

## THE HIPC INITIATIVE: HOW REALLY GOOD IS IT?

by

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The cancellation of the poor countries' debt has been high on the agenda of policymakers for quite a long time. The latest steps taken in Koln, Germany in June 1999 have furthered the effort to a significant level. Although much remains to be done, the HIPC initiative, if properly managed, could well have the same impetus on the very poor countries as the Brady deal had in the late eighties on the middle income debtors. Despite the criticism that were explained at the time, it is indeed now fairly accepted that the Brady deal was influential on the recovery of countries like Mexico. Will the HIPC do the same to the very poor countries?

Rather than reviewing in detail a process which has already received much attention, this paper will try to emphasize a number of critical points which may highlight some of the difficulties which are yet to be overcome. The crux of our argument, following the analysis that had been performed on the Brady countries, is to distinguish nominal and actual debt cancellation. This is all the more critical in the context of the HIPC initiative that creditors countries might be tempted to count as "aid" what really amounts to a cleaning of the book.

The view that I will develop in this paper is indeed that the perspective on the HIPC initiative is totally distorted by the fact that -contrary to the Brady deal itself- it lacks all perspective on the "market value" of the debt which is written down. The market value that I have in mind is a different concept from the present value calculations which are usually performed when dealing with the HIPC. Those calculations re-assess the discount factor and correct for the conditionality of the debt (carrying in average an interest rate of about 2% against a market rate of -say- 7%). The appropriate "market value" is one that takes account of the risk of non-payment: arrears, rescheduling and "constrained" refinancing of various sorts.

This market value perspective is not only semantic, it is not only a way of saying that the write-off amounts to less than is usually assumed by the donor countries. It is also a warning, and a means of addressing some of the alternative to the process which is engaged. It is a warning, first, against the

risk that donors countries might scale down aid by an amount which is tied to the debt write-off that they have granted. If this was indeed carried out, even only partially, it may turn out that the exercise would be detrimental to the debtors. This would be all the more worrisome that the trend of net official development assistance (ODA) is negative, both in relative and in absolute terms. If one take for instance, the share of net ODA in the GNP of the Development Assistance Committee (DAC) countries, it declined to 0.22 percent, compared to 0.35 percent in the mid-80's. (Cf. Global Development Finance, 1999). Only four countries -Denmark, the Netherlands, Norway and Sweden- exceeded the United Nations target of 0.7 percent of GNP in 1997. Only three countries -Ireland, Sweden and the United Kingdom- announced increased in aid budgets.

This market perspective also offers an agenda for policymakers. If a "market price" could be agreed upon by all parties, which would value properly the debt of the HIPC, then one should allow the debtor countries to go beyond the current initiative. They could, indeed, be offered the option to repurchase, at the corresponding market price, more debt than what has been designed by the current debt cancellation scheme. For those countries who want to, this could open the way to a final exit.

The paper will proceed as follows. I will first review critically the debt thresholds that are usually adopted when assessing the amount of debt relief that is needed. I then turn to adopting a market value perspective on the debt involved. I then review some of the alternative proposals that have been put forward by NGOs and multilateral agencies and then suggest a proposal to enhance the initiative.

## **1 A market perspective on debt**

### **1.1 Debt and repayments**

The market perspective that I want to emphasize is totally different from another, although an equally crucial, exercise which amounts to estimate the debt in present value terms. Present value calculations take account of the fact that much of the HIPC' debt is made at concessional terms so that the stream of principal and interest falling due do not add up, when discounted at market rate of interest, to its face value but to less. In average, the ratio

of present value to face value is around 55% (see table 1 for breakdown). Present value calculations, however, do not scale down the service of the debt by the probability that it will indeed be honored, nor (which almost amounts to the same thing) by the likelihood that the debt will have to be refinanced (either through new loans, explicit rescheduling or arrears). Such expectations, instead, are the driving force behind market values, and they are those which should be taken into account when assessing the scope of the HIPC initiative.

As a first shot on this question, one can refer to the Global Development Finance (GDF) calculations. One can read that the debt service of the debt of the severely indebted low income countries amounted to 87 bl \$ (on an overall stock of 211.2 bl). Yet the net transfer item (which is the difference between how much the country got altogether from its creditors and how much it actually transferred to them) is virtually nil, in fact slightly positive (which means that altogether it actually received more than it paid on the debt line).

This perspective is a familiar issue that has been raised repeatedly at the time of the Brady deals. When a creditor reduces its claim on a debtor by 1 dollar, by how much does it really reduce the burden of the debtor? At the time of the Brady initiative, the debt of most middle income debtors was quoted on a secondary market, in which commercial banks would trade and sell their assets. In some extreme cases such as Bolivia, the discount on the debt came down as low as 95%, which meant that the creditors were willing to sell 5 cents a claim nominally priced one dollar. The Brady initiative itself offered to cut the nominal value of the debt by a significant amount. In the (extreme) case of Bolivia for instance the Brady deal carried a 84 percent discount. In the less severe case of Brazil and Mexico, one of the key options offered to the Bank involved a 35 percent discount. In the case of a country like Ecuador, which recently got in the midst of a new foreign debt crisis, the discount agreed upon in the Brady deal amounted to 45 percent. Yet, in the immediate aftermath of the Brady deal, the debt was still quoted at a significant discount. In the case of Argentina, the discounted bond was traded at 61 cents on the dollar (27/07/92), in the case of Nigeria which is perhaps closer to the case at hand now, it was quoted at 25 cents on the dollar (i.e. a 75% discount) after a cash-back at a 60% discount (and despite the collateralized capital that was granted for the deal)! These numbers, which were an integral part of the debate at the time of the Brady deal, are strong evidence of the discrepancy between the market value of the debt at the time when the Brady deals were signed.

## 1.2 Equilibrium market prices

These prices are a strong indication of the fact that the market did not expect full repayment of the developing countries debt, even (on the day) after the Brady initiative was implemented. This at least should imply that debt reduction initiative should not be counted at face value. As Bulow and Rogoff (1990) pointed out in a seminal paper, there is even more to it than the sheer discount factor. It is indeed critical to make a distinction between *average* prices (which are embodied in secondary market prices) and *marginal* prices which correspond to the effect, at the margin, of reducing the debt. In order to grasp the significance of this critical distinction, assume that the market expects a country to generate, in present value term, a fixed amount  $X$  of resources that will be shared by the creditors. The market price of the debt, call it  $q$ , is then simply worth:

$$q = X/D$$

in which  $D$  is the outstanding stock of debt which lay claim on this pie  $X$ . Now assume that the debt is written down, at the margin by a fraction  $x$ . So long as the new value  $D' = xD$  is still smaller than  $X$ , the price of the new debt will rise to

$$q' = X/D',$$

yet keeping the overall market value of the debt, call it  $V$ , unchanged at  $X$ .

In other words, despite a debt reduction initiative which may be significant, the net benefit to the country of the debt reduction scheme might be nil, inasmuch as it will still have to pay the same amount  $X$  after the deal. Following Bulow and Rogoff, we must then distinguish the average price (which is, in principle, observable on the secondary markets) and the marginal price,  $q_m$ , which can be defined as :

$$q_m = \frac{\partial V}{\partial D}$$

i.e. the price which indicates, at the margin, how much can a debt reduction scheme bring, in expected repayment, to the country. In the extreme example where, no matter what, the country will always pay  $X$  (so long as the debt is larger), one sees that the marginal price of the debt is zero so long as the debt is larger than  $X$ .

These examples are not only speculative. They were applied by Bulow and Rogoff to the analysis an one of the early buy-back exercise that was

performed, after the debt crisis of the 80's by Bolivia. Sponsored by various donors, the Bolivian government repurchased on the market *half* the face value of its debt. As a result, the price simply shoot up to twice it earlier value (from 5 cents to 10 cents on the dollar), leaving little relief of Bolivia once the buy-back was performed.

>From a more theoretical point of view, write that the value of the debt as the present discounted value of future payments  $X_t$ , which are themselves drawn from a probability distribution  $dF(X)$ ; (which means that  $F(x)$  is the probability that  $X$  is lower than  $x$ ). Then the value can be written as :

$$V = \left\{ \int_0^D X dF(X) + D[1 - F(D)] \right\}$$

The first part of the left hand side correspond to the payments which are forwarded by the country in the case when their payment capability  $X$  is lower than the face value falling due; the second part corresponds to the expected payments associated to the case when the debt is repaid in full. One can write:

$$1 - \pi = 1 - F(D)$$

as the probability that indeed, the country's resources exceed (in present value terms) what it owes to its creditors. So long as the stream of feasible payment remain below  $D$  then the country only pays  $X$  ; when they are worth more, then the country repays  $D$  on full. One can write the average price as:

$$q = \frac{V}{D} = \frac{1}{D} \int_0^D X dF(X) + [1 - F(D)]$$

and the marginal value:

$$q_m = \frac{\partial V}{\partial D} = 1 - F(D)$$

which is always lower than the average value, and simply corresponds to the probability that the debt will be repaid in full. In the extreme case when one *never* expect the debt to be repaid in full, then the marginal price of the debt, which measures in present value term, the benefit of (marginal) debt reduction is simply *zero*. This is typically the case that the Bolivian authorities discovered, once they realized that cutting by half their outstanding debt did nothing to reduce its market value.

This exercise, however simplistic, does underline the need to distinguish a strict nominal accounting of debt write off from a "market based" accounting which analyzes the extent to which expected forthcoming payments are reduced. They furthermore point to the idea that market prices themselves tend to exaggerate the benefits of debt write off, in as much as they are usually lower than the true price of the write off, namely the marginal price of the debt.

## 2 Thresholds of solvency

As a starter to the empirical analysis, it is important to have in mind a minimum benchmark to gauge the extent to which debt should be interpreted as too large. Three ratios are usually taken into account: debt-to-export, debt-to-GDP and Debt-to-Tax receipts. The HIPC initiative essentially rely on the most popular of the three, the debt-to-export ratio, and give an additional, albeit at this stage, a marginal one to the debt-to-tax ratios. Originally, the benchmark debt-to-export ratio has been set at 200%; after the Koln agreement it has been reduced to 150%. The debt-to-tax ratio was originally set at 280%; after the Koln agreement it has been lowered to 250%; although it comes into play only if the export to GDP ratio is above 30% and the tax to GDP ratio is above 15%.

To start with, it may be useful to start with the simple question: where do these numbers come from, can we rationalize them? We can think of at least four different methods aimed at suggesting where these critical numbers should lie.

### *i) Average debt ratios at the time of the first rescheduling*

This is the simplest and most naive method, yet it is certainly a telling indicator: what was in average the debt level that was reached when countries experienced their first debt crisis? The answer comes as follows: for Latin America as a whole the average value corresponds to a debt-to-export ratio worth 250% and for the world as a whole it stood at 270% in the eighties. The number is probably an upper bound to the number that we must keep in mind in order to assess the probability of such event to occur.

### *ii) Revealed preference argument*

Another method consist in extrapolating the servicing capacity that was observed in the past, as a manner of computing the upper limit to the debt ratio. At the climax of the debt crisis, in the mid-eighties, the countries which were highly in debt did transfer abroad a significant amount of resources. As theoretical models would show (see Cohen (1991)), one can take these transfer of resources as one indirect way of evaluating the cost of debt repudiation that the debtor country would have suffered, had it *not* be willing to service its debt. From such indirect estimate, one can extrapolate the upper bound of the debt-to-export (or for that matter debt-to-GDP) ratios that one consistent with such an implicit "collateral".

If one takes the "top five" debtors of Latin America (Argentina, Brazil, Chile, Mexico and Venezuela), one can reconstruct an upper bound for the debt-to-GDP ratio of about 80%. (Which is indeed the benchmark taken by the Word Debt Table). One can see however that the argument behind the 80% benchmark hinge on the assumption that the net transfers that were observed at the peak of the worst debt crisis could be repeated in case of necessity! Although our theoretical model suggest that this should indeed be the case, there is little doubt that 80% ceiling is definitely an upper limit of solvency.

### *iii) Tax burden*

The same revealed argument method that was used above, can be used in principle, to assess the upper bound, as a fraction of its tax base, of a debt that a government might service. Although we walk here on more uncertain waters, one can take as an upper bound the value that was reached by such large debtors as the governments of Ireland, Belgium and Italy, that did succeed to reach primary surpluses aimed at stabilizing their debt-to-GDP ratios. At the climax of their efforts, Belgium reached a primary surplus amounting to 10% of its tax base; Italy 12% and Ireland 15%. If one takes Ireland data as "the" upper bound, and if one applies again the same technique, one then gets an upper bound for the debt-to-tax ratio of 300%. Although the number appears to be near the 290% benchmark that we reached previously, they are not meant to capture the same ceilings. In the case that was discussed in the growth context, the ceiling was meant to capture the external debt-to-GDP ratio, while in the revealed argument that we sketch now, the ceiling captures *total* government debt (both domestic and foreign). If one trusts the order of magnitude that we reached, this might be an indication of the fact that foreign debt is implicitly favored over domestic debt (the latter being junior the former).

*iv) Risk of debt crisis*

One can also assess what is the best predictor of a debt crisis and use such predictors as an indirect way of measuring the thresholds of solvency. Building upon previous research, I have developed an empirical method based upon the risk of a debt crisis (measured by the risk of a debt rescheduling) which is summarized in appendix 1. When account is taken of all other relevant characteristics of a debt crisis (education, economic policy, openness...), the debt-to-GDP ratio is the most significant predictor of a debt crisis. When a "blind assessment" of the solvency of a country is performed instead, a debt to -export ratio turns out to be a better predictor than the debt-to GDP. But it also actually turns out in this case that the debt-to tax ratio is yet a better predictor of a debt crisis, when a blind assessment is requested. In order to translate these results into thresholds of solvency, I have computed the ratios for which the risk of a debt crisis exceeds 60% (which itself appears to be the most significant ratio so far as the impact on growth is concerned). I obtain for each of these criteria the following numbers:

*Debt ratios which triggers the risk of a debt crisis*

**Debt-to-GDP: 50%**

**Debt-to-Export: 200%**

**Debt-to-Tax: 300%**

As one sees, these ratios are fairly in line with those which are traditionally used for assessing debt-to-GDP and debt-to-export ratio.

Beyond the numbers themselves, the previous discussion shows that the debt-to-tax ratio should be the relevant benchmark. One argument against using this ratio is that it is open to a moral hazard issue: governments could be tempted to lower the tax base in order to raise the amount of a debt write-off that they might obtain correspondingly. One simple alternative to using *actual* debt-to- tax ratios could be to set a *normative* estimate of tax receipts that the IMF could determine as an objective.

### 3 Pricing the HIPC debt

#### 3.1 Econometric estimates

Previous attempts to measure the elasticity of the price of the debt with respect to its nominal value can be found in by Purcell and Orlanski (1988), Sachs and Huizinga (1987) or in my previous work (Cohen 1990, 1992). I have estimated an equation, representative of these earlier studies, as follows:

$$\text{Log } p = 5.06 - \underset{(0.152)}{0.653} \text{Log} D/X - \underset{(0.603)}{2.231} A/D - \underset{(0.373)}{1.016} R/D + \text{Time Dummies} \quad (1)$$

$R = 0.560$  Pooled equations for 1986.12 and 1997.12 data. 60 degrees of freedom. (Standard errors in parenthesis).  $p$  = price of the debt on the secondary market;  $D$  = debt;  $X$  = exports;  $A$  = arrears;  $R$  = rescheduling performed since 1982.

This equation (based on pre-Brady deal data) embodies quite a few striking results. To start with, it predicts that the critical ratio of debt-to-export above which a secondary market discount (price lower than 100%) arises is (somehow miraculously) a debt-to-export ratio of 200%. This is then perfectly in line with the results of the previous section: a debt crisis emerges when the creditors do not expect full repayment. From that point on, the (partial) elasticity of the secondary market price with respect to the debt is estimated at -0.653, which means that a 10% increase of the debt reduces the price 6%.

Another striking feature emerges, namely, the impact of debt rescheduling and arrears upon the valuation of the debt. Table 1 shows how these estimates vary with different hypotheses regarding debt-to-export ratios and the severity of the crisis. Starting with a debt-to-export ratio of 200%, rescheduling lowers the secondary market price from 100% to 36%, and the build up of arrears further down to 28%. Since, as we have seen in the previous section, debt rescheduling occurred around 250%, one sees that formidable impact financial crisis on the market valuation of the debt. By 1990, all countries with a secondary discount had rescheduled their debt at least once, except Hungary, which correspondingly depressed dramatically the market price.

D/X	No crisis	Crisis	Severe crisis
200%	100%	36%	27.8%
250%	86%	31%	24%
300%	77%	28%	21%

*Crisis = Rescheduling*

*Severe crisis = Rescheduling and Arrears*

*D/X = Debt to Export Ratio*

**Secondary market price**

**Table 1**

Building upon these table, the situation of African countries would stand at a Debt-to-Export ratio of 250%, and in the "severe crisis" column, since the average rescheduling figure stands at about in the 1990's.

There is clearly a problem of interpretation here. Why is it that the same ratio of indebtedness yield so different market valuation, when the debt is rescheduled and when it is not. Before answering the question, it should be clear that the same phenomena is at work nowadays, in Ecuador. Ecuadoran debt has lost about half of its pre-Asian crisis value slipping down to a low of 30 cents in the dollar in September 1999 with a debt-to-export ratio of about 300%, this is not far the "crisis" scenario number that is reported in table 1. How can we think of the impact of the debt crisis into the market valuation of the debtor? To start with, there is clearly a "systemic" risk that frighten investors. When a country defaults openly or implicitly, it clearly raises the fear that everything might go wrong, so that investors would all rather leave than stay. As we have shown, however, even post Brady deals prices were severely discounted, although at the time, the systemic risk had clearly evaporated. As Ecuador shows to-day, defaults points directly to an individual risk on the country itself. There are so many uncertainties on the way countries operate that default clearly sends a powerful signal on a country's capacity to honor its commitment . As such, it is not surprising that it should trigger major shifts on the valuation which is performed by the investors.

Investors may be individually turned into thinking ex ante that they will get more than they actually receive; for instance they may also think that they will have a better deal than their colleagues. What the repeated history of default and financial crises amply demonstrate, however, is that investors as a whole have a strong tendency to under-report the risk at hand. Default

and financial crises come, from that perspective, as a moment of truth rather than as an "exogenous" factor.

In order to address this issue properly, it then becomes critical to assess the risk of a debt crisis that inevitably comes with the build up of the debt. Building upon the model presented in appendix 1, I have estimated how the average probability of a crisis varied with debt and recalibrated accordingly the price equation. Putting all these results together. I can estimate the dependency of price on outstanding debt, when account is directly taken of the effect of debt on the probability of a debt crisis. Using the equations presented in appendix 1, I find the following numbers:

D/X	Probability (in %)
200%	60%
250%	69%
300%	93%

**Table 2: Probability of a debt crisis**

I will then plug these probabilities in the price equation that is shown above, by weighting by the corresponding risk the effect of arrears and rescheduling.

The regression presented above has another drawback however. It does not account for the difference between marginal and average price. Indeed, it is stated in such a way that the marginal price  $p_m$  is related to the average price  $p$  by a straightforward relationship:

$$p_m = (1 - \varepsilon)p$$

in which  $\varepsilon$  is the elasticity of price with respect to debt, i.e. here,  $\varepsilon = 0.653$ . In other words the marginal price is always 65% lower than the average price, which can be true in average, but certainly not always, as section 1.2 shows. In order to address the first issue, I have used a more flexible equation, which allows the difference between the average and the marginal price to vary so as to let implies be identical and equal to one when the country is solvent and that also allows to compute the critical threshold when the marginal price of the debt becomes nil.

More specifically, I have tested a logistic equation of the form:

$$\text{Log}(p/1 - p) = -\varepsilon \text{Log}D/X + \text{Other variables}$$

so that the relationship between the average and the marginal price becomes:

$$p_m = p[1 - \varepsilon(1 - p)]$$

with this formulation, a country which gets near solvency ( $p = 1$ ) is also one in which the ratio of the marginal to the average price goes to 1. On the other hand, one can find a critical value  $p^*$  of the price  $p$  for which the debt becomes marginally value less. This occurs when  $p_m = 0$ , i.e.:

$$p^* = \frac{\varepsilon - 1}{\varepsilon}$$

with the data presented above, I reached a value

$$\varepsilon = 1.47$$

which implies that the critical price when the debt becomes valueless is obtained with:

$$p^* = 0.32$$

In part coincidentally (but as suggested by the theory), this corresponds to the average value of the secondary market prices of middle income debtors prior to the Brady deal. One also sees from table 3 that, in the case of a severe crisis, all countries whose debt to export ratio exceeds 200% have reached the stage where the marginal value of the debt is gauged to be nil, in fact negative, by secondary market participants. In those cases, one could perhaps reach a stage where a "Debt Laffer Curve" problem is at hand, as Paul Krugman once put it.

Plugging these results into the format of table 1 (taking average export-to-GDP ratio), and using the relationship between marginal and average price that is suggested by the logistic model, I now reach the following calibration exercise:

D/X	Secondary Market Price	Marginal Price
150%	61%	30%
200%	46%	9.5%
250%	36%	2.1%
300%	23%	-3%

**Secondary Market Price Estimates**

**Table 3**

This table shows that the marginal value of the debt is virtually nil, in average and when account is now taken of the underlying risk of a debt crisis, when the debt to export ratio is at 250%. Lowering the debt due by the HIPC around that number is then no gift to the countries, so long as the debt reduction remains marginal. When the debt is reduced down to 150% instead, the benefits become more substantial, although a significant marginal discount remains. In average, the price is then worth around 60% of its nominal price, against 36% when the debt to export ratio is around 250%.

### 3.2 Estimating the impact of the hipc initiative

We are now able to assess the significance of the HIPC initiative. Relying upon the marginal price of the debt, we can measure the alleviation that is carried by the initiative through the formula :

$$\Delta V = \int_{D_1}^{D_0} \frac{\partial V}{\partial D} dD = \int_{D_1}^{D_0} p_m(D).dD.$$

This formula simply states that when debt is reduced from an initial value of  $D_0$  to a lower value of  $D_1$ , the debt burden of the country is only alleviated by a number which corresponds to the incremental effects that are captured by the marginal price. Based upon the numbers which are shown in table 2, I then reach the estimates that are presented in table 4 below.

I made two calculations, one which is based on the Koln agreements, the other one which is based on the pre-Koln formulas.

$(D/X)_0$	$\Delta V/X$ (Koln)	$\Delta V/X$ (Pre-Koln)
150%	0	0
175%	5.4	0
200%	8.6	0
250%	11.5	2.9
300%	11.3	2.7

**Impact of the HIPC initiative (in % of exports)**  
**Table 4**

This table shows the significance of the Koln agreements compared to the previous version of the initiative. Before Koln, the target which was then taken was to reduce the debt-to-export ratio down to the 200% mark. As table 3 makes it clear, this is a zone where the marginal value of the debt is lower than 10% of its nominal value, so that the real effect of the initiative was bound to be very limited. The post Koln agreement, instead, is clearly more generous, as it reduce the debt down to a point where the effect can be felt. One should remain cautions, however, with the significance of the shift. The numbers shown are stock data. In flow terms (in percentage), say, of the budget, they would be much smaller.

### 3.3 Impact on growth

The easiest way to capture the direct impact of the HIPC initiative is to evaluate the effect of the risk of a debt crisis on growth . I rely here on a growth regression that I previously estimated, which is itself based on earlier work by Easterly and Levine (1997).

Growth is regressed upon a set of indices which depend on : log of initial income per capita of the country (Lrgdp), log of secondary school enrollment of children (Lenr2) , log of investment (Linv), an index of ethnic diversity (Ethn) , term of trade (Tot) , black market premium weighted by openness (Opb). I show that the risk of a debt crisis (Pres) is also a significant variable, which has the merit of explaining a large part of the reason why Latin American (Latinca) has systematically grower below its potential over the part three decades. I present here one such regression.

**Table 5: Growth and Financial crisis**

Variables	(t-statistic)
C	-0.21 (8.7)
DUM80	$-0.09 \cdot 10^{-2}$ (-3.1)
AFRICA	$-0.02 \cdot 10^{-2}$ (-0.59)
LATINCA	$-0.03 \cdot 10^{-2}$ (-0.9)
LRGDP	-0.019 (-6.9)
SW	0.012 (3.2)
LENR2	$0.8 \cdot 10^{-2}$ (3.01)
PRES	-0.013 (-3.43)
LINV	0.013 (4.75)
TOT	0.07 (2.37)
OPB	-0.06 (-5.8)
ETHN	-0.021 (-4.0)
Adj.R <sup>2</sup>	0.64

*Dependent variable: per capita growth rate; 1970s and 1980s*  
(t statistics in parentheses)

One can then estimate the impact of the HIPC initiative from the numbers that are obtained above. One can assess that the Koln agreement would reduce the risk of a debt crisis from 70% to 39%. From the point estimate that is presented in table 5, one then get that the impact of the initiative on growth could reach *0.4 percentage points* which is a very significant number. As a comparison, the pre-Koln initiative would have been estimated yield about 0.1 percentage point only.

The potential for growth, however, would be significantly raised if the debt write off were to be complete. After all, bringing the debt-to-export ratio down to 150% is not overwhelming, when one acknowledges that troubles usually start when a country passes the 200% mark. We now review some suggestions to improve the deals.

## 4 Policy Implications

### 4.1 NGO's view points

A number of NGOs have expressed doubts on the initiative. Jubilee 2000 has long pleaded for a full write-off of the debt. Jubilee 2000 is certainly the most well known organization on such matters. Jubilee 2000-Africa has argued that African debt is too heavy to be repaid which is why it should be unconditionally written down. They plead that the resources which would then freed could be used for social services, especially health and education. They also favor a better governance of Africa as a pre-condition for a new round of indebtedness. Jubilee 2000-Japan has requested a write off of Japanese public claims on HIPC. Jubilee 2000 has also favored the creation of a new arbitration court, that would give debtor nation a larger role in settling financial disputes.

Oxfam (Oxford Committee for Famine Relief) has suggested to grant a premium to the HIPC governments engaged in poverty reduction. They suggest to measure that commitment through the percentage of resources that is committed to social policies. Oxfam has also criticized the sustainability thresholds that were adopted for the HIPC initiative. They suggest:

- Debt-to-export in the range of 100%-150%.
- Debt-to-Government revenues on the range 150-170%.
- Debt service to export in the range 10-15%.

They also add another criterion: debt service should not exceed 15% of government's revenues. They also requested that the review period should be reduced from 6 to 3 years (a call which has been in part taken into account after the Koln summit).

CAFOD (Catholic Fund for Overseas Development) emphasizes the need to reach a level of external debt which is both sustainable and consistent with potentially bad shocks that could hurt the countries. They emphasize the need to adjust the service of the debt upon the government revenues, and be consistent with the other expenses that the government must commit to human development.

## 4.2 Alternative policy implications

As one sees many of the critiques stated by the NGOs deal with the question of taking tax receipts as the appropriate denominator. This is consistent with the econometric results that I have presented in section 2. All that it would take, to amend the initiative along these lines would be to extend the clause regarding the debt-to-tax ratio to all countries (and not only to those who have a large debt to export ratio).

The NGOs are also interested in earmarking the benefits of the HIPC to poverty reduction measure. This is certainly reasonable, although they share here the illusion that the debt reduction initiative has brought down the burden of the debt at face value. If one takes our own calculation, the debt relief that is brought to a typical HIPC country whose debt goes from 250% to 150% is only worth, in practice, 10% of its exports. None of the critiques addressed by the NGO actually take account of the perspective that we have raised, namely the discrepancy between face and actual write down. One simple, yet essential, suggestion that we could make at this stage would be to make the book keeping exercise clean. The lenders could split the initiative into two components: reporting losses on the one hand (for about 90% of the deal) and granting actual relief for the remaining part. This would have the merit of not distorting the account of ODAs and refrain the donors countries from the temptation to scale down other dimensions of the aid they are granting. This could also help the recipient countries acknowledge the degrees of freedom they actually get for other purposes such as poverty reduction.

Another suggestion that would directly draw upon our previous analysis would be to authorize countries that want to buy-back their remaining debt to their creditors. Clearly, the lessons drawn by Bulow and Rogoff from the

Bolivian buy-back have to be taken into account. One need to fix a pre-arranged price at which the deal should be made, that explicitly rely upon the marginal value that is surrendered by the creditors which itself depends on the magnitude of the transact. If a country were to repurchase all of its remaining debt, the appropriate price would be the average price. In the case of the HIPC, this would represent à 40% discount (see Table 3). But if instead, countries were willing to purchase lower amounts (say bringing the debt further down to 100%), then the marginal price is the correct one. From table 3, a 70% discount would be a good starting point for the discussion.

Surely, these number are only indicative and could be open to political considerations. But it should be clear that both the creditors and the debtors should have a strong interest in seizing this unique opportunity to clear out their books, which can only be achieved by acknowledging the true nature of the transaction involved.

## 5 Conclusion

The debt crisis of the poor countries has taken many dimensions that the HIPC initiative could alter. For one thing, it has created a financial risk that has a negative impact on private creditors. The significant correlation between growth and external debt shows the potential importance of a debt reduction scheme of the macroeconomic prospect of a developing country. Cleaning up the debt mess also has an indirect but equally essential role in shifting economic policy decisions. Governments which feel vulnerable to a debt crisis tend to adopt more protectionist policies, and trigger a self fulfilling pattern of trade and financial autarchy that tend to raise the likelihood of a crisis. The same could be said of exchange rate misalignment: they are not only bad, at first order, for the sectors which are open to foreign competition, they also raise the protectionist pressures.

Alleviating the debt crisis also a direct impact on the welfare of the agents that go beyond its direct impact on growth. A country that is trapped in a debt crisis find it extremely hard to smoothen the impact of volatile terms of trade. This is perhaps the point where the current initiative will have the most important influence: by allowing countries to borrow against transitory adverse shocks. This is also the point where the magnitude involved are more telling. If a country whose debt to export ratio is at 150% allows itself to let it grow to 200% in case of a bad shock, how large a terms of trade shock can

the country absorb? Think of a transitory shock which, say, will not exceed three years. This says that the country will be able to absorb a terms of trade shock not exceeding say 15%, which is about the standard deviation of terms of trade. This is not insignificant, but this shows how much remains to be done if ones wants to go beyond and boost capital exports. The political agenda is then far from being closed. As I have stressed in this paper a book accounting exercise is a critical first step to acknowledge how little has really been made for these countries, and how much remains to be done on that front.

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## APPENDIX 1

### Risk of a debt crisis

I have constructed a variable RES which is zero if the country never rescheduled and 1 if the country did reschedule (for each of the two sub-periods 1970s and 1980s). From such variable, one can estimate a probit model in which the probability of a rescheduling (PRES) is regressed upon the beginning of period Debt-to-GDP Ratio (DEBT), the liquidity of the Economy (LLY) the Latin American dummy and the Sachs-Warner variable OPEN (which takes a value of one if the country liberalized its trade before 1970). (Interestingly the African Dummy is not significant).

The results come as follows:

$$\begin{aligned}
 PRES = & c + \underset{(3.20)}{1.83} Latin\ America + \underset{(3.2)}{0.04} DEBT \\
 & - \underset{(-2.54)}{2.06} OPEN - \underset{(-3.0)}{4.22} LLY
 \end{aligned}
 \tag{A1}$$

*Percentage of correct predictions: 0.90.* t statistics in parentheses.

One sees, as should be expected, that the debt variable is highly significant. The Latin American Dummy is very significant, pointing to a regional factor that is well documented in the debt literature. Interestingly, the Sachs-Warner variable is also highly significant: those countries which have liberalized trade are also less likely to reschedule their debt (in the eighties). It is not totally obvious to understand the channels for which this correlation stands, and to some extent, it takes us back to the ambiguous status of this variable. It can either be taken as an indicator of "good management" in general, or as an implicit measure of the signalling effects of trade liberalization upon the credit rating of a country.

Let us investigate here other specifications that might be relevant for predicting the debt crisis. One can think of at least two other indicators: Debt/Export and Debt/Tax Ratio. The first indicator is most often used for analyzing the solvency of a country to the extent that it takes as a denominator the "hard" currency earnings of a country; it is the key indicator

behind the HIPCs. The second indicator is less often used, and relates to the fact that most LDC debt is government debt which has to be serviced out of government revenue. When dealing with the same type of equation as (A1), then the debt-to-gdp ratio is always a better predictor of the debt crisis than the two alternative ratios.

If instead we try an "unconditional predictor" (i.e. univariate regressor) of a debt crisis (leaving aside the liquidity of the economy or the trade openness variable) then one finds that the debt-to-export ratio dominates the debt-to-gdp ratio. We are then led to a single comparison: which of debt-to-tax or debt-to-export is a better unconditional predictor of debt crisis. The result turns out to favor debt-to-tax. When both variables are put together we indeed obtain:

$$PRES = -0.84 + 1.01 \underset{(2.11)}{\text{Log}D/T} + 0.25 \underset{(0.61)}{\text{Log}D/X}$$

Percentage correct prediction = 0.74. t statistics in parentheses.

To summarize the results obtained in this section, we therefore see that the debt-to-GDP ratio is the best conditional prediction of a debt crisis, when account is also taken of the liquidity of the economy, of the trade liberalization variable of Sachs and Warner and of the Latin American Dummy. When the prediction is made unconditionally upon these variables, then either the debt-to-tax ratio or the debt-to-export ratio turn out to be better predictors, with the former dominating the latter.