerns the poverty expenditures equation, most of the results conform to the theoretical analysis. Debt stock and HIPC debt relief have unexpected signs, but neither of them is significant. It is interesting to note that debt service is indeed significant and negative. This indicates that the service of debt at its current level is still a burden for poverty reduction. These results suggest that the increase in poverty expenditures reported earlier is not directly due to HIPC debt relief, but to others factors. It was expected that a significant and positive relationship between HIPC debt relief and poverty expenditures would be the case. The HIPC debt relief was considered as assistance to HIPCs and was supposed to be used for social purposes. However, HIPC initiatives did have an indirect effect on poverty expenditures through debt service reduction.

On the other hand, aid has a positive and significant impact on poverty expenditures in the estimation, suggesting that aid also contributes to poverty expenditures.

The official expectations were that resources would be freed from the HIPC relief and used to boost poverty expenditures. Empirical evidence supports the fact that few resources have been freed through the effect of debt relief on debt service. HIPC relief appears mainly to be an operation of book keeping. Going back to the origin of the HIPC initiatives, the debt level of HIPCs was believed to be unsustainable and they still do not possess enough resources to meet their debt service obligations. No significant resource should, therefore, be expected from the relief because these resources simply do not exist. The potential effects of HIPC initiatives seem to have been overestimated. These results are consistent with recent studies.

In the Latin American experience, Dijkstra and Hermes (2001b) postulate that a flow effect of debt relief was difficult to establish in the presence of large arrears. Likewise, Birdsall et al. (2001) have reported that the HIPC relief is too small to meet the needs of HIPCs. Similar views are expressed by Mbelle (2001) in the case of Tanzania, and Martin (2002) referring to the Millennium Development Goals.

As a whole, there seem to be strong arguments for the effects of HIPC initiatives only with respect to debt stock and debt service. Estimated results indicate that the impact of HIPC debt relief on poverty expenditures is little. Surprisingly, the flows of new loans have cancelled out the stock effect of HIPC measures. It appears, therefore, that the effects of indebtedness have been weakened, but certainly the causes have not been removed.

This raises the question of the sustainability of debt reduction. Is it likely that debt reduction would be sustainable when the HIPCs continue to borrow from international institutions while receiving relief? The answer to this question is: it depends. Whether new borrowings end up being beneficial or harmful to HIPCs does depend upon how well these resources are used.

However, given the history of HIPCs, there are serious reasons to be sceptical. The problems seem to have been postponed to the future and there is still no convincing evidence that HIPCs are on the right track.

- **Determinants of HIPC Responses**

Three governance dimensions, political stability, control of corruption and government effectiveness, were introduced as interaction factors in the above equations to determine whether good governance is a source of variability and thereby answering the question whether HIPCs have responded in a similar manner to HIPC measures. The results are reported in Table 5.

Table 5 Estimation of the interaction coefficients

Dependent Variables	One-Way Fixed Effect Model		
	EDT	DSR	PEXP
Interaction Terms	**Debt Stock Equation**	**Debt Service Equation**	**Poverty Expenditures Equation**
HIPC*POL	-0.817^{ns} (-0.31)	2.839*** (3.716)	-.253^{ns} (-1.087)
HIPC*CTR	-6.353** (-1.98)	-0.455^{ns} (-0.466)	-0.235^{ns} (-0.778)
HIPC*GOV	0.797^{ns} (0.21)	-0.788^{ns} (-0.681)	0.502^{ns} (1.580)

Source: Own computations; data from Kaufmann et al., 2002; GDF, WDI, and HIPC documents, 2004.
Note: *** (**) (*) indicates 1% (5%) and (10%) significance level. ^{ns} denotes not significant. t- values in brackets.

Two interaction factors have the expected negative sign in the debt stock equation. The third interaction factor is positive, but it is not significant. The same is true for the debt service equation. In this case, however, the interaction factor with the unexpected sign is highly significant.

As to the poverty expenditures equation, only one coefficient has the expected positive sign, but none of the interaction terms are significant.

The above analysis does not allow drawing firm conclusions; it may indicate that the control of corruption and political stability indicators are important determinants of the debt stock and debt service effects of HIPC relief respectively.

The first interaction factor[14] suggests that the effect of HIPC relief on debt stock depends on the corruption level. For HIPCs with a high level of corruption, the stock effect of debt relief is small and vice-versa. In others words, the corruption indicator is a powerful determinant of the magnitude of the impact of HIPC relief on debt stock. This evidence conforms to expectations.

The second interaction term suggests that the effect of HIPC relief on debt service depends on the political stability level. Therefore, the political stability indicator appears to be a powerful determinant of the magnitude of the impact of HIPC relief on debt service. For HIPCs with relative political stability the debt service effect of debt relief is small and vice versa. Politically instable HIPCs appear to have benefited much more in terms of debt service. Such a result contrasts with expectations. This may be explained by the fact that the debt service ratio for HIPCs with relative political stability is lower and therefore, the HIPC relief granted, and consequently its effect are lower accordingly.

The conclusion that emerges from this analysis is that large debt relief will be useful to HIPCs if they have made substantial progress in good governance, especially with an improved corruption indicator. In a good governance environment, debt relief would have a fairly strong effect on debt indicators.

All in all, findings reported above provide a mixed picture of the effects of the HIPC initiatives. Moreover, this analysis reveals that not only debt relief is crucial, but also aid and loans are vitally important for the development of HIPCs. Concerning the data and methodological considerations, some issues need to be examined. The analyses above are based on observational, not experimental data. Therefore, a spurious correlation might occur. The use of fixed effects and multiple regressions, however, limits the risk for this type of problem. Likewise, having had access only to the most fragmentary data, the analysis here is of course only partial.

[14] The directions of the interaction factors are reported in the table of appendix 4.

5 Conclusions and Policy Implications

The present study tries to analyse the beneficial effects of the HIPC initiatives. Its aim is to provoke additional thinking. In this section, we summarize the research questions and the main results of the study and discuss policy recommendations, as well as limitations and needs for further research.

5.1 Answering the Research Questions and Testing of Hypotheses

The original research objective was to evaluate the impacts of the HIPC initiatives. On the first research question, we would say that the HIPC initiatives did have some positive effects on debt stock and debt service of the HIPCs. Even though the relief provided under the initiatives is additional to the traditional debt relief, these effects however, are only moderate. Likewise, the HIPC initiatives have had little impact on poverty-reducing expenditures through its effect on debt service reduction.

On the second question, one percent (1%) debt relief provided under the HIPC initiatives has reduced the debt stock of the HIPCs by about four percent (4%), the debt service by about two percent (2%), and has indirectly increased poverty-reducing expenditures by about 0.15%. As for the third question, the control of corruption and political stability indicators appear to be two major sources of variability in response to HIPC measures.

Concerning the first hypothesis, evidence supports that the HIPC measures have reduced the debt stock and debt service of HIPCs. Therefore, this hypothesis can be considered falsified. The debt positions of HIPCs, however, have changed only in terms of debt service. The flows of new loans have maintained the debt stock at the same level.

As concerns the second hypothesis, evidence shows that poverty-reducing expenditures have increased after implementation of HIPC measures. Consequently, the prospects for economic growth and poverty alleviation would likely be better. This hypothesis therefore, is falsified. The HIPC measures have had an indirect effect on poverty expenditures. Likewise, other factors such as aid have an impact on these expenditures as well.

As concerns the third hypothesis, evidence corroborates that the responses of HIPCs in terms of debt stock and debt service depend well on political stability and control of corruption levels respectively. This hypothesis, therefore, could not be rejected. However, the assumption is falsified in all other cases and with regard to poverty expenditures. The above answers have important implications for both creditors' institutions and HIPCs.

5.2 Policy Implications

To begin with, it is important to note that the problems facing HIPCs are complex and multidimensional. Therefore no solution could be expected to encompass every reality in these poor countries. In the light of the above discussions and results, certainly there can be no doubt that the HIPC initiatives have had some beneficial effects. However, the root causes and acute symptoms of indebtedness have not been removed. The debt service of HIPCs has been lowered, but whether this reduction has freed enough resources is questionable. There are two possible scenarios. Either significant resources were indeed freed, but directed towards other sectors of the economy in HIPCs, or there were little freed resources.

In the first scenario, creditors' institutions have the responsibility to ensure that funds are effectively used for their intended purposes if the HIPC initiatives are to be a major breakthrough. At the moment, there are no effective mechanisms in place which ensure that assistance is used for social purposes. Therefore, actions have to be taken in this direction. If necessary, the assistance provided for the HIPCs that do not respect ex-ante agreed upon conditions could be suspended. This scenario is, however, unlikely given the eligibility requirements and the scrutiny that HIPCs have to go through to qualify for the HIPC relief.

In the second scenario, the HIPC relief is probably not large enough to create significant resource flows to be used for social purposes and anti-poverty programmes. Therefore, the HIPC initiatives could miss the very goal for which it has been established. To prevent such a result, additional concessions are required from the donor community if the rhetoric surrounding the initiatives is to become a reality. This idea is not, in fact, a completely new one. Similar views are expressed in the literature, even though for different reasons.

A minimum, but broader conditionality would be required. Debt relief without conditionality would probably be hazardous. However, in contrast to traditional conditionality that is tailored only to internal conditions prevailing in HIPCs, changes are also needed in the external environment.

An increasing recognition that the HIPC initiatives alone cannot solve the economic problems in HIPCs points to the need for change in international cooperation and establishment of more rational relationships between the creditors and debtors nations. Many factors are interconnected and with an increasingly liberalized world economy, the emergence of the economies of HIPCs depends on how they can make use of a freer world market. With their heavy dependence on the world market, it is inevitable that distortions of all kind (subsidization, trade barriers, etc.) would adversely affect any growth effect of debt relief. Therefore, whether debt relief is beneficial should not be the concern of the HIPCs alone. Donors' institutions have a great role to play in supporting HIPCs to get better access to the world market.

If serious progress is to be achieved the concept of national sovereignty must be addressed. Often in the name of sovereignty, important questions about the success of the HIPC initiatives are left to the discretion of HIPCs themselves. We believe that a joint definition of poverty-reducing expenditures and socially-relevant sectors is necessary to insure an efficient use of freed resources.

In this context, it is extremely important to emphasize the role the civil society and particularly the poor as major stakeholders should play; their views deserve greater consideration. Local participation should be encouraged to ensure the development of nationally–owned PRSPs. In the past, resources were neither targeted at the most efficient projects, nor at the poorest people or their real needs. In some cases, poverty-reducing projects attract the sympathy of the most powerful people within the poor, and the undermining or distorting influence of such individuals must be addressed.

In a good governance environment, debt relief has a strong positive effect on debt indicators. Therefore, HIPCs with international assistance must make steady efforts to reverse the patterns of their governance at all levels. Larger share of debt relief should be targeted to countries with goor governance. Peer pressure should be emphasized on countries with poor governance in order to facilitate internal reforms. The New Paternship for African Development (NEPAD) offers a suitable framework for such role. With the waves of democracy across HIPCs, many governance-monitoring and especially anti-corruption institutions have been created. The HIPC initiatives offer a great opportunity to promote and empower these institutions.

To prevent further debt accumulation in the future which could again lead to debt overhang, lenders have to take account of the quality of governance in HIPCs. Likewise, recent proposals for an establishment of an International Insolvency Court, is one of the ways to tackle this problem. This could well exercise a disciplining influence on all participants and promote more careful borrowing and lending decisions.

Mistakes may have been made and lessons learned from past experiences need to be taken into consideration in a HIPC III initiative. Much more could be learned if higher quality data were available. The improvement of the data generating systems of the HIPCs is important to yield high quality research and enable a better assessment of the impacts of HIPC measures. Likewise, additional efforts are required from all major institutions involved in the HIPC initiatives to report fairly accurate estimates of the current debt relief provided under the initiatives. However, the effect of debt relief is a long term process; success cannot be expeced overnight.

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Appendix

Appendix 1: The Heavily Indebted Poor Countries (HIPCs)

Table 6 Grouping of HIPCs under the enhanced HIPC Initiatives.

HEAVILY INDEBTED POOR COUNTRIES (HIPCs)				
HIPC Relief Approved at Decision Point (27)		Decision Point Not Yet Reached (11)	CompletionPoint Countries (12)	Potentially Sustainable Case (4)
Benin	The Gambia	Burundi,	Benin	Angola
Honduras	Niger	Central African	Bolivia	Kenya
Bolivia	Ghana	Republic	Burkina Faso	Vietnam
Madagascar	Rwanda	Comoros	Guyana	Yemen
Burkina Faso	Guinea	Congo, Rep. of	Mali	
Malawi	Sao Tome and	Côte d´Ivoire	Mauritania	
Cameroon	Principe	Lao PDR	Mozambique	
Mali	Guinea-Bissau	Liberia	Nicaragua	
Chad	Senegal	Myanmar	Niger	
Mauritania	Guyana	Somalia	Senegal	
Congo, Dem. Rep	Sierra Leone	Sudan	Tanzania	
Mozambique	Uganda	Togo	Uganda	
Ethiopia	Tanzania			
Nicaragua	Zambia			

Source: Adapted from World Bank, 2003

Appendix 2: Model Specification

General Form of the Panel Regression Model:

$$\begin{cases} EDT_{it} = f_1\,(HIPC, DSR, PEXP, IIL, AGRO, GDPG, GRC, GOV, CTR, POL, D) \\ DSR_{it} = f_2\,(HIPC, EDT, PEXP, INF, AGRO, GDPG, GOV, CTR, POL, D) \\ PEXP_{it} = f_3\,(HIPC, DSR, EDT, GRNE, AGRO, EBG, AID, GOV, CTR, POL, D) \end{cases}$$

Functional Form of the Panel Model

$$\begin{cases} EDT_{it} = \sum_{j=1}^{N} a_{0j}D_{jt} + a_1HIPC_{it} + a_2DSR_{it} + a_3PEXP_{it} + a_4IIL_{it} + a_5AGRO_{it} + a_6GDPG_{it} + a_7GRC_{it} + a_8GOV_{it} + a_9CTR_{it} + a_{10}POL_{it} + e_{1it} \\ DSR_{it} = \sum_{j=1}^{N} b_{0j}D_{jt} + b_1HIPC_{it} + b_2EDT_{it} + b_3PEXP_{it} + b_4INF_{it} + b_5AGRO_{it} + b_6GDPG_{it} + b_7GOV_{it} + b_8CTR_{it} + b_9POL_{it} + e_{2it} \\ PEXP_{it} = \sum_{j=1}^{N} c_{0j}D_{jt} + c_1HIPC_{it} + c_2EDT_{it} + c_3DSR_{it} + c_4GRNE_{it} + c_5AGRO_{it} + c_6EBG_{it} + c_7AID_{it} + c_8GOV_{it} + c_9CTR_{it} + c_{10}POL_{it} + e_{3it} \end{cases}$$

Dependent Variables (03)

EDT_{it}= *External Debt Stock (in percent of gross domestic product) of the ith-country in year t*
DSR_{it}=*Debt Service Ratio (in percent of exports of goods and services) of the ith-country in year t*
$PEXP_{it}$=*Poverty Expenditures (in percent of gross domestic product) of the ith-country in year t*

Independent Variables (12)

$HIPC_{it}$ = *HIPC debt relief (in percent of gross domestic product) of the ith-country in year t*
INF_{it} = *Inflation rate (consumer price) of the ith-country in year t*
$AGRO_{it}$ = *Annual growth of export of goods and services (%) of the ith-country in year t*
$GDPG_{it}$ = *Annual growth of gross domestic product (%) of the ith-country in year t*
$GRNE_{it}$ = *Gross national expenditures (in percent of gross domestic product) of the ith-country in year t*
GRC_{it} = *Gross capital formation (in percent of gross domestic product) of the ith-country in year t*
EBG_{it} = *External balance on export of goods and services of the ith-country in year t*
AID_{it} = *Aid (in percent of gross national income) of the ith-country in year t*
IIL_{it} = *IBRD and IDA loans (in percent of gross domestic product) of the ith-country in year t*
CTR_{it} = *Control of corruption index of the ith-country in year t*
GOV_{it} = *Government effectiveness index of the ith-country in year t*
POL_{it} = *Political stability index of the ith-country in year t*

a_{0j}; b_{0j}; c_{0j} *are intercept coefficients for the ith-country in each equation respectively.*
$a_1 \ldots a_{10}$; $b_1 \ldots b_9$; $c_1 \ldots c_{10}$ *are slope coefficients, common to all countries in the sample.*
e_{1it}; e_{2it}; e_{3it} *are error terms in each equation respectively.*

D_{jt} = *Dummy variable corresponding to each country*= $\begin{cases} 1 \text{ if } j=i \\ 0 \text{ if } i \neq j \end{cases}$

N= number of countries (27)
i= country

Appendix 3: Definition of governance indicators

The six main governance indicators are adopted from Kaufmann et al. (2002).

Voice and Accountability includes in it a number of indicators measuring various aspects of the political process, civil liberties and political rights, measuring the extent to which citizens of a country are able to participate in the selection of governments

Political Stability and Absence of Violence combines several indicators which measure perceptions of the likelihood that the government in power will be destabilized or overthrown by possibly unconstitutional and/or violent means, including domestic violence and terrorism.

Government Effectiveness combines responses on the quality of public service provision, the quality of the bureaucracy, the competence of civil servants, the independence of the civil service from political pressures, and the credibility of the government's commitment to policies.

Regulatory Quality instead focuses more on the policies themselves, including measures of the incidence of market-unfriendly policies such as price controls or inadequate bank supervision, as well as perceptions of the burdens imposed by excessive regulation in areas such as foreign trade and business development.

Rule of Law includes several indicators which measure the extent to which agents have confidence in and abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts.

Control of Corruption measures perceptions of corruption, conventionally defined as the exercise of public power for private gain.

Appendix 4: Directions of interaction factors

Table 7: HIPC responses for different governance levels

Indicators	Main Effect	Interaction Coefficients	Range	HIPC Responses
Control of Corruption	-8.343	-6.353	-1.105	-1.323
(Debt Stock)			1.100	-15.331
Political Stability	-1.596	2.839	-1.780	-6.649
(Debt Service)			0.710	0.420

Source: Own computations; data from Kaufmann et al., 2002; GDF, WDI and HIPC documents, 2004.

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