WPS 1618

POLICY RESEARCH WORKING PAPER 1618

Analytical Aspects of the Debt Problems of Heavily Indebted Poor Countries

Stijn Claessens
Enrica Detragiache
Ravi Kanbur
Peter Wickham

A review of analytical arguments and empirical evidence about the links between debt and economic performance suggests that heavy external debt may constrain investment and growth and that debt reduction may benefit an economy if the policy environment is right. Should consideration be given to more debt reduction for heavily indebted poor countries—over and above that provided under current mechanisms?

The World Bank
Africa Regional Office
Office of the Chief Economist
and
East Asia and Pacific Regional Office
Office of the Regional Vice President
and
International Monetary Fund
Research Department
June 1996

Summary findings

A group of heavily indebted low-income countries (the HIPCs), most of them in Sub-Saharan Africa, has continued to experience external debt problems. Because the HIPCs' economic characteristics and external imbalances are very different from those of middle-income countries, the approach to analyzing debt problems and debt-reduction initiatives that was developed during the debt crisis of the 1980s of middle-income countries must be modified and complemented in important ways.

With such a need in mind, Claessens, Detragiache, Kanbur, and Wickham revisit the methodological issues underlying the analysis of debt sustainability, as well as theory and empirical evidence on how large debts affect economic performance.

The main question they attempt to answer is: Should consideration be given to more upfront debt reduction for HIPCs, over and above that provided under current mechanisms, or should debts continue to be refinanced, subject to conditionality?

Ongoing refinancing with conditionality, as opposed to upfront debt reduction, reduces moral hazard and gives countries an incentive to maintain good policies. But this "short leash" approach entails transition costs, can create uncertainty, may lack credibility, and can impede local ownership of reform programs.

Upfront debt reduction can create moral hazard problems and may weaken the incentives for maintaining sound policy. But there are theoretical arguments about why a high level of debt can impede investment and policy reform (because it is natural to expect that some of the potential benefits of reforms may be "taxed away" to repay creditors).

Although empirical evidence concerning the hypothesis that HIPCs suffer significant adverse effects from their large debt overhang is inconclusive, evidence from middle-income countries suggests that debt reduction can benefit an economy if the policy environment is right.

But whether there should be further debt reduction for specific heavily indebted low-income countries depends on the facts for each case and requires quantitative analysis of data about different forces at play in the countries involved.

This paper — a product of the Office of the Chief Economist, Africa Regional Office; the Office of the Regional Vice President, East Asia and Pacific Regional Office; and the Research Department, International Monetary Fund — is part of a larger effort to study the debt problems of heavily-indebted low-income countries. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Rommel Velasquez, room E10-029, telephone 202-473-9290, fax 202-477-0169, Internet address rvelasquez@worldbank.org. June 1996. (40 pages)

Analytical Aspects of the Debt Problems of Heavily-Indebted Poor Countries†

by

Stijn Claessens*, Enrica Detragiache**,
Ravi Kanbur*, and Peter Wickham**

* The World Bank and ** the International Monetary Fund.

† The authors have received very helpful comments from Mashood Ahmed, Michael Bruno, Ishak Diwan, Fred Jensen, Nawal Kamel, Jeffrey Katz, Homi Kharas, Fred Kilby, Malvina Pollock, Enrique Rueda-Sabater, Paolo Vieira da Cunha and Ning Zhu of the World Bank, and by Mark Allen, Anthony Boote, Eduardo Borensztein, Stanley Fischer, Rick Haas, Mohsin Khan, and Michael Mussa of the International Monetary Fund.

I. Introduction

After a difficult period following the onset of the debt crisis in 1982 the debt situation of most middle-income debtor countries has improved substantially. However, a group of low-income countries, most of which are in Sub-Saharan Africa, has continued to experience serious difficulties in managing the servicing of their relatively high stocks of external debt. 1/ The various dimensions of the strategy currently adopted by the international community towards policy reform and the debt servicing difficulties experienced by the HIPCs have been highlighted in detail in previous work by the Fund and the Bank (IMF (1995a) and World Bank (1995)). Instruments used have included rescheduling, concessional refinancing, and the provision of further resources, the process being associated with close policy monitoring and conditionality. Under London Terms, and subsequently Naples Terms, the approach has been supplemented by offers of partial debt stock reduction by Paris Club creditors conditional upon the establishment of a track record of policy implementation and ongoing adjustment efforts. Given the low levels of per capita income, most of the HIPCs are expected

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1/ This group of countries, referred to as the heavily-indebted poor countries (HIPCs) includes 41 countries, of which 32 countries are those classified as severely indebted low-income countries (SILICs) according to the *World Debt Tables* 1994-95 classification, an additional seven are countries that have received concessional treatment from the Paris Club, and two are lower middle-income countries that have recently become IDA-only countries (Angola and the Congo). The countries covered are Angola, Benin, Bolivia, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Equatorial Guinea, Ethiopia, Ghana, Guinea, Guinea-Bissau, Guyana, Honduras, Kenya, Lao PDR, Liberia, Madagascar, Mali, Mauritania, Mozambique, Myanmar, Nicaragua, Niger, Nigeria, Rwanda, Sao Tome & Principe, Senegal, Sierra Leone, Somalia, Sudan, Tanzania, Togo, Uganda, Viet Nam, Republic of Yemen, Zaire, and Zambia.

to be offered conditional debt reduction by the Paris Club at a level of concessionality of 67 percent in present value terms on their eligible debt; 2/ post-cut off date debt has not been considered eligible and no further reschedulings are presumed. The indebted country is also committed under Paris Club rescheduling to seek comparable debt relief from commercial creditors and from official bilateral creditors outside the Paris Club. 3/

A number of debt reduction and restructuring agreements have been reached between the HIPCs and commercial creditors, a process aided by the provision of financing for such purposes from official creditors. However, in a limited number of HIPCs, matters remain to be resolved with private creditors. For official bilateral creditors outside the Paris Club, it has proved somewhat more difficult to achieve a coordinated response, in part because of valuation problems and thus determining what might constitute comparable treatment of claims. The multilaterals have continued to concentrate on providing financing and have not played a role in debt-stock reduction (at least with respect to their own loans), except in so far as providing concessional refinancing lowers debt in present value terms.

Creditor and debtor countries as well as the international financial institutions are currently debating whether existing initiatives are sufficient to resolve the debt problems of the HIPCs and, if not, how to

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2/ Countries with a per capita income of more than US$500 and an overall indebtedness ratio of less than 350 percent of exports in present value terms may receive a 50 percent level of concessionality on a case-by-case basis.

3/ The major bilateral creditors outside the Paris Club are Russia, China, and Arab countries, including Kuwait, Libya, and Saudi Arabia. In some instances, notably the claims of Russia, the valuation of non-Paris Club creditor claims has been the subject of dispute between creditors and debtors, reflecting among other things, differences on the appropriate exchange rate to use in valuation.

develop appropriate new strategies. To provide a conceptual framework in which to analyze the HIPCs' debt problem, this paper addresses some of the methodological issues underlying debt sustainability analysis and it reviews the theory and empirical evidence on the effects of debt on macroeconomic performance as they apply to the specific case of the HIPCs.

The debt problems of the HIPCs differ in many dimensions from those of the middle-income countries that received most of the attention of economists and policy-makers during the Debt Crisis of the 1980s. The HIPCs are characterized not only by high debt, but also by relatively poor economic performance and slow economic policy reform. The links between high debt and the implementation of policy reform are thus crucial. Also, in contrast with middle-income countries, the HIPCs have continued to receive a positive net transfer of resources from external creditors and donors--the median ratio of net transfers to GDP was about 11 percent on average during the 1990-94 period. In spite of these large net transfers, most HIPCs are in arrears on at least a portion of their external obligations. Finally, the creditors of the HIPCs are mainly official creditors (bilateral and multilateral) as opposed to private commercial creditors. Accordingly, creditor behavior is not driven primarily by profit maximization, but rather by a more complex set of goals. These considerations suggest that, to provide a useful background to the policy debate, the conventional approach for analyzing debt problems and debt reduction options needs to be adapted to accommodate the specific characteristics of the HIPCs. This is the goal of this paper.

The material is organized as follows: Section II contains a brief overview of the structure and the recent evolution the external debt of the HIPCs. In Section III debt sustainability analysis is discussed and the option available to creditors in case debt is judged to be unsustainable are reviewed. Section IV contains a discussion of the effects of debt (and of debt reduction) on economic performance, while Section V reviews existing empirical evidence on the subject. Section VI concludes.

II. An Overview of the Debt Situation of the HIPCs

As background to the analysis, it is useful to consider some summary information on the external debt situation of the HIPCs. In all of the HIPCs, the external debt stock was at least twice the value of exports on average during the 1992-94 period, with several countries having ratios in excess of 1000 percent. 4/ In contrast to Latin American debt, however, a sizeable portion of the debt of most of the HIPCs was contracted on concessional terms. Because of concessionality, the face value of external debt is not a good measure of the debt burden. The ratio of the present value of future debt service obligations to exports is a more informative indicator. 5/ Figure 1 presents the data for most of the HIPCs (37) averaged for the 1992-94 period; the black bar gives the face value of debt while the cross-hatched bar shows the present value measure of debt (PVDS). After concessionality is taken into account, the debt-to-exports ratio was below 200 percent for four countries and was between 200 percent and

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4/ The data are taken from the World Bank's 1996 World Debt Tables.

5/ The measure takes into account both the profile of debt service payments and the concessionality of the debt structure by discounting the stream of debt service payments.

400 percent for 20 countries. Five countries had ratios between 400 percent and 600 percent, and the remaining eight were above 1000 percent; the median was 340 percent. To put these numbers in perspective, at the height of the debt crisis in the mid-1980s the comparable debt-to-exports ratio was about 400 percent for Mexico, 450 percent for Brazil, and 700 percent for Argentina; for non-HIPC developing countries, the ratio has averaged about 130 percent in recent years.

The magnitude of the indebtedness indicators in the HIPCs results from the combined effect of sizeable external inflows and low growth rates of output and exports over the past decade. A number of factors have been behind the relatively weak economic performance of these countries, including adverse terms of trade developments and the incidence of drought and civil war. However, deficiencies in macroeconomic management and the persistence of microeconomic distortions and structural weaknesses have also played a significant role. Although most of the HIPCs have had economic stabilization and structural adjustment programs supported by the Fund and the Bank for a number of years, the pace of policy reform has remained uneven.

For the HIPCs, with only one exception, debt service paid in 1993 (the most recent year for a which a full data set has been assembled) was below contractual debt service. Figure 2 shows the distribution of the number of countries by debt service paid to debt service due by decile. This pattern has been a recurring feature of the difficulties that the HIPCs have faced in managing their external debt situations in recent years. Arrears have been accumulated largely towards official bilateral creditors, although a small number of HIPCs have incurred relatively large arrears to commercial

creditors. Rescheduling and debt restructuring by Paris Club creditors in the context of programs supported by the Fund and the Bank have been the main instruments used to deal with the problem of HIPC arrears and to lower their contractual debt service obligations. Most HIPCs have fully serviced their multilateral obligations, but four HIPCs (Liberia, Somalia, Sudan, and Zaire) have arrears of six months or more to the Bank and the Fund. Eight countries (the four listed above plus Central African Republic, Guinea-Bissau, Madagascar, and Niger) have arrears of six months or more with the African Development Bank.

The composition by type of creditor of the HIPCs' aggregate debt (in present value terms) is shown in Figure 3. 6/ The total stock was US$164 billion in present value terms at the end of 1994. Debt to private creditors amounted to 17 percent of the total (7 percent short term and 10 percent long term). Debt to official bilateral creditors was about 64 percent of the total, which was more or less evenly divided between Paris Club and non-Paris Club creditors. The remaining 19 percent of the total is accounted for by multilateral institutions, the distribution of which is also shown in Figure 3.

6/ The aggregate data cover IDA-only HIPCs, thereby excluding Nigeria. Nigeria's large size relative to the other HIPCs would distort the aggregate picture.

It is important to note that most HIPCs have continued to receive a positive net transfer of resources from the creditor/donor community. 1/ The median of net transfers to the HIPCs was about 11 percent of GDP on average over the 1990-94 period. This is in contrast to the situation facing the heavily-indebted middle-income countries in the mid-1980s which were obliged to make substantial net transfers of resources to creditors; the average net transfer of resources to external creditors over the 1984-88 period, for example, amounted to 5 percent of GDP for Mexico and over 2 percent of GDP for Brazil and Argentina (Cohen (1995)).

Maintaining positive net resource transfers to the HIPCs has required an increased commitment of resources on concessional terms by official creditors. Official bilateral creditors have increasingly made resources available to the HIPCs on a grant basis and they have also restructured portions of outstanding claims on concessional terms or written off portions of such claims for countries judged to be performing well. Resources from the multilateral institutions have in recent years been largely confined to loans on highly concessional terms and these now account for the bulk of new net debt-creating flows to the HIPCs.

III. Debt Sustainability Analysis

When creditors consider debt relief initiatives for a highly indebted country a crucial question is whether the current debt burden is judged to be sustainable, i.e. whether the countries will be able in all likelihood to

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1/ The net transfer of resources from such creditors is defined as grants plus new loan disbursements minus actual interest payments and amortization of principal.

meet its current and future external obligations in full without resorting to rescheduling in the future or accumulations of arrears. 8/ In the case of the HIPCs, most of which have experienced arrears and rescheduling in the recent past, the question is whether future export and output growth prospects are strong enough to bring to an end debt servicing difficulties within a reasonable period of time.

The basic rationale for the analysis of debt sustainability scenarios arises out of consideration of national solvency. The national solvency constraint by itself imposes relatively weak conditions on the behavior of the private and public sectors and may not necessarily be a binding constraint, but it does provide a framework within which to assess a country's ability to meet its future debt obligations. 9/ For example, as Buiter (1989) puts it, "....the 'forward-looking' accounting framework involved in solvency assessments can be used to evaluate the internal consistency of plans for external borrowing, debt service, exports, imports and other external transactions." Nevertheless, it needs to be stressed that a considerable amount of (explicit or implicit) economic modelling is required to undertake such exercises so as to form a conditional judgement as to sustainability.

8/ This type of analysis obviously cannot answer the question of whether the burden of debt service is excessive according to some welfare criterion. Such a judgement is not a matter of positive economics; see for example Williamson (1988).

9/ The national solvency condition looks forward into the indefinite future and requires assumptions about the evolution of the trade balance (on goods and nonfactor services) over time. Deficits can be run for extended periods of time provided surpluses sufficient to repay existing debt plus interest are generated at some stage. See, for example, Eaton and Fernandez (1995).

The methodology typically employed for debt sustainability calculations involves choosing a time horizon (often 10 years or even 20 years out), and projecting the growth rates of the main macroeconomic variables in the indebted country for that horizon (see, for instance, Cline (1995)). These projections, together with estimates of future voluntary inflows of foreign capital, are then used to construct the balance of payments accounts for the country. For external debt to be judged sustainable, the scenarios must satisfy two conditions: first, during the projection period balance of payments equilibrium must be achieved without resorting to exceptional financing; and second, the level of indebtedness at the end of the period must be low enough to make future debt service problems unlikely. The latter condition is typically evaluated by computing indebtedness indicators such as the debt-to-GDP ratio, the debt-to-exports ratio, or the debt-service ratio, for the last years of the projection period.

Deciding whether these ratios are sufficiently low inevitably involves the exercise of a fair amount of judgement. As noted, for example in IMF (1987), it is often not possible, even after the fact, to measure the factors that would allow an accurate prediction as to what levels of the ratios would be sustainable. The chief practical value of indicators is that they signal situations in which debt service difficulties become increasingly likely. The "rule of thumb" warning sign is usually taken to be when the ratio of the present value of debt service to exports is of the order of 200-250 percent and where the debt service-to-exports ratio is of the order of 20-25 percent; these figures are based on an empirical analysis of the experience of developing countries and their debt service performance over time. For instance, Underwood (1990) ranked 111 developing countries

by their ratio of debt to exports, with debt defined net of official reserves and adjusted for the degree of concessionality. With one exception, all the countries that avoided rescheduling had debt-to-export ratios below 200 percent, while most countries with a history of rescheduling or interest arrears had debt-to-exports ratios above 200 percent. Cohen (1995) revisited the issue, and proposed an additional way of identifying the critical threshold for African debt based on the experience of Latin American countries: the maximum net transfer to creditors that these countries made during the most difficult part of the debt crisis was around 5 percent of GDP. Given the current export-to-GDP ratio for Africa and under some assumptions about the real interest rate and the future rate of growth of the African countries, similarly sized transfers would translate into a debt-to-exports ratio of around 200 percent (in present value terms) and is consistent with Underwood's findings.

Threshold debt ratios derived for developing countries in general may not be fully applicable to the HIPCs because these countries are the recipients of large inflows of foreign assistance both in the form of grants and concessional loans. Hence, the debt servicing capacity of the HIPCs depends not only on their ability to generate foreign exchange through exports, but also on how much foreign assistance is expected to be forthcoming in the future. Most of these countries can expect to receive positive net transfers for the foreseeable future, and thus it is possible to argue the debt-to-exports ratio can underestimate their ability to sustain a given level of debt. It can also be argued that the expectation of the receipt of a stream of positive transfers over time for this group of countries changes the nature of possible intertemporal allocation. Thus,

a judgement can be made as to the extent to which it is reasonable to bring forward debt-creating flows to the present (and hence accept higher debt stocks in present value terms now) in order to finance increased investment and consumption today. 10/

To construct debt sustainability scenarios it is necessary to make assumptions on the future path of economic policy in the indebted country. Here several approaches may be adopted. One could be to project the policy stance that appears most likely to be adopted, and which may not necessarily be fully consistent with a scenario of high long-term growth. In this case, the projections would reflect the "best available forecast" of future economic performance. 11/ Alternatively, the scenarios may be constructed under the assumption that, to the extent judged politically and economically feasible, future policies will be aimed at enhancing output and export growth through adjustment and reform programs which will maximize the country's long-term repayment capacity. This can be referred to as the "best policies" approach. 12/

10/ In other words this is a question of "aid now" versus "aid later", and embraces the issue of to what extent future aid flows should be encumbered for the sake of being able to use the resources today.

11/ This type of approach has been taken in determining whether certain European countries are likely under a continuation of present policies to meet the fiscal criteria set out in the Maastricht Treaty.

12/ As discussed in the next section, the debt overhang theory suggests that the presence of a large stock of debt may deter the adoption of policies that maximize future repayment capacity. If that theory has empirical relevance, then choosing a "best policies" approach in debt sustainability analysis could be problematic.

Because most of the external debt of HIPCs is public debt, external debt sustainability requires that the external payments situation and the government budget should be considered alongside each other. Hence, the analysis should consider whether the government will be able, and willing, to adjust and restructure noninterest public expenditure, taxation, and domestic financing to be consistent with the size and path of the scheduled net fiscal transfers forthcoming from abroad. Thus, it may be misleading to characterize a country in terms of a single representative, national agent with command over the country's resources and to overlook the constraints and the behavioral differences and interactions between the private and public sectors. 13/ In addition, some governments have direct access to foreign exchange because of their control of export revenues, e.g., through state oil companies, so that they are less dependent on taxing the private sector in order to obtain the domestic resources necessary to acquire the needed foreign exchange for the discharge of external debt service obligations. Past experience with external debt crises indicates that in a significant number of countries debt problems have been due to fiscal problems and not necessarily to balance of payments difficulties (Cohen, 1988a). Also, as in several HIPCs fiscal reform and consolidation has proved difficult to achieve (World Bank (1994)), this dimension of debt sustainability needs careful evaluation.

For any particular country debt sustainability analysis has some limitations. First, the calculations are sensitive to the projections

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13/ Just as national solvency considerations lie behind the forward-looking external accounting framework, so do fiscal solvency considerations lie behind intertemporal analysis of the fiscal accounts.

of exogenous variables and the margins of error are inevitably large. For instance, the balance of payments position of several HIPCs depends crucially on the behavior of commodity prices, and any significant deviation of commodity prices from the path envisioned in the projections can potentially alter the conclusions about debt sustainability. At the onset of the debt crisis in the early 1980s, some projection models reached the conclusion that Latin American debt was sustainable in part because they failed to predict the sharp drop in commodity prices that occurred in the mid-1980s (Cline, 1995). The implications of such deviations can, however, be examined by undertaking sensitivity analyses in the scenarios.

Second, debt sustainability analysis measures a country's "ability to pay" but, as emphasized by the literature on sovereign debt pioneered by Eaton and Gersovitz (1981), debt problems may derive from a lack of "willingness to pay". Thus, an indebted government that has the necessary revenues to finance debt service may still choose to run arrears if the consequences of the default are thought to be minimal. For countries indebted towards commercial creditors, default costs include reduced access to future credit and foreign investment and, possibly, to foreign markets, as well as the loss of reputation for fulfilling contractual obligations. These costs have played an important part in motivating countries to repay during the debt crisis. The literature on sovereign debt has not, however, addressed the issue of what the perceived costs of a default may be when the creditors are foreign countries (who also provide development assistance) and multilateral institutions. As indicated in Section II, most of the HIPCs are servicing at least a portion of their external debt, but at the same time they are receiving large inflows of development

assistance that official creditors/donor provide in a concerted effort to support the indebted country. The potential effects of a debtor's default on the flows of foreign assistance forthcoming from official creditors is bound to be an important element in determining "willingness to pay" in the HIPCs.

If a country's debt has become so large that the country cannot reasonably be expected to service it as scheduled, creditors must decide on how to react when debtors go into arrears. In some cases the indebted country may decide that outstanding claims are so large that it makes little sense attempting to service much of the debt at all. This amounts to an explicit default on the part of the debtor and arrears will continue to accumulate, the consequences of which depend on a multiplicity of factors including the identity of the creditor. The creditors have to decide on the suspension of new disbursements, including for official bilateral creditors whether that should embrace halting assistance in the form of grants. If the indebted country is endeavoring to make some (more than token) debt service payments, the creditors may decide to provide increased new financing to the country, so that debt payments can be made out of the proceeds of a new loan; but such a reaction is clearly problematic if the debt sustainability analysis subsequently suggests that the debt is so high that solvency rather than liquidity is really at issue. Or a judgement can be made by creditors that reducing the outstanding obligations by forgiving part of the principal or of the interest is justified. Interest rate reduction can also be done indirectly, by means of a commitment to refinance old loans by means of new loans at lower interest rates.

If the last course of action is chosen and relief on part of the debt is granted the creditors lose the residual recovery value on part of their claims: if, contrary to expectations, the debtor's economic performance happens to improve to a degree that restores solvency (or willingness to pay), the creditors will have no right to demand full payment. On the other hand, if the country was in arrears or if the refinancing alternative had been pursued, then the creditors would receive an increased debt service payment. Of course, the more sustainable the external debt position of the country appears to be, the larger is the creditors' residual recovery value on part of their claims, and the larger is the cost of explicit debt reduction relative to other courses of action. Decisions by Paris Club creditors to offer partial and conditional debt reduction under London Terms and subsequently under Naples Terms can be interpreted partly as reflecting a judgement that the stock of debt outstanding for many of the HIPCs was reasonably judged to be unsustainable and the residual recovery value on some part of the debt minimal (at least relative to the potential benefits from debt forgiveness).

It should also be noted that the upfront accounting loss resulting from a debt reduction operation is likely to be much larger than the economic loss if the loan is still kept at face value or is otherwise overvalued on the creditors' books, and adequate or realistic loan-loss provisions have not been set aside. In practice, some creditors may be reluctant to grant debt forgiveness because they are unwilling or unable to take a large accounting loss. Also, explicit debt reduction may expose the extent of past imprudent lending decisions with adverse effects on the reputation of the creditor vis-à-vis borrowers and financial markets. In

this case, the ability to refinance nonperforming loans, thereby concealing the losses, may create a moral hazard problem on the creditor side. In private commercial banking, regulatory limits on banks' exposure towards individual borrowers therefore limit the use of the refinancing strategy.

If creditors deal with a situation in which debt has become unsustainable by granting debt relief through some debt reduction and/or ongoing refinancing, then the debtor is not formally in default, and creditors consent to accept a different schedule and/or different amounts of debt service payments than called for in the original loan contracts. Hence, if this action is interpreted as a sign that creditors are "soft" on debtors who do not pay, it may create moral hazard problems: the country in question may consider that further significant deviations from contractual obligations in the future will also be tolerated, and other debtors may form the same opinion and follow suit as well. The issue of moral hazard is discussed further in Section IV.3 below.

It also needs to borne in mind that there are limits on the extent to which it may be judged appropriate to grant debt relief by reducing the level (in present value terms) of a country's external debt. The fact that a country has entered into loan contracts carries with it an obligation to make *bona fide* efforts to service such contracts, and this implies servicing debt up to the limit reasonably judged to be sustainable. While such judgements are difficult to make, for creditors to do more than this (by reducing outstanding claims still further) so as, for example, as to make room for a larger volume of new loans, would be incompatible with the nature of the loan contracts entered into and would be dynamically inconsistent; furthermore, if fresh loans (rather than grants) were to

continue over time, it would only make sense to the extent that such new loans were expected to be accompanied by growth in the indebted country's debt servicing capacity.

IV. Debt and Economic Performance: Theory

At the center of the HIPC external debt problem is the question of whether the large debt burden is one of the factors contributing to weak economic performance and the uneven pace of economic reform in these countries. Although the need to service external debt can be expected to reduce growth and investment provided future access to external resources is unaffected, the question is whether the adverse effects may be of a sufficient magnitude to justify increased explicit debt reduction beyond the presently available mechanisms. This section reviews the insights that economic theory has to offer on the relationship between debt burden and economic performance.

1. The debt overhang theory

The main theoretical argument in support of explicit debt reduction, as opposed to continued flow rescheduling, is the debt overhang theory. The theory is based on the premise that, if debt will exceed the country's repayment ability with some probability in the future, expected debt service is likely to be an increasing function of the country's output level. Thus, some of the returns from investing in the domestic economy are effectively "taxed away" by existing foreign creditors, and investment by domestic and new foreign investors is discouraged. According to the theory, a reduction in the face value of future debt obligations will reduce the distortion due

to the implicit tax, and this will increase investment (see, for instance, Krugman (1988)). Since debt reduction leads to increased investment and repayment capacity, the portion of the debt that remains outstanding becomes more likely to be repaid. If this effect is strong enough, then debt reduction may benefit the creditors as well as the debtor, and the debtor is said to be on the "wrong" side of the debt Laffer curve. 14/ If the debtor is on the "right" side of the Laffer curve, debt reduction may still be a "positive sum game", but creditors need to receive some compensation, perhaps in the form of enhancements that increase the value of the remaining debt. This essentially is the approach to debt reduction used in the Brady deals. 15/

The debt overhang theory was originally formulated for countries heavily indebted towards private commercial creditors. The HIPCs, on the other hand, are mostly indebted towards official creditors, and they also receive substantial transfers often in the form of concessional assistance from some of their creditors. If creditors allocate foreign assistance independently of the size of debt-related flows, then the standard debt overhang theory would apply equally to the HIPCs. If the foreign assistance is related to the debt and debt service of HIPCs, whether and how a debt overhang may create adverse incentive effects for economic performance is

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14/ The debt Laffer curve graphs expected repayment as a function of the face value of debt service. Along the "right" side of the curve, an increase in the face value of debt service leads to an increase in repayment, while along the "wrong" side of the curve increases in the face value of the debt reduce expected repayment.

15/ Even if it benefits the creditors as a group, debt reduction may be difficult to achieve because each creditor has an incentive to free-ride. The concerted approach adopted in the Brady deals was designed to get around the free-rider problem.

a more complex question. The answer depends on the specific criteria according to which foreign assistance flows are determined. For instance, creditors may reduce foreign assistance to countries whose economic conditions improve. In this case, incentives to undertake growth-enhancing activities are weakened, but this is true regardless of the size of external debt. However, if, in addition, heavily-indebted countries are more likely to be dependent on foreign assistance in the future, then the adverse incentive effects are worse for these countries. Conversely, if foreign assistance tends to be provided as growth-enhancing policies are undertaken, then the debt overhang effects would tend to be weakened.

In its original formulation the debt overhang theory centered on the adverse effects of debt on investment in physical capital. The scope of the theory, however, is much broader. To the extent that foreign creditors are expected to appropriate some of the benefits of future growth, any activity that involves incurring costs upfront for the sake of increased output in the future will be discouraged (Corden (1989)). Such activities may include investment in human capital and in technology acquisition, whose effects on growth may be even stronger over time in HIPCs than the effect of investment in physical capital. Also, the implementation of extensive economic reforms, such as trade liberalization, privatization, or fiscal reform, may entail incurring an immediate cost (political as well as economic), while the benefits will materialize only in the future. If policymakers expect foreign creditors to appropriate most of the gains from policy reform through larger debt service payments, then the presence of a debt overhang

may be a strong obstacle to economic reform. 16/ This potential effect is of particular concern in the case of the HIPCs, where the extent of microeconomic distortions and poor macroeconomic management is often such that widespread policy reform is a prerequisite for sustained and stable growth (World Bank (1994)).

Since in the HIPCs external debt is mostly a liability of the government, strictly speaking the overhang effects outlined above should only affect actions under direct government control, that is public investment or policy reform. How a debt overhang discourages private investment depends on how the government is expected to raise the fiscal revenue necessary to finance external debt service. 17/ For instance, if the government is expected to resort to the inflation tax or to a capital levy, private investment is likely to be discouraged. 18/ If revenue will be raised through an export tax, then investment in the export-oriented sector will be depressed.

16/ It could also be argued that, to some extent, the assistance provided by foreign creditors/donors slows down the pace of reform. Without this external assistance some countries might be obliged to reform much faster, albeit at a higher cost.

17/ To the extent that private and public investment are complementary, a debt overhang that leads to cuts in public investment would reduce private investment independently of tax considerations.

18/ Hadjimichael *et al.* (1995) find that inflation has a significant and negative impact on private investment in Sub-Saharan Africa.

2. Other effects of debt on economic performance

The debt overhang effect is only one of the channels through which the need to service a large amount of external obligations can affect economic performance. Other channels may prove to be equally as important. These include the "crowding-out" effect, the lack of access to international financial markets, and the effects of the stock of debt on the general level of uncertainty in the economy.

The debt overhang theory implies that a reduction in future debt service should lead to an increase in current investment. A perhaps stronger case can be made that a reduction in current debt service should lead to an increase in current investment for any given level of future indebtedness. This is because the smaller is debt service the more resources are available to finance investment without reducing consumption; hence, the utility cost of financing investment should be smaller, and more investment should be carried out. Cohen (1993) has dubbed this effect the "crowding out" effect of debt on investment. 19/ While the debt overhang effect clearly implies that a strategy of debt reduction is better than one of ongoing rescheduling combined with new resource inflows, this is not the case for the "crowding out" effect. If there is no debt overhang, then an identical increase in investment could be obtained by giving the country a new loan instead of reducing current debt service, since a new loan would

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19/ For this effect to be at work the country must have imperfect access to world capital markets, which is certainly the case for HIPCs; the argument also assumes that the way in which debt service is reduced does not affect access to new official assistance.

be just as effective at "crowding in" investment. 20/ So being able to empirically distinguish between the two effects has important consequences for the design of a strategy towards HIPCs debt problems.

Several authors have noted that the developing countries involved in the debt crisis of the 1980s, having lost access to world financial markets, experienced a sharp increase in their shadow cost of capital, which greatly contributed to the decline in investment and output. 21/ A major benefit of debt reduction operations in middle-income countries has been to restore access to international financial markets and to encourage the repatriation of flight capital. While the inflows of "involuntary" new money in the rescheduling period of middle-income countries (1983-89) went to the indebted country government, the capital inflows of the early 1990s were directed primarily to the private sector. Presumably, this led to a better allocation of resources and a more efficient selection of investment projects. Hence, a potential benefit of a strategy of debt reduction relative to one of ongoing refinancing is that debt reduction may help strengthen the private sector in the indebted countries. However, because several of the HIPCs would be unlikely to attract much foreign private

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20/ Of course, in the extreme case in which creditors always provide sufficient new money to cover debt repayment so that the need to service more debt does not result in a larger net transfer to creditors, investment would not be crowded out at all.

21/ See Detragiache (1992) for a theoretical model, and Borensztein (1990a) for numerical simulations indicating that this effect is large. Also, Cohen (1993) points out that, to assess whether debt played a role in reducing investment in developing countries, the investment levels of the 1980s should be compared to those of the 1960s, and not to investment in the 1970s, when developing countries temporarily enjoyed relatively easy access to world financial markets.

capital even after receiving some external debt reduction, this argument may be less relevant than in the case of middle-income countries.

Another argument that is sometimes made to support explicit debt reduction is that with ongoing rescheduling there is considerable uncertainty as to what fraction of scheduled debt payments will be serviced from the country's own resources. This amount is--implicitly or explicitly--the subject of ongoing negotiations between the authorities in the indebted country and the various categories of creditors, the outcome of which depends on complex factors, including changes in foreign aid budgets in creditor countries, political developments, and so on. Such uncertainty may contribute to generating instability in the indebted economy, thereby discouraging domestic investment (see, for example, Claessens, Oks, and Van Wijnbergen (1993)).

3. Debt reduction, moral hazard and conditionality

As pointed out in Section II above, when the long-run creditor-debtor relationship is considered, either a strategy of explicit debt reduction or one of ongoing flow rescheduling and/or *de facto* rollovers through new loans may create moral hazard problems. Specifically, having found creditors willing to accept a change in scheduled debt service today, the debtor (and other debtors) may form the belief that creditors have eased their position, and that more debt will be either forgiven or rolled over in the future as long as the country's repayment prospects remain clouded. This reasoning, of course, may lead to a reduction in efforts to service the debt in the future.

To limit moral hazard, creditors have found it necessary to apply conditionality to the refinancing/rescheduling process. Thus, resources are disbursed period-by-period while the country policy stance is closely monitored by the Fund and the Bank, a process dubbed by some observers (e.g. Williamson (1988)) as the "short-leash" approach. If debt relief is provided through explicit debt reduction, the impact of moral hazard can be lessened if creditors offer debt reduction only to countries that have established a track record of responsible policies, and whose current debt difficulties, therefore, are largely outside of the control of policymakers. This is the type of approach taken by the Paris Club in determining eligibility for stock-of-debt operations under Naples Terms (see IMF (1995a).

A potential advantage of refinancing/rescheduling (accompanied by conditionality) relative to explicit up front debt reduction may be that, by allowing the Fund and the Bank to constantly monitor policy performance in the indebted country, it leads to better policies and less moral hazard problems. With a strategy of granting debt reduction after a good track record is established, on the other hand, multilateral creditors may lose their ability to influence policy after the initial period.

If there are reasons to believe that economic reforms and sound macroeconomic policies become "self-sustaining" after the initial obstacles are overcome, then losing the "short-leash" may not have much of an impact. On the other hand, a strategy of explicit debt reduction would reduce the costs of constant negotiations and policy monitoring. In the HIPCs, where the strength and depth of the professional cadre is limited, these costs are likely to be substantial (Killick (1993) and Martin (1991)). Also, the

continual negotiations and performance evaluation implied by the "short-leash" approach may increase uncertainty about the extent of future resource flows between the indebted country and official creditors, as these flows become a function not only of budgetary and political developments in creditor countries, but of whether the authorities in the indebted country will be deemed to have maintained a sufficient degree of compliance with the policy programs.

Some authors have also criticized the "short-leash" approach (and policy conditionality in general) because it impedes local "ownership" of reform programs (e.g. Berg (1991) and Killick (1994)): because the conditions and substance of reform programs may be seen as being imposed from outside, policymakers may have difficulties implementing the programs because they or other agents are not convinced that the actions being required are in the country's own long-term interest. 22/ This criticism is closely related to the existence of adverse incentives for undertaking policy reform in the presence of a large debt overhang: if authorities

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22/ Evidence on ownership and its consequences is to be found in various reviews of World Bank adjustment loans, conducted by its Operations Evaluation Department (OED). OED (1992) attempted to quantify the relationship using a methodology developed by Johnson and Wasty (1993). On the basis of a review of Program Audit Reports (PARs), 81 loans to 38 countries (17 of them HIPCs) were classified according to their ownership and their program outcome. Statistical analysis indeed confirmed a significant relationship between program ownership and program outcome. Almost half of the programs, however, were classified as having low or very low degrees of ownership.

in the indebted country perceive external creditors to be the main beneficiaries of the reforms, then "ownership" will be weak, and program implementation will be difficult. 23/

It should be emphasized, however, that to the extent that the HIPCs will continue to receive official resources in the form of concessional loans (for instance, ESAF and IDA resources) or bilateral grants even after their external debt is reduced, then these countries would still be subject to conditionality and their policies would continue to be scrutinized by the Fund and the Bank. The major benefit from abandoning the "short leash", then, would be to put an end to the process of applying conditionality to the rescheduling and roll-overs of old debt obligations.

Finally, for the "short-leash" approach to be effective it is crucial that the creditors' or donors' threat of suspending new inflows when policy goes off track be credible (see, for example, the analysis in Mosley, Harrigan, and Toye (1995)). Hence, the resolve of the official donor/creditor community as a whole to suspend disbursements when a country fails to comply with performance criteria is a necessary element for an effective strategy to address the HIPCs debt problems. The World Bank (1994) looked at the relationship between change in net external transfers per capita and change in macroeconomic policies in the 1980s in Sub-Saharan Africa. This study found that countries that benefited from increased transfers between 1981-86 and 1987-91 were almost equally split

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23/ Also related to this argument is the hypothesis of the "catalytic" effect of debt relief advanced by Cline (1995). According to this hypothesis, the willingness of creditors to offer explicit debt reduction allows policymakers in the indebted country to claim that "we have succeeded in putting the debt problems behind us", thereby increasing domestic support for economic reform and increasing future willingness to pay.

between those whose macroeconomic policies improved and those whose policies deteriorated. A recent assessment by the Fund on ESAF arrangements (IMF (1995a)) concludes that transfers from official creditors/donors have generally rewarded HIPCs making stronger policy adjustment efforts, although it also concluded that, while progress had been made, the achievement of external viability was still in question and that growth remained somewhat below that judged feasible in a number of countries.

It should also be noted that, if one of the shortcomings of the current debt strategy is thought to be the difficulty in applying credible policy conditionality, then the appropriate solution would be to create the conditions for a more effective implementation of Fund and Bank programs in the HIPCs. Unless strong incentives to pursue appropriate policies are created, additional debt reduction would not bring to an end the HIPCs debt problems, but it would simply be followed by more rescheduling and roll-overs in the future.

V. Debt and Economic Performance: Evidence

The previous section showed that theoretical analysis yields a number of hypotheses on the impact of debt on economic performance. Implied by these hypotheses are alternative approaches to debt relief--debt reduction upfront or after a track record is established, ongoing rescheduling or writedowns with conditionality, etc. It would be important to assess the evidence on the various hypotheses as the basis for forming a judgment on the appropriate policy response to the debt problem of the HIPCs in general and those of specific individual countries. This section considers two

types of evidence available in the literature: that on the relationship between debt and investment, and evidence on the impact of the Brady plan in middle-income countries.

1. Debt and investment

There is a large literature on the determinants of growth and investment in developing countries. Although none of the studies focusses exclusively on the HIPCs, a number of them include HIPCs in the sample. 24/ Most econometric studies include a fairly standard set of domestic, external, policy and exogenous explanatory variables. Some of these studies have also included debt variables. Not surprisingly, almost all such studies find one or more debt variables to be significantly and negatively correlated with investment or growth (depending on the focus of the study). While this evidence provides *prima facie* support for the argument that debt and economic performance are negatively related, it still leaves open the two key questions: the relative importance of debt vis-à-vis other factors; and the channels of the adverse impact of debt.

While most studies include key exogenous and policy variables, such as indicators of (the disequilibrium of) the exchange rate, the degree of openness of the economy, fiscal balance, or the domestic real interest rate,

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24/ A selection of these studies includes: Borensztein (1990b), EBS/95/162, Cohen (1993, 1995), Greene and Villanueva (1991), Hadjimichael *et al.* (1995), Jenkins (1995), Oshikoya (1994), Serven and Solimano (1991), Kumar and Mlambo (1995), Warner (1994), Savvides (1992), Mlambo and Mhlophe (1995). Cohen (1993) and Savvides (1993) use a large sample of LDCs which includes most of the HIPCs, and Cohen (1995), Oshikoya (1994), Kumar and Mlambo (1995), and Hadjimichael et al. (1995) focus on Sub-Saharan Africa, where most of the HIPCs are located.

the question arises whether these sufficiently control for country circumstances and, if not, whether the debt variables pick up the effect of some other, omitted exogenous or policy factors or whether there are feedback effects to other variables that mask the effects of the high levels of external debt. By nature of econometric estimation, this question can not be resolved definitively. In an analysis of the relationship between growth and investment and debt burdens in HIPCs, IMF (1996) also concludes that it is difficult to disentangle the role of debt overhang from other factors. Several studies, however, have found that debt variables have statistically significant negative relationships with subsequent investment or performance, even after controlling for other, contemporaneous factors. This provides a relatively robust indication of the negative effect of debt on economic performance. Furthermore, the theoretical analysis indicates that the debt burden can negatively affect some of the control variables themselves. For example, debt can affect the domestic real interest rate. Because investment is also affected by the real interest rate, the impact of debt on investment is likely underestimated when the real interest rate is also included in the regression.

The second difficulty relates to the two channels through which debt variables can affect growth or investment: one is a "pure" debt overhang effect; the second refers to a "crowding out" effect. Most studies of investment equations generally do not distinguish between the crowding out and the overhang effect and the mere statistical significance of debt variables is then also not sufficient to isolate the importance of the debt overhang. To distinguish between the two effects, both the contemporaneous debt service and a variable capturing the burden of future debt service

(such as the debt stock or the present value of future debt service) should be included in the regression analysis.

Greene and Villanueva (1991), Savvides (1993), and Kumar and Mlambo (1996) are examples of studies of investments in developing countries which include both variables as separate determinants. Greene and Villanueva find evidence of an overhang effect, but their sample of developing countries does not include any HIPCs. On the other hand, for a large sample of developing countries including some of the HIPCs, Savvides (1993) finds that, while debt service crowded out investment, the debt-to-GNP ratio had a negative but insignificant coefficient, indicating that the hypothesis of no debt overhang effects could not be rejected. Kumar and Mlambo reach the same conclusion in a study of investment in Sub-Saharan Africa. These results, however, should be viewed with caution, because the studies do not correct their overhang variable (the ratio of the stock of debt to GDP or to exports) for the degree of concessionality of the loans. Hence, the measure of indebtedness used does not accurately reflect differences in the burden of future debt service across countries. Also, both Greene and Villanueva (1991) and Kumar and Mlambo (1996) include the real interest rate as a regressor, which is possibly related to the debt burden through both an overhang and a crowding out effect. For middle-income countries, Warner (1992) and Cohen (1993) use a more indirect way to attempt to identify the effect of the 1980s debt crisis on investment. They estimate investment equations prior to the debt crises and assess their predictive power during the period of the crises. Warner (1992) concludes

that the debt crisis did not depress investment, while Cohen (1993) concludes that it was the crowding out effect of current debt servicing which was significant.

One other approach to identifying the pure debt overhang effect is to estimate the "debt Laffer curve" through secondary market debt prices. Claessens (1990) finds that out of 29 middle-income countries, five were on the "wrong" side of the Laffer curve, suggesting that partial debt reduction would increase the expected repayment to the creditors. Claessens *et al.* (1991) find, depending on the exact specification of their model, that 6 to 15 out of 35 countries were on the "wrong" side of the debt Laffer curve. In both papers, only extremely indebted countries were on the "wrong" side of the Laffer curve. Cohen (1990) does not find econometric support for the proposition that reducing the nominal value of debt would increase its market value. However, studies using secondary market prices to measure debt overhang raise issues of interpretation: an explicit reduction in the face value of debt may have little effect on the secondary market prices, not because there is no debt overhang, but because market participants expect some debt reduction to occur, and that expectation is built into the price. Finally, for the case of the HIPCs the relevance of this evidence is only marginal since secondary market prices are only available for commercial debt and most of the HIPCs debt is official.

2. Impact of the Brady plan

The Brady plan, first put forward in 1989, involved a concerted debt relief package where commercial banks could choose from a menu of new money

and debt stock reduction options, implemented in a framework of policy conditionality. In practice, few commercial banks were willing to lend new money and the Brady plan has largely been debt reduction, with commercial debt stocks on average reduced by 45 percent (IMF, 1995). The Brady plan countries thus provide useful case studies of the effects of debt reduction on economic performance and capital flows. However, as the Brady plan was concerned with middle-income countries mainly indebted to commercial creditors, the evidence may have limited relevance for the HIPCs. There have been several studies of the first Brady deal--that for Mexico, and of those for other countries. Two general conclusions emerge. One, the central role of macroeconomic stabilization and economic reforms undertaken prior to debt reduction. And second, the main channel through which the debt reduction affects growth is through a reduction in uncertainty; the reduction in future transfers appears to matter less.

Berthelemy and Vourc'h (1994) evaluate the impact of the Mexico Brady deal. They use a calibrated simulation model focusing on three key prices: the domestic interest rate, the price of debt on the secondary market and the real exchange rate. They conclude that the Brady plan speeded up recovery and dispelled the uncertainties which were weighing on the success of the new economic reform program at the beginning of 1989. They also conclude that if Mexico had not corrected its fiscal and macroeconomic imbalances prior to the deal, the debt relief obtained would not have been sufficient to restore a recovery of growth and creditworthiness. Oks and van Wijnbergen (1994) and Claessens, Oks and van Wijnbergen (1993) come to similar conclusions in their analysis of the impact of the Brady deal in Mexico, highlighting the role of uncertainty. They conclude that the

impact of the Brady deal came not primarily through a reduction in external transfers (either current or future) but through the fact that the deal removed uncertainty associated with continual ongoing reschedulings.

These conclusions are further confirmed by IMF (1995b) which investigates the behavior of private investment in eight, both low- and middle-income countries (Bangladesh, Chile, Ghana, India, Mexico, Morocco, Senegal and Thailand). Although no independent "debt overhang" effect on investment was identified, the study concludes that indirect evidence suggests that an earlier resolution of these countries' debt burden would have yielded a faster rebound in investment through both the effect of a reduction in uncertainty and the lowering of country-risk premia and interest rates.

IMF (1992-95), World Bank (1993), Cline (1995), and Fernandez-Arias (1993), among others, review the consequences of Brady agreements for other countries (Argentina, Brazil, and Venezuela, among others). These papers' findings are that secondary market prices for debt rose generally. Cline, for example, noted that for Argentina, the country risk spread fell sharply after the deal in April 1993. Similarly, there was a sharp turnaround in private capital flows to most countries, typically around the time when the Brady agreement was agreed upon. This happened in Venezuela in 1990, but by 1992 private flows to Venezuela fell off again after policy slippages--showing once again the importance of a sound policy framework for debt reduction to have a positive impact on private capital flows, investment and growth.

The experience with the Brady plan suggests that an important beneficial effect of concerted debt reduction may be to bolster confidence in the process of policy reform undertaken by the authorities in the indebted country: from this perspective, the willingness of commercial creditors to grant debt reduction is viewed by foreign investors as an "endorsement" by the international financial community that the country is successfully pursuing sound macroeconomic policies and structural reform. This endorsement opens the way for renewed foreign capital inflows that stimulate growth. These considerations suggest that offers of increased debt relief for the HIPCs may only have positive effects on economic performance observed in the case of the Brady deals if they are interpreted by international investors as an endorsement of a strong and effective program of economic stabilization and reform.

VI. Concluding Remarks

The analytical arguments reviewed in this paper on the links between debt and economic performance have implications for whether or not consideration should be given to more debt reduction for HIPCs over and above that provided for under current mechanisms. Ongoing refinancing with conditionality, as opposed to upfront debt reduction, reduces moral hazard and provides countries with incentives to maintain good policies. But, at the same time, this "short-leash" approach has transactions costs, can create uncertainty, and can impede local ownership of reform programs. Upfront debt reduction may create moral hazard problems, and may weaken the incentives for maintaining sound policy. But there are theoretical arguments relating to a debt overhang as to why a high level of debt can

impede investment and policy reform, since the potential returns from these may be expected to be "taxed away" to repay creditors.

A number of econometric studies, based mainly on the experience of middle-income highly indebted countries, find that investment is negatively correlated with external debt variables. A few have found similar effects for African countries. While suggestive, these results need to be treated with caution: debt variables may be picking up the influence of other factors or vice versa, and most studies do not distinguish between debt stock and debt servicing effects. From a different perspective, some researchers have found that Brady Plan debt operations for certain middle-income countries have had beneficial effects on economic performance--principally by reducing uncertainty--but only when preceded by a period of strong policy reforms. In sum, while the hypothesis that HIPCs suffer from significant adverse effects from overhangs of debt is inconclusive at present, evidence from the middle-income countries does suggest that high levels of external debt may act as a constraint on investment and growth, and that debt reduction can have beneficial effects if the policy environment is right.

In conclusion, the general analytical arguments reviewed in this paper highlight the key issues that arise in any assessment of proposals for further debt reduction beyond what is embodied in existing mechanisms. And, if further debt reduction is to be considered, this would require detailed quantitative analysis for the countries in question, to arrive at a judgement as to the balance of the different forces at play.

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