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Economic Commission for Africa

The African Debt

An Analysis of the Developmental Impact of Debt Cancellation

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I. Introduction

This study examines the impact on developmental performance of African countries of cancellation of their external debts by creditors. The basic question that the study seeks to answer is whether if creditor countries were to cancel debts of heavily indebted poor African countries this would have a significant developmental performance of African countries, in the context of poverty reduction.

2. A number of studies have shown the significance of the debt overhang variables in the investment equation, suggesting that mounting external debt has a depressive effect on investment and savings through both a "disincentive effect" and a "crowding out effect" (see, among others, Hadjimichael and Ghura (1995), Ajayi (1997)). By implication, debt cancellation could contribute significantly to removing the current heavy debt burden experienced by most of these countries and thereby ease the financing resource gap of these countries. The present paper complements those studies by examining the impact of the debt burden via a growth model estimated specifically for a panel of African countries.

3. The rest of the paper is organized as follows. Section II provides some background. Section III considers the debt burden of African countries, followed by a look at current debt relief measures in the light of Africa's financing requirements in Section IV. Section V uses an estimated growth model to explore the growth effects of the external debt burden and to examine the impact of alternative scenarios of debt reduction.

II. Background

The adverse economic and social impact on African countries, especially the Heavily Indebted Poor Countries (HIPCs), of the debt overhang and the debt service burden, is generally acknowledged by both African countries and the international community. What is still missing is the general agreement on how to achieve a durable solution to the African debt problem, notwithstanding the various debt relief initiatives that have so far been put in place. The impact of debt on the socio-economic performance of African countries has produced a wave of demands and calls by both African countries and the international community, especially non-governmental organizations, for meaningful debt relief to be provided to these countries. This is especially important in the light of declining trends in official development assistance (ODA), declining commodity prices, and poor social indicators in many of these countries.

5. Many see the heavy debt burdens of the HIPCs as a "millstone", "yoke" around the necks of the African population which they have to bear. The United Nation's Children Fund (UNICEF) observes that the global debt crisis is hampering efforts by Governments and the United Nations to provide children worldwide with basic education, health care, nutritional and stable living conditions. The debt burden usually falls most heavily on the minds and bodies of children and in many nations debt has hampered economic growth and drained scarce resources for health care and education. The demands of debt servicing make it hard for many governments to restructure their budgets toward more child-centred priorities. Many HIPCs spend more on external debt service payments than on providing

for basic services such as health care and education.[1] Christian Aid notes that while all over the world, children's chances for surviving infancy have been steadily improving during the 20th century, in Africa millions fail to make it into adulthood. Survival for poor people and children in Africa is getting harder, and an identifiable and solvable cause is the huge amount of money poor countries have to pay rich governments and international institutions in debt repayments. The only way most of these countries can pay these sums is to resort to taking money from their people by cutting essential services such as health, education and the maintenance of the infrastructure.[2]

6. African countries have, over the years and through numerous fora, including the United Nations, African Heads of State and Government, Council of Ministers, and the Organization of African Unity, have been calling for the international community to join them in their efforts to find a durable and lasting solution to the African debt problem. In this respect, numerous resolutions and declarations by African Ministers of Finance and Ministers of Economic Development and Planning as well as by African Heads of State and Government have been adopted. The more recent of these was issued by the ECA Joint Conference of African Ministers of Finance and Ministers responsible for Economic Development and Planning held in Addis Ababa, Ethiopia in May 1999 where Ministers "noted with increased appreciation that there was consensus emerging both on the defects of current arrangements to cope with the debt crisis and the need to substantially revise and augment these arrangements".[3]

7. This was repeated at the conclusion of their recent Summit held in Libreville, Gabon in January 2000 on "The Economic and Social Agenda for Africa at the Dawn of the Third Millennium". In the declaration adopted at the Summit, the African Heads of State and Government "called on their development partners to reduce substantially the time required for access to debt relief and to fully finance the HIPC Initiative. They also stressed the importance of finding innovative solutions for the heavily-indebted-middle-income countries where social indicators are weak as well as the importance of the link between the HIPC Initiative and poverty reduction strategies."[4]

8. These calls have been supported by the Secretary General of the United Nations, Mr Kofi Annan who recently stated as follows:[5]

> *"I call upon the donor countries and the international financial institutions to consider wiping off their books all official debts of the heavily indebted poor countries in return for those countries making demonstrable commitments to poverty reduction."*

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[1] United Nations Children Fund (UNICEF): Debt Has a Child's Face, in The Progress of Nations 1999, Report of the UNICEF.

[2] Christian Aid Report: The Millennium Lottery: Who Lives, Who Dies in the Age of the Third World Debt, Christian Aid Report, 1999

[3] ECA: Ministerial Declaration of the Thirty-third session of the Commission/twenty-fourth meeting of the conference of Ministers responsible for Economic and Social Development and Planning, and seventh Conference of African Ministers of Finance, 6-8 May 1999, Addis Ababa, Ethiopia.

[4] The Summit of African Heads of State and Government on the Economic and Social Agenda for Africa in the Dawn of the Third Millennium, January 18-19, 2000, Libreville, Gabon.

[5] Mr. Kofi Annan, UN Secretary General: Report of the Secretary General to the Fifty-fourth Session of the General Assembly entitled "We the Peoples: the Role of the United Nations in the Twenty-first Century."

9. The Secretary General stated that he would go a step further and propose that, in the future, we consider an entirely new approach to handling the debt problem to be considered. The main components of such an approach could include the following:

- Immediate cancellation of the debts owed by countries that have suffered major conflicts or natural disasters;
- Expanding the number of countries in the HIPC scheme by allowing them to qualify on grounds of poverty alone;
- Pegging debt repayments at a maximum percentage of foreign exchange earnings; and
- Establishing a debt arbitration process to balance the interests of creditors and sovereign debtors and introduce greater discipline into their relations.

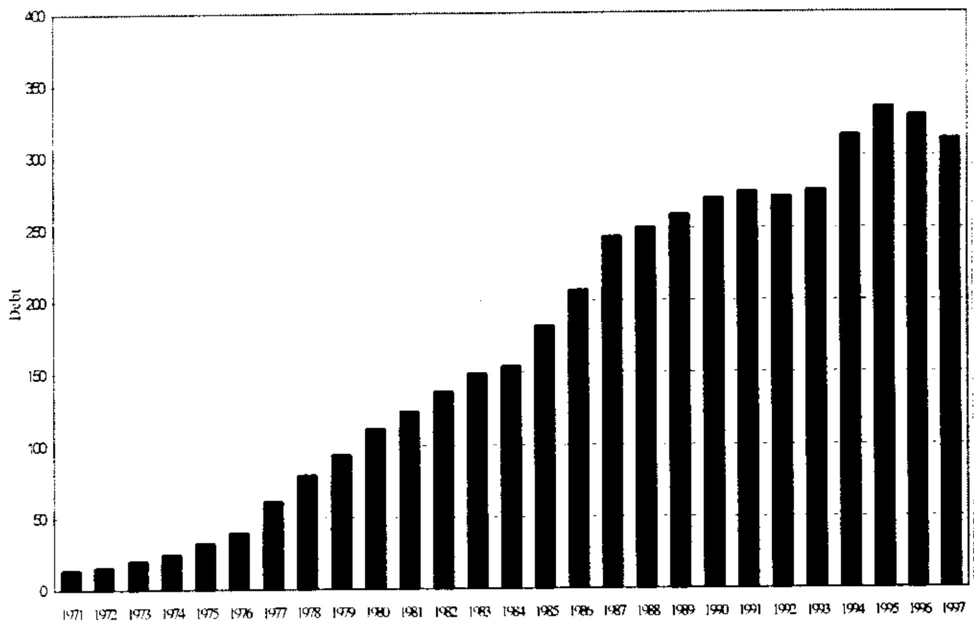
10. The Secretary General further observes that without a convincing programme of debt relief to start the new millennium, the objective of halving world poverty by the year 2015 will only be a "pipe dream". It is in this context that African countries went to the first Cairo Summit of European Union Heads of State and Government and African Heads of State and Government held in April 2000 in Cairo, Egypt in the belief that the issue of the African debt problems would feature prominently in their discussions. However, as is evident now European Union countries were more interested in discussing issues of governance and human rights in Africa than economic issues, including the debt problem. The leaders of the 67 nations promised to improve cooperation in order to help Africa escape the spiral of debt, disaster and war that have contributed in making the continent into the world's poorest. Although, the gathering was hailed as having broken new ground in EU-Africa relations, it was short on commitments to alleviate Africa's staggering debt and poverty.

11. The linking of debt relief with the broader development agenda of African countries has been often raised. Concerns and disappointments with the general thrust of development policies in Africa and trends in development finance, especially ODA, have heightened the debate for greater debt relief to be provided to African countries. In the context of reduced aid flows, many would wish to see debt relief used more to encourage sustainable development in Africa and poverty alleviation.

III. The Structure and Composition of Africa's External Debt

The structure and composition of Africa's external debt varies not only between countries, but also among groups of African countries. Most of Sub-Saharan low-income countries external debt is "official debt" owed to bilateral creditors and multilateral institutions, such as the World Bank, the International Monetary Fund and the African Development Bank. On the other hand, nearly 40 percent of the debt of African middle-income countries, most of which are in North Africa (but also include Cameroon, Cote d'Ivoire, Gabon, Nigeria, etc.) is mainly "commercial debt", contracted with commercial private banks.

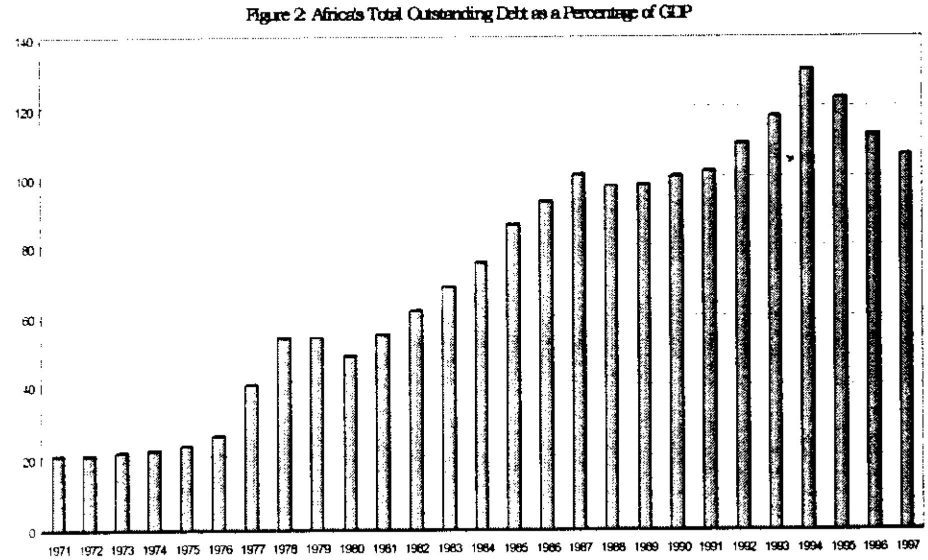
Figure 1: Africa's Total Outstanding Debt (Current Billion of US Dollars)



Source: Global Development Finance and World Development Indicators

13. According to the World Bank data, Africa's total external debt stock rose from US$13.9 billion at the end of 1971 to US$ 123.4 billion at the end of 1981. However, during the 1980s and 1990s it more than tripled rising to $275.1 billion by the end of 1991 and $ 334.3 billion in 1995, before declining slightly to US$ 311.8 billion by the end of 1997 (see figure 1). However according to ECA data, Africa's external debt stock at the end of 1997 amounted to US$ 344.1 billion and rose to US$350.1 billion by the end of 1998.[6] These divergences could partly be due to the different ways short-term debt is treated.

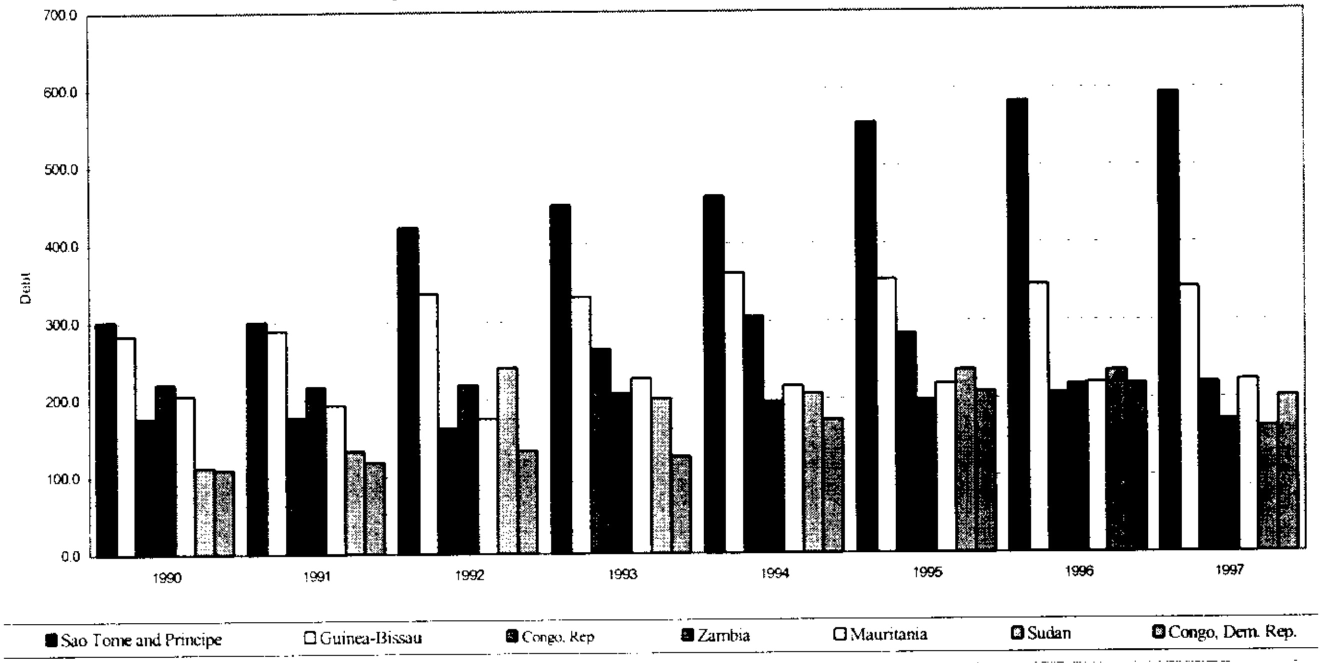
Figure 2 Africa's Total Outstanding Debt as a Percentage of GDP



Source: Global Development Finance and World Development Indicators

14. For Sub-Saharan Africa total debt outstanding at the end of 1997 amounted to US$ 230.1 billion (including South Africa), And of which US$ 137. 6 billion, nearly 60 percent, was official debt (bilateral and multilateral debt). Multilateral debt (debt owed to multilateral financial institutions) amounted to US$75.0 billion, nearly 42 percent of their total official debt. However, it is important to note that for most low-income countries multilateral debt has become an important proportion of their total official debt.

Figure 3: Africa's Total Outstanding Debt (% of GDP): 1990-1997



15. Some of the larger borrowers include Algeria (30.9 billion at the end of 1997), Egypt (US$29.9 billion), Morocco (US$ 19.3 billion), Nigeria (US$ 28.5 billion), South Africa (25.2 billion) and Sudan (US$ 16.3 billion). However, a number of these countries, despite their levels of borrowing, do not have serious debt problems because they have the capacity to pay and their debt indicator levels are relatively low. However, many Africa countries record total debt to GDP ratios that clearly reveal that they have considerable debt burdens. During the 1995-97 period, five African countries had an average ratio of total debt outstanding to GDP above 200 percent, nine between 100-199 percent, and eighteen between 50-99 percent (see Table – in the Annex). It is also important to recall that, for a large number of these countries, the reported ratios were recorded despite benefiting from a number of traditional debt-relief mechanisms such as the Paris Club.

16. The extent of the debt burden is also reflected in the amounts of debt service paid annually by African countries as well as an accumulation of arrears. Total debt service payments by African countries amounted to US$33.0 billion in 1997 and rose to US$ 35.7 billion by 1998. As a percentage of export of goods and services, such payments represented 21.3 percent of export earnings of African countries in 1997 and 30.9 percent in 1998. Total debt service payments by Sub-Saharan Africa in 1997 amounted to US$16.0 billion, more than double the amount paid in 1980. Interest payments alone amounted to US$ 5.1 billion, or nearly 32 percent of total debt service payments. Thus despite the various debt relief initiatives that have been put in place, Africa continues to experience heavy debt service burden as well as the economic and social costs of the debt overhang.

17. Judged by the debt service indicators and debt servicing capacity, it is clear that many African countries still have difficulties servicing their debts. For Sub-Saharan Africa total debt service payments absorbed on average nearly 14.7 percent of their exports of goods and service. For a number of countries, this figure was much higher and reflected the amount of scarce foreign exchange the countries were required to devote to debt servicing. These figures were 40 percent for Burundi, 38.2 percent for Zimbabwe, 31 9 percent for Sao Tome and Principe, 28.4 percent for Guinea, 27.7 percent for Mauritania, and 26.1 percent for Cote D'Ivoire. Furthermore, many of the countries have accumulated payment arrears on their debt service payments. The discrepancy between debt service paid and debt service due has continued to grow. For Sub-Saharan Africa the average ratio of total stock of arrears to exports of goods and services was 34.1 percent at the end of 1997. For some countries the figures were much higher, 642.1 percent for Ethiopia, 474.2 for Sao Tome and Principe. 185.6 percent for Comoros, 180.9 percent for Nigeria and 94.4 percent for Zambia. Additionally, the ratio of scheduled external debt service relative to government current expenditures has exceeded 50 percent in a number of African countries. The extent of the inability of African countries to service their debts has also been reflected in a sharp increase in accumulated arrears. These had reached nearly US$64 billion by end 1996, amounting to more than a quarter of the total debt and about two-thirds of the increase in debt in 1998.[7]

18. Despite differences among African countries in the severity of the debt problem, it is generally acknowledged that Africa's debts are too high for most of the countries. Indeed, from among the forty-one countries identified as HIPC countries in the world, thirty-three are in Africa. Such a heavy debt burden absorbs much needed resources which could be used to support development in Africa and to provide basic social services, such as education and health. It is in this context that calls have been made constantly by African countries for greater debt relief to be provided to them by the creditor countries and institutions.

IV. The Current Debt Relief Measures in the Context of Africa's Financing Requirements

A number of initiatives have emerged in recent years aimed at alleviating the debt burden of the most-heavily-indebted poor countries, both within the framework of bilateral arrangements and also as part of the process of trying to improve the debt relief provided under the Heavily Indebted Poor Countries (HIPC) Initiative. Leaders of the world's industrialised countries meeting in Cologne, Germany, 18-20 June 1999 agreed in principle to cancel an additional US$45 billion in debt owed by the heavily indebted poor countries. This was to reduce significantly debt service payments of at least 16 countries.

20. The Agreement by the Group of Seven (G7) leaders came as a result of intense pressure by the international community for the G7 to provide meaningful debt relief to the poorest countries. This was a big advance beyond the US$25 billion the G7 offered in Birmingham in 1998, although it still left many countries with no possible reduction in debt service payments. Furthermore, African countries and the international community have been calling for improvements in the HIPC Initiative. These have focused on the need for additionality of resources provided by the HIPC Initiative; the need for flexibility in the

[7] Economic Commission for Africa: The Challenges of Financing Development in Africa, E/ECA/CM.24/2. April 1999

sustainability analysis; the need to take into account the fiscal impact of debt service; and the need to reconsider the cut off period before a country can access resources of the HIPC facility. A number of changes have been made to the HIPC Initiative in response to the concerns raised by African countries and others. However, many are still of the view that the Initiative still lacks flexibility to deliver appropriate debt relief, and in a timely manner, to help poor countries achieve sustainable development.

21. Notwithstanding recent debt relief initiatives, it is generally acknowledged that for many African countries, debt service burdens continue to exert significant pressures of financial resources of these countries, with a negative impact on their growth prospects. Accordingly, many are calling for further debt relief to be provided not only to the heavily indebted poor African countries, but also to middle income heavily indebted countries. African countries and the international community have been calling for improvements in the HIPC Initiative.

22. More recently, the World Bank and the International Monetary Fund have undertaken an extensive review and consultation on the HIPC Initiative. Beginning in 1999, the World Bank and IMF organized a global process to solicit recommendations from governments and civil society on modalities to enhance the effectiveness of the HIPC Initiative. The aim of the consultation was to inject some form of transparency in the reform and the re-designing of the HIPC Initiative. The first phase of the review process focused on issues of debt sustainability and modalities for deepening and broadening the Initiative, as well as ways of accelerating disbursement of resources made available under the Initiative. The second phase focused on modalities for linking debt relief to poverty reduction strategies. The result of these consultations has been proposals for an "Enhanced HIPC Framework" which could, subject to funding, provide much deeper, broader and faster debt relief to the heavily indebted poor countries.

23. The main features of the proposed enhanced framework would include:[8] lowering net present value of debt to export ratio target to 150 percent; lowering net present value debt to government revenue ratio target to 250 percent; and lowering of the export to GDP and government revenue to GDP ratio thresholds to 30 percent and 15 percent respectively. Furthermore, it is proposed to fix debt relief at the decision point rather than at the completion point[9]and to determine debt relief based on actual numbers instead of projected figures. Similarly, although no generalised shortening of the qualification period has been agreed upon, it was agreed to introduce "floating completion points", i.e. the completion point is tied to the fulfilment of a set of reform commitments, rather than an interim track record of 3 years.

24. These proposals could significantly increase the cost of the HIPC Initiative, which would rise from roughly US$12.5 billion in net present value terms (NPV) under the original framework to more than $28 billion in NPV terms under the enhanced framework. As of February 2000, the World Bank and the IMF had reviewed eligibility for debt relief of sixteen (16 countries) and of these fourteen (14) qualified for debt relief packages. Debt relief totalling $10.5 billion in debt service relief has been agreed for eight (8) countries; and preliminary eligibility for debt relief has been undertaken for six (6) other countries which could benefit from nearly $14 billion in debt service relief.[10]

[8] World Bank: HIPC Review: Outcome of the 1999 Review

[9] The decision point is the point at which a country's eligibility for HIPC debt relief is determined, and the completion point is a point at which a country becomes eligible to receive irrevocable HIPC debt relief as agreed at the decision point.

[10] World Bank: HIPC Initiative: Progress Through February 2000.

25. The debt relief already agreed for the eight countries is both from the "original HIPC framework" and also under the "enhanced HPIC framework". Bolivia, Burkina Faso, Cote d'Ivoire, Guyana, Mali, Mozambique and Uganda are expected to receive nearly $6.8 billion in debt service relief over time under the original HIPC framework. On the other hand, Bolivia, Mauritania, and Uganda are expected to benefit from the enhanced HPIC Initiative and receive nearly $3.7 billion in debt service relief over time.

26. For countries where preliminary eligibility had been reviewed by the Bank and the Fund, Ethiopia and Guinea-Bissau were expected to receive debt relief packages amounting to $ 2 billion under the original HIPC framework. These packages were put on hold because of armed conflicts, although that for Guinea-Bissau has been reactivated. Countries whose preliminary eligibility have been evaluated and could benefit from the "enhanced HIPC framework" include Guinea, Honduras, Nicaragua, and Tanzania. These countries could benefit from debt service relief amounting to $12 billion over time.

27. Two African countries, Benin and Senegal, were considered to be sustainable under the original framework, but will be reassessed under the "enhanced framework". Furthermore, the World Bank and the IMF intend to re-evaluate some other countries, which were completely excluded in the original HIPC framework. These include Cameroon, Chad, Malawi, Yemen and Zambia.

28. Notwithstanding the notable efforts that have been so far undertaken to resolve the African debt problem, many still believe the problem is far from being satisfactorily resolved. It is the belief of many that a durable solution to the African debt problem has to be anchored within a broader framework of providing adequate development finance to African countries to enable them to achieve sustained economic growth with poverty reduction. In the final analysis this will require a combination of a substantial reduction in Africa's stock of debt and additional financing to support development.

V. The Challenges of Financing Development in Africa in the Context of the Debt Burden

The Economic Commission for Africa (ECA) has estimated that for Africa to achieve the goal of the Copenhagen Social Summit of reducing poverty by half by the year 2015, this will be a monumental challenge to mobilise both external and domestic finance in order to attain this target. ECA has observed that to reduce poverty in Africa by half by the year 2015, a goal ratified at the World Summit for Social Development in Copenhagen in 1995, it will require a 4 percent reduction in the number of people living in poverty each year (Economic Commission for Africa: Economic Report on Africa, 1999). The minimum requirement to achieve this will have to include an average growth rate of 7 percent per year and this in turn requires an investment rate equal to 33 percent of GDP. At the current domestic savings rates in Africa, of around an average of 15 percent of GDP and ODA of 9 percent of GDP, this leaves a resource gap of about 9 percent. Africa also faces formidable challenges in mobilizing development finance, especially in the face of declining official development assistance and difficulties of raising foreign direct investment.

30. Achieving the targets of poverty reduction as indicated above will require intensified efforts by both African countries and their development partners to mobilise official development assistance (ODA), private sector investment flows to Africa, debt relief,

mobilisation of domestic savings and reversal of capital flight. Recent trends in ODA give much cause for concern and a clear indication that large increases in ODA are unlikely, even as the prospects for aid effectiveness in Africa are improving. Furthermore, Africa has not benefited from the phenomenal growth in foreign investment and the continent faces policy challenges and key conditions needed to attract foreign investment.

31. Given the current declining trends in official development assistance, depressed commodity prices, and the inability of many African countries to attract private sector capital flows, debt relief will emerge as an important source of development finance. Accordingly, providing greater relief will need to become an integral part of the efforts by the donor community to assist African countries in mobilising development finance needed to support sustained economic growth and poverty reduction.

32. In meeting this challenge, Africa and its development partners will need to mobilise all types of development finance, i.e. aid, debt relief, foreign direct investment and domestic finance. Furthermore, to meet this challenge and cover this resource gap, policy-makers will need to take actions to promote domestic resource mobilisation, reverse capital flight and attract foreign direct investment.

33. Dealing effectively with the African debt problem has to be part and parcel of the equation for mobilising development finance in Africa. The heavy debt service payments that African countries have to make on their external debt absorb much needed resources and foreign exchange that countries could use to support sustained economic growth and poverty reduction.

34. The Heavily Indebted Poor Countries (HIPC) Initiative represents the first step in an effort to deal with the debt problem in a holistic manner. It represents a commitment by the international community to reduce to sustainable levels, the external debt burden of eligible heavily indebted poor countries that had successfully established a strong policy track record. It also encompasses all debt owed by these countries in order to target overall debt sustainability. It has the participation of all creditors, as it is based on broad and equitable sharing of the burden of providing debt relief. Furthermore, its overarching objective is to target overall debt sustainability, focusing on the total debt of a country and its associated debt service burden. Debt sustainability of a country is to be determined on a case-by-case approach, depending on the circumstances of a country.

Poverty Reduction Strategies and Debt Relief

35. Following extensive consultations, the Development and Interim Committees of the World Bank and the International Monetary Fund endorsed a mandate for change in the HIPC Initiative and to integrate specific proposals to modify the framework of the Initiative. The fundamental basis of the proposed changes was how to integrate poverty reduction strategies in the context of debt relief to be provided to the HIPC countries. The Phase II of the HIPC Review therefore focused on the link between debt relief and poverty reduction.

36. In this respect, modalities were sought on how to integrate the multidimensional international goals and internationally agreed targets for the year 2015 in the development agenda of the HIPC countries. These internationally agreed targets included: reducing the incidence of extreme poverty by half by the year 2015; reducing infant mortality by two thirds during the same period; achieving universal enrolment in primary education; and eliminating gender disparity in education by 2005.

37. It is acknowledged that these long–term targets cannot be achieved without sustained per- capita income growth. Substantial reduction in poverty can only be achieved if per capita real income rises sufficiently, as it is infeasible to achieve more than a fraction of this through income redistribution with low-income countries. Since sustained growth in per capita income is essential to tackle the pervasive poverty in most HIPC countries, strategies must be integrated into an overall policy framework that will allow countries to move to a new path of sustainable faster growth. A sound macroeconomic framework geared to stability is a prerequisite for economic growth. However, other requirements for sustained growth are also necessary and include appropriate economic structures, good governance and social stability, which encourage private sector investment and economic activity.[11]

38. Although growth is necessary for sustained attack on poverty, it is not sufficient on its own to reduce poverty, and policy actions directed specifically at poverty reduction are required, such as directing public social spending at helping the poor improve their health and educational status. There is also evidence of a two-way causation between economic growth and social conditions. Investment in human capital can play an important role in the development of a virtuous circle of growth and poverty reduction.

39. The proposals which emerged from the HIPC country experiences and consultations with other members of the development community indicate that an enhanced framework for poverty reduction would invariably have to require long-term action on numerous fronts, including recognition that poverty is multidimensional and not limited to social services; sustained poverty reduction will not be possible without economic growth; focusing on transparent, poverty-related goals and establishing mechanisms for broad-based monitoring of intermediate proxy indicators are essential to ensure that action programs and resource management processes are not only well designed but also effectively implemented; and broad-based participation is essential to sustained implementation of anti-poverty strategy. A core of this approach would be the understanding of the nature and locus of poverty in each HIPC country.

40. Following these extensive consultations, the Development and Interim Committees of the World Bank and the international Monetary Fund endorsed in September 1999 a framework to strengthen the link between debt relief and poverty reduction and to enhance the poverty focus of the Bank and the Fund concessional lending. The new approach is based on poverty reduction strategies prepared by countries and embodied *in "Poverty Reduction Strategy Papers (PRSPs)".* PRSPs will provide the context for concessional assistance to low-income countries provided by IDA of the World Bank and by the IMF. Ministers endorsed the proposal to make poverty reduction a key and more explicit element of the Fund's growth-oriented strategy for low-income countries, replacing the ESAF with the Poverty Reduction and Growth Facility (PRGF).[12]

41. The PRSP program is expected to go beyond a revision of the way in which concessional financing by the World Bank and the IMF is provided. Its underlying goal is to support a comprehensive, country-led effort to help sharpen the poverty focus and effectiveness of development strategies in low-income countries, and support for their strategies by external partners. It is expected that the resulting strategies need to focus on policy actions to increase growth and reduce poverty, all within a coherent macroeconomic framework. Poverty reduction strategies re expected to be country-owned and designed in

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[11] International Monetary fund: Heavily Indebted Poor Countries (HIPC) Initiative: Strengthening the Link between Debt Relief and Poverty, August 26, 1999.

[12] World Bank and IMF: Progress Report on Poverty Reduction Strategy Papers (PRSPs), April 2000.

a participatory fashion; and comprehensive in approach, recognising the multidimensional nature of the causes of poverty and strategies to alleviate it. They should also be based on a medium and long-term perspective, including appropriate monitoring indicators linked with agreed international development goals (IDGs) for poverty reduction, education, health and gender equality. Furthermore, to be effective, PRSPs need to be built on partnerships with multilateral and bilateral donors to support national poverty reduction strategies.

42. While many have welcomed efforts to put poverty reduction at the core of the development agenda of the HIPC countries, nonetheless linking debt relief to poverty reduction strategies has raised a number of issues. Firstly, preparation of full Poverty Reduction Strategy Papers (PRSPs) takes times. Often one to two years depending on individual country circumstances. Thus there is unavoidable tension between the principle of government-owned PRSPs prepared with the participation of a broad spectrum of stakeholders on the one hand, and the need to avoid delays in bringing as many countries as possible to their HIPC decision points within a timeframe appropriate to their need for debt relief. Secondly, at the centre of preparation of PRSPs are efforts to articulate the elements of a strategy for poverty reduction that is based on a comprehensive view of the nature and causes of poverty. Furthermore, central is the recognition that poverty reduction strategies need to take into account the multidimensional elements involved in both the determinants of poverty and efforts to alleviate it. Experience has shown that there is a two-way linkage between growth and poverty. Rapid growth is essential for reducing poverty, but persistent poverty and inequality can reduce growth potential. These aspects make the drawing up of PRSPs a complex and complicated undertaking. Thirdly, it is recognised that the PRSP process would need to evolve over time, early experience would need to be evaluated and used to refine the process of strategy implementation on an ongoing basis.

43. The main concerns of the HIPC countries, including those in Africa, is that while putting poverty reduction at the centre of the development agenda of these countries is a step in the right direction, making preparation of PRSPs a condition for access to aid flows and debt relief will exacerbate the debt problems of these countries. The complexity of designing PRSPs and the time needed in the participatory process for their formulation may give rise to further delays in these countries accessing debt relief under the HIPC Initiative.[13] These are issues that need to be resolved. For many African countries, debt relief is long overdue if they are to attain meaningful development and poverty reduction.

VI. External Debt and Economic Growth

As noted above, the underlying objective of the HIPC initiative, on its own or as part of the PRSP process, is to reduce poverty through rapid economic growth. The significance of the initiative thus depends, in part, on the extent to which the debt burden of African countries has slowed down their growth. In order to assess the latter, a growth equation that includes measures of the debt burden as arguments is estimated. The growth impact of debt reduction is subsequently approximated using the estimates thus obtained.

[13] This problem and its potential consequences have also been identified by the United States General Accounting Office in its report on the HIPC initiative. See GAO (2000).

45. The cancellation of the poor countries' debt has been on the agenda of policymakers for quite a long time. A number of recent studies have tried to analyse the impact of debt cancellation on the overall performance of the heavily indebted poor countries. The results of these studies have been quite revealing and point out to the need for a more comprehensive debt relief strategy, even beyond the Cologne Agreement, if a lasting solution to the debt problems of these countries is to be found.

46. Two main features are associated with the external debt of African countries. First, it is excessive relative to these countries' current ability to pay. Second, most of it is either directly owed by the public sector or carries a public sector guarantee. Both are particularly true for African HIPCs. Such excessive public debt burden can have a variety of economic consequences. These effects relate to the actions of governments to deal with the debt burden, on the one hand, and the expectations formed and the choices made by economic agents in responses to those actions, on the other (Agenor and Montiel (1996)).

47. Excessive debt service obligations and a debt overhang can force governments to raise revenue through distortionary means (increased taxation, capital levies, and greater reliance on the inflation tax), increase domestic borrowing, and reduce public expenditure. Lower social expenditure and public investment, higher inflation, and increased domestic market-determined interest rates emerge as direct consequences. These effects are likely to reduce the welfare of citizens and lower growth potential. Moreover, the expectations of economic agents and the corresponding choices they make are modified. Essentially, private savings (domestically-held) and domestic private investment are reduced and capital flight intensified. These responses are also likely to engender further reductions in growth.[14]

48. In short, the various effects of the debt burden translate into a negative impact on the growth performance of a country and the wellbeing of its citizens. Hence, it is possible to assess, at least partially, the significance of this impact via a growth equation in which measures of the external debt burden are included as arguments. This is the avenue followed in this section.

Econometric Procedure

Specification

49. In recent empirical growth analysis, it is common to start with the augmented Solow model. The theoretical model postulates that GDP per worker is determined by initial GDP per worker, the initial level of technology, the shares of GDP invested in physical and human capital, the growth rate of the workforce, the rate of technological progress, the depreciation rate, the shares of factors in output, and the rate of convergence to the steady state - the last three being subsumed in the estimated parameters of the growth equation (see for instance Hoeffler (2000), Temple (1998), and Easterly and Levine (2000)).

50. It is also common to extend the augmented Solow model by including variables considered generally pertinent to growth and/or are of specific interest. These include policy variables, institutional variables, measures of risk and uncertainty, international trade

[14] Further theoretical details and some empirical evidence on the debt problem and its impact on an economy can be found in Agenor and Montiel (1996). Hadjimichael and Ghura (1995) provide evidence on the detrimental effects of the debt burden on private savings and investment, while Ajayi (1997) reports on the impact of external debt on capital flight. The latter two studies are specific to Africa.

variables, geographic ethno-linguistic variables, and dynamic effects (see, for instance, Barro and Salai-Martin (1995) and O'Connell and Ndulu (2000)). These variables are identified as potential determinants of the level and efficiency of factors of production, and thus the speed of economic growth. Following that practice and reflecting the objective of the paper as well as data limitations, a modified augmented Solow model is estimated.

51. Specifically, the growth rate of real per capita GDP is chracterised as a function of one-period lagged real per capita GDP (**LRPCGDP1**), total investment as a percentage of GDP (**LINVTGDP**), and population growth (**LPGTPDEP**). [15,16] As specified in the augmented Solow model, these variables are entered in logarithms. Six additional variables are introduced:

- The ratio of the net present value of total debt service to exports (NPVDSEXP) and the ratio of total debt to GDP (TEDGDP) are introduced as measures of a country's debt burden. The former is intended to capture the impact of the resource drain caused by heavy debt service obligations and the corresponding crowding out effect on public and private investment. It is expected to have a negative sign. The debt-GDP ratio is aimed at capturing the debt overhang effect. It is also expected to have a negative sign. In short, negative and significant coefficients of the two variables are viewed as evidence of the 'crowding out' and 'overhang' effects of the debt burden, respectively.
- The black-market premium (**BMP**) is added as an indicator of government distortions of markets (Barro and Salai-Martin (1995)). It is therefore expected to have a negative impact on growth.
- The state of financial development or financial depth is also included since it is viewed as favourable to investment and growth. This variable is proxied by the ratio of currency in circulation and bank deposits (or M2) to GDP (**M2GDP**). The expected sign is positive.
- It is also argued that macroeconomic instability is detrimental to investment and growth. This impact is captured by the variability (as measured by standard deviations) of the real effective exchange rate (**SDREER**) and inflation (**SDINFLAT**).[17] These variables are expected to have negative coefficients.

52. The parameters of the growth model are estimated using the within-groups (or fixed effects) procedure for panel data. In other words, time-invariant differences among countries are assumed to be captured by country fixed effects.[18,19]

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[15] In line with common practice 0.05 is added to each country's population growth rate to account for technical change and physical capital depreciation.

[16] As noted earlier, the augmented Solow model also includes investment in human capital as a determinant of growth. This variable is usually proxied by the average years of total schooling for the population aged 15 years and older. Due to rather small number of observations for the current sample this route could not be followed in the present instance. However, it is worth noting that the proxy has been found to be insignificant in many cases (O'Connell and Ndulu (2000)).

[17] The variability of the real effective exchange rate and inflation is usually measured by the standard deviation of the variables for each country over the entire period covered. As a result, one time-invariant estimate is obtained for each country. In this paper, the measure used is the standard deviation of each of these variables for each country during each successive half-decade. Thus, the measure is constant within each half-decade, but varies across half-decades. This measure is adopted in order to generate temporal variation in the volatility of the variables, so as to estimate a country fixed effects model.

[18] In contrast to the customary practice of using five-year or decadal averages of variables, the paper uses annual data. The advantages and disadvantages of these alternatives can be debated. It suffices

Data

53. The dataset employed by the regression is extracted from the database maintained by a group of researchers at the World Bank.[20] It covers thirty-nine African countries over the 1971-1997 period. Twenty-six of these countries are HIPC countries, while the rest are non-HIPC countries. Thus, the dataset contains thirty-nine cross-sectional observations and twenty-seven time-series observations, i.e., 1053 potential observations. However, as usual, there are missing observations, which reduced the actual number of observations used to 466.

Empirical Results

54. The estimation results are summarized in Table 1. Since the focus is on the relationship between growth and the debt burden, the various attributes of the growth equation will not be examined in detail here. It suffices to say that, with the exception of the volatility of the real exchange rate, all the variables have coefficients with signs that are predicted by theory and obtained by many researchers (see O'Connell and Ndulu (2000) for a very recent and Africa-specific set of results).

55. The reported results indicate that growth and the debt burden are negatively correlated. Indeed, the coefficients of both measures of the debt burden are negative as expected and statistically significant. Since the level of investment also enters positively and significantly, it is possible to argue that the debt burden variables work not only through the level of investment, but also through the productivity of factors of production as well as the efficiency of resource allocation. In short, the parameter estimates are indicative of the presence of the 'crowding out' and 'debt overhang' effects of the debt burden carried by African countries.

Table 1: Within Groups (or Fixed Effects) – Growth Equation

	Coefficient	Standard Error	t-ratio	P-value
LINVTGDP	0.056627	0.009861	5.74	0.000
LPGTPDEP	-0.099147	0.027051	-3.66	0.000
NPVDSEXP	-0.000072	0.000028	-2.51	0.012
TEDGDP	-0.000281	0.000121	-2.32	0.024
M2GDP	0.001089	0.000449	2.43	0.015
BMP	-0.000035	0.000078	-0.45	0.653
SDREER	0.000117	0.000206	0.56	0.572
SDINFLAT	-0.000885	0.000501	-1.77	0.077
LRPCGDP1	-0.211595	0.041406	-5.11	0.000
Adjusted R-squared = 0.17				
Model Fit: F[41, 486] = 3.64, P-value = 0.000				
Pooled OLS vs. Fixed effects: F[32, 486] = 2.92, P-value = 0.000				
N = 528				
Note: Heteroscedasticity-corrected standard errors are used.				

to note at this juncture that the use of annual data allows for demand-side effects and exogenous shocks that may be eliminated by averaging over years.

[19] Note that potential dynamic effects and endogeniety of variables are ignored. Further work to allow for these possibilities is being done. The reported regression results should, thus, be used with caution.

[20] This database is posted at the web-site of the Global Development Network as well as that of the World Bank.

56. Another interesting question is whether these debt burden measures are relatively important determinants of growth. This relative importance can be measured by unit-free standardized regression coefficients (or beta coefficients).[21] The beta coefficients are reported in Table 2. They indicate that the relative importance of the debt service to exports ratio and the debt to GDP ratio is quite high. Indeed, in absolute value terms, only investment and lagged income have larger beta coefficients.

Table 2: Beta-coefficients

	Coefficient	Standard Deviation of variable	Standard Deviation of GDP growth rate	Beta- coefficient
LRPCGDP1	-0.211595	0.670959	7.456000	-0.019041
NPVDSEXP	-0.000072	314.362000	7.456000	-0.003017
TEDGDP	-0.000281	60.049200	7.456000	-0.002264
LPGTPDEP	-0.099147	0.097643	7.456000	-0.001298
SDINFLAT	-0.000885	10.732500	7.456000	-0.001274
BMP	-0.000035	108.318000	7.456000	-0.000508
SDREER	0.000117	59.174400	7.456000	0.000925
M2GDP	0.001089	14.180900	7.456000	0.002072
LINVTGDP	0.056627	0.552415	7.456000	0.004196

Implications to the HIPC initiative

57. Assuming that the correlations generated by the regression represent causal links, it is possible to estimate the potential growth impact of the HIPC initiative. The parameter estimates imply that a reduction of the debt service to exports ratio by one percentage point would increase the growth rate of real per capita GDP by about 0.007 percentage points. Similarly, an equal rate of reduction in the debt to GDP ratio would raise income growth by about 0.028 percentage points. In this sense, it is possible to estimate the growth impact of alternative patterns of debt reduction due to HIPC using the following relations:

$$\mathbf{d}(\mathrm{GRPCGDP}) = (-0.028) \times \mathbf{d}(\mathrm{TEDGDP})$$
$$\mathbf{d}(\mathrm{GRPCGDP}) = (-0.007) \times \mathbf{d}(\mathrm{NPVDSEXP})$$

where **d**x represents change in variable x. The rest of the variables are as defined above. Table 2 presents the results associated with different hypothetical debt reduction scenarios.[22]

Table 3: Growth Impact of Debt Reductions

d(TEDGDP)	Coefficient	d(GRPCTGDP)	d(NPVDSEXP)	Coefficient	d(GRPCTGDP)
-10	-0.028	0.28	-10	-0.007	0.070
-25	-0.028	0.70	-25	-0.007	0.175
-50	-0.028	1.40	-50	-0.007	0.350
-75	-0.028	2.10	-75	-0.007	0.525
-100	-0.028	2.80	-100	-0.007	0.700

Note: All changes are in percentage points.

[21] For each right-hand-side variable x, the beta-coefficient is computed as the product of the coefficient of x and the standard deviation of x divided by the standard deviation of the dependent variable (which is the growth rate of real per capita GDP in the present case).

[22] The scenarios assume that the size of the external debt will fall by amounts sufficient to lower the debt to GDP ratio to the corresponding figures.

58. The growth impacts presented in Table 3 are substantial, particularly in the light of the negative average growth rates associated with HIPC African countries in the sample (see Table – A.1 in the annex). The table indicates that a 50 per cent reduction in debt service would yield a 1.4 percentage points increase in the growth rate of real per capita GDP, while a 100 per cent reduction (or a total write-off) would yield a 2.8 percentage points increase in real per capita GDP growth.

59. Another relevant exercise is to gauge the growth impact of the average estimated reduction of debt stock (in net present value terms) through the HIPC initiative obtained or that may be obtained by seventeen African HIPCs. The simple average of the estimated debt reductions is about 43 percent (World Bank (2000)). Accordingly, the growth impact of such a reduction for African HIPCs can be approximated as: [23]

$$\mathbf{d}(\text{GRPCGDP}) \cong (-0.025) \times [\mathbf{d}(\text{TED})/\text{TED} - \mathbf{d}(\text{GDP})/\text{GDP}]$$

For HIPC countries in the sample the average growth of GDP over the period has been – 0.3 percent. Hence, for these countries, the estimated debt reduction of 43 percent would on average speed up growth by about 1.2 percentage points. Again this is a considerable acceleration given the negative average growth in per capita incomes experienced by these countries during the period covered.

60. To conclude, the HIPC initiative appears to be capable of generating significant growth gains to benefiting countries. As expected, the initiative cannot by and in itself lead to growth rates that are high enough to reduce poverty to the level set as part the International Development Goals. Nevertheless, quicker and deeper debt reductions through further improvements of the HIPC initiative can produce even greater gains for African HIPCs.

VII. Conclusion

Most African countries carry a considerable debt burden. This state of affairs persisted despite traditional debt relief mechanisms currently used by Sub-Saharan African countries, including debt restructuring, debt rescheduling, reduced debt service, debt buy-backs, interest rate options, and various debt conversion schemes. The effectiveness of these techniques in significantly reducing the debt stock of these countries has thus been rather limited.

61. The persistent debt burden negatively impacted on the economic performance of African countries. This has been confirmed by the reported growth regression results. The same results suggest that debt reductions through the HIPC initiative can considerably boost the growth performance of these countries. However, these gains are not sufficient in the light of growth rates required to reduce poverty by half by 2015.

[23] Note that the reductions refer to the estimated decline in the net present value of the debt stock due to HIPC and after the full use of traditional debt-relief mechanisms (World Bank (2000)). They are thus different from reductions in the ratio of external debt at face value to GDP – the variable used in the estimation. However, the results are suggestive of the magnitude of the growth impact to be expected.

62. Accordingly, heavily indebted countries of Sub-Saharan Africa need to articulate more creative strategies for bringing about further debt reduction and rapid growth. These strategies could include the adoption and implementation of macroeconomic policies that would encourage repatriation of flight capital and collective pressure for debt forgiveness or debt cancellation via HIPC and other appropriate mechanisms.

References

Agenor, P-R. and P. J. Montiel (1996). *Development Macroeconomics*, Princeton University Press, Princeton, New Jersey.

Ajayi, S. Ibi (1997). "An Analysis of External Debt and Capital Flight in the Severely Indebted Low Income Countries of Sub-Saharan Africa", *IMF Working Paper*, WP/97/68, International Monetary Fund, Washington, DC.

Barro, R. J. and Xavier Salai-Martin (1995). *Economic Growth*, McGraw-Hill, New York.

Easterly, W. and Ross Levine (2000). *It is not Factor Accumulation – Stylized Facts and Growth Models*, (mimeo).

Hadjimichael, M. T. and D. Ghura (1995). "Cross-Country Analysis", in *Sub-Saharan Africa Growth, Savings and Investment,* M. T. Hadjimichael et. al., Occasional Papers No. 18, International Monetary Fund, Washington, DC.

Hoeffler, A. E. (2000). "The Augmented Solow Model and the African Growth Debate", *CID Working Paper*, No. 36, Center for International Development, Harvard University.

O'Connell, S. and Benno J. Ndulu (2000). *Africa's Growth Experience: A Focus on the Sources of Growth*, (mimeo).

Temple, J. (1998). "Robustness tests of the augmented Solow model", ***Journal of Applied Econometrics***, July-August, 13(4), 361-375.

U.S. General Accounting Office (2000). *Developing Countries: Debt Relief Initiative for Poor Countries Faces Challenges*, (mimeo).

Variable Definitions

1) *Real GDP Per Capita* is GDP per capita in constant dollars (international prices, base year 1985).

2) *Black Market Premium* = [(Parallel exchange rate ÷ official exchange rate) – 1] × 100.

3) *Real effective exchange rate index* = [(Local Consumer Price Index ÷ US Consumer Price Index) × Official exchange rate]. The base year is 1995, i.e., 1995=100. Note: Consumer price index reflects changes in the cost to the average consumer of acquiring a fixed basket of goods and services. The Laspeyres formula is generally used. Official exchange rate refers to the actual, principal exchange rate and is an annual average based on monthly averages (local currency units relative to U.S. dollars) determined by country authorities or on rates determined largely by market forces in the legally sanctioned exchange market.

4) *Total External Debt*: Total external debt is debt owed to nonresidents repayable in foreign currency, goods, or services. Total external debt is the sum of public, publicly guaranteed, and private non-guaranteed long-term debt, use of IMF credit, and short-term debt. Short-term debt includes all debt having an original maturity of one year or less and interest in arrears on long-term debt. Data are in percentage of GDP.

5) *Gross Secondary School Enrollment*: Gross secondary school enrollment ratio is the ratio of total secondary school enrollment, regardless of age, to the population of the age group that officially corresponds to the level of secondary school education. Estimates are based on the International Standard Classification of Education (ICSED). Secondary education completes the provision of basic education that began at the primary level, and aims at laying the foundations for lifelong learning and human development, by offering more subject- or skill-oriented instruction using more specialized teachers.

6) *Financial depth* = Money and quasi money (M2) as a percentage of GDP. Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This definition is frequently called M2; it corresponds to lines 34 and 35 in the International Monetary Fund's (IMF) International Financial Statistics (IFS).

7) *Debt Service Ratio* = the net present value of debt service as a ratio of exports of goods and services ratio. The debt service is discounted at the average LIBOR.

8) *Gross domestic investment*: Gross domestic investment consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including commercial and industrial buildings, offices, schools, hospitals, and private residential dwellings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales.

9) *Inflation* = Annual percentage change in consumer prices. Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a fixed basket of goods and services. In general, a Laspeyres index formula is used.

10) *Terms of trade*: Terms of trade of goods and services with 1995 = 100 (base year).

Table A.1: Some Group-Level Descriptive Statistics

All Sample African Countries

Variable	1971-74	1975-79	1980-84	1985-1989	1990-94	1995-97
Real per capita GDP (US$)	1130.692	1297.405	1323.108	1312.771	1329.277	1373.555
Growth rate of real per capita GDP (%)	2.5	1.4	-1.1	0.1	-1.6	1.5
Investment to GDP ratio (%)	19.569	23.477	21.634	19.694	20.131	20.959
Total External debt to GDP ratio (%)	21.657	39.674	57.857	89.088	102.624	107.301
Population Growth (%)	2.593	2.758	2.748	2.752	2.517	2.652
Black Market Premium (%)	24.598	63.778	81.723	65.132	40.871	24.558
Rate of inflation (%)	8.931	17.733	17.813	19.773	21.380	16.436
M2 to GDP ratio (%)	19.024	22.516	25.459	26.662	26.137	25.757
Real effective exchange rate	131.151	176.462	186.865	130.305	114.211	99.354
Net present value of debt service to exports ratio (%)	90.3	123.5	198.6	318.6	336.4	257.2

African HIPC Countries

Variable	1971-74	1975-79	1980-84	1985-1989	1990-94	1995-97	All Years
Real per capita GDP (US$)	836.587	852.554	850.800	807.972	739.160	730.176	802.875
Growth rate of real per capita GDP (%)	0.8	0.4	-1.6	-0.2	-2..6	1.4	-0.3
Investment to GDP ratio (%)	16.658	19.044	17.124	16.134	15.742	16.417	16.837
Total External debt to GDP ratio (%)	22.174	36.707	64.209	99.444	123.364	131.534	80.891
Population Growth (%)	2.634	2.823	2.811	2.860	2.619	2.913	2.777
Black Market Premium (%)	22.289	74.082	89.822	66.029	40.641	6.903	54.267
Rate of inflation (%)	9.071	20.541	20.058	25.816	26.622	18.455	20.790
M2 to GDP ratio (%)	15.881	18.632	20.060	20.001	19.814	18.569	18.860
Real effective exchange rate	131.242	194.069	208.716	134.925	122.097	99.522	145.160
Net present value of debt service to exports ratio (%)	91.0	132.1	230.9	363.9	418.9	316.6	280.1

African non-HIPC Countries

	1971-74	1975-79	1980-84	1985-1989	1990-94	1995-97	All Years
Real per capita GDP (US$)	1718.904	2187.108	2267.723	2322.369	2509.511	2660.312	2277.655
Growth rate of real per capita GDP (%)	5.8	3.5	0.1	0.8	0.4	1.7	2.0
Investment to GDP ratio (%)	25.921	32.599	29.401	26.608	28.571	29.695	28.825
Total External debt to GDP ratio (%)	20.623	45.608	45.157	68.377	61.143	58.834	50.400
Population Growth (%)	2.506	2.618	2.617	2.536	2.314	2.130	2.451
Black Market Premium (%)	26.451	33.971	58.686	58.219	38.199	38.605	42.787
Rate of inflation (%)	9.056	13.241	12.554	10.034	14.121	11.274	11.773
M2 to GDP ratio (%)	25.382	30.152	35.442	39.620	38.463	38.368	34.875
Real effective exchange rate	129.922	148.290	133.229	120.828	96.809	98.682	120.737
Net present value of debt service to exports ratio (%)	21.434	30.040	44.285	59.860	53.650	49.638	43.905

Table A.2: Some Country-Level Descriptive Statistics

ntry	Real per capita GDP (US$)	Growth rate of real per capita GDP (%)	Investment to GDP ratio (%)	Population Growth (%)	M2 to GDP ratio (%)	Net present value of debt service to exports ratio (%)	Total External debt to GDP ratio (%)	Black Market Premium (%)	Real effective exchange rate	Rate of inflation (%)
	2607.85	1.27	35.31	2.83	55.69	298.12	45.47	210.79	203.03	12.87
	1033.05	-.24	15.70	2.89	20.59	163.42	53.04	2.14		
a	1965.27	4.37	32.10	3.26	20.17	48.09	22.94	16.75	103.75	11.27
Faso	473.35	1.29	21.22	2.30	15.95	181.75	29.01	2.15	130.27	3.68
	491.18	.56	12.70	2.24	15.07	519.89	49.34	25.57	120.03	11.49
n	1102.23	.68	20.83	2.76	18.62	175.28	46.87	2.15	112.87	8.93
Africa	634.27	-1.28	11.85	2.27	17.14	150.57	44.13	2.10	136.94	4.42
	472.11	-1.93	7.60	2.51	12.72	146.25	31.08	2.15	125.04	5.66
	607.61	-1.74	25.08	2.55	20.24	187.65	84.08	7.57		
D.R.	453.25	-4.61	11.87	3.09	9.83		81.96	85.60	241.70	52.27
Rep.	2093.17	.63	31.94	2.82	16.81	196.50	134.86	.80	97.58	9.05
Ivoire	1551.39	-1.14	17.32	3.52	27.47	231.37	111.40	2.15	116.22	8.60
	1697.03	2.20	24.29	2.24	65.24	287.93	74.31	18.03	133.02	12.80
a	318.02	.82	14.31	2.66	33.62	483.98	119.20	102.06	166.10	7.55
	4343.64	.21	35.70	3.07	17.04	112.87	57.59	1.87	144.60	7.75
	850.35	.13	17.58	3.39	22.41	132.65	81.24	7.12	110.50	11.94
	918.43	-.10	11.88	2.74	15.95	183.19	51.38	118.23	351.31	41.37
Bissau	665.01	.06	27.13	2.86	13.51	1801.68	179.11	59.73	122.34	50.97
	868.90	1.66	22.78	3.38	29.95	192.45	60.84	18.14	104.59	14.29
	944.08	4.28	48.51	2.37	34.76	240.72	44.49	10.60	100.16	13.42
car	808.16	-2.54	10.64	2.68	17.32	363.22	80.23	21.22	171.40	15.52
	513.70	.96	21.41	3.03	19.32	230.36	80.13	50.06	141.56	22.76
	503.68	.90	16.91	2.42	18.44	304.72	82.61	3.56		
nia	885.36	.21	26.02	2.59	20.48	273.24	150.00	85.39	117.85	6.80
us	4768.52	4.17	25.78	1.22	49.50	74.35	34.49	5.38	104.04	10.45
	1919.65	1.88	23.25	2.15	44.67	345.99	66.88	5.18	107.08	7.16
	579.75	-2.37	13.56	3.18	13.62	194.52	51.36	2.14	174.58	6.61
	1131.01	.83	19.46	2.96	19.98	126.42	63.11	118.30	97.84	24.56
	698.39	-.41	13.11	2.80	13.95	226.74	28.34	41.57	108.59	9.34
	1132.60	.00	14.03	2.77	23.24	177.72	59.70	2.15	137.63	7.66
les	3100.58	3.69	29.97	1.37	34.68	59.42	65.51	9.93	87.07	7.52
Leone	965.84	-3.86	6.38	2.15	13.97	248.69	80.47	68.37	109.55	41.52
	840.72	.87	14.94	2.51	19.51	452.34	94.37	113.48	193.80	47.50
nd	2622.28	.19	27.36	3.06	27.06	38.64	31.38	12.45		
	610.15	-.45	21.70	2.84	30.46	162.08	81.28	2.15	132.97	7.83
	2588.07	3.25	27.45	2.20	41.06	169.31	50.61	10.63	92.90	6.31
	633.86	.28	10.73	2.65	12.04	253.55	55.47	295.84	225.69	67.84
	885.37	-2.01	20.26	3.01	24.75	273.45	146.97	120.76	91.84	82.79
e	1214.46	.51	19.41	2.90	20.57	145.97	30.68	65.88	156.33	14.60

he countries listed in this table make-up the African sample used by the paper.