

# Working Paper

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**An Analysis of External Debt and Capital Flight in the Severely Indebted Low Income Countries in Sub-Saharan Africa**

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**Abstract**

The general objective of this study is to analyze the external debt and debt burdens of the severely indebted sub-Saharan African countries, estimate the magnitude of capital flight from them, and relate the estimate of capital flight to some macroeconomic aggregates. The study also contains policy implications of international efforts to deal with the high levels of external debt in sub-Saharan Africa in conditions of extreme poverty, and stagnant and declining exports. It questions the theoretical foundation in which the external debt strategy has been based and offers solutions to the external debt problem.

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|   | <b>Page</b>  |
|---|--------------|
| <b>CONTENTS</b>   |              |
| Summary .....   | <u>4</u>     |
| I. Introduction .....   | <u>5</u>     |
| II. Economic Background: An Overview of Recent Economic Performance ... | <u>6</u>     |
| III. The External Debt Issue .....                                      | <u>8</u>     |
| IV. The Capital Flight Issue .....                                      | <u>11</u>    |
| A. What Is Capital Flight? .....  | <u>11</u>    |
| B. Is Anything Wrong with Capital Flight? .....                         | <u>12</u>    |
| Reduction in growth potential .....                                     | <u>12</u>    |
| Erosion of the tax base .....   | <u>12</u>    |
| Adverse redistributional consequences .....                             | <u>13</u>    |
| C. Measurement of Capital Flight .....                                  | <u>13</u>    |
| Measuring capital flight in general .....                               | <u>13</u>    |
| Measuring capital flight in sub-Saharan Africa .....                    | <u>14</u>    |
| D. Adjusting for International "Trade-faking" .....                     | <u>18</u>    |
| V. Linkages Between External Debt and Capital Flight .....              | <u>20</u>    |
| A. Incidence of External Debt and Capital Flight .....                  | <u>20</u>    |
| Debt-driven capital flight .....  | <u>21</u>    |
| Debt-fueled capital flight .....  | <u>21</u>    |
| Flight-driven external borrowing .....                                  | <u>21</u>    |
| Flight-fueled external borrowing .....                                  | <u>22</u>    |
| B. Evidence in Support of Linkages .....                                | <u>22</u>    |
| VI. Growth, Debt Overhang and Capital Flight .....                      | <u>22</u>    |
| VII. Summary of Findings and Conclusions .....                          | <u>23</u>    |
| Tables .....  | <u>27-56</u> |
| References .....  | <u>57-62</u> |

## List of Tables

|     |   |                       |
|-----|---|-----------------------|
| 1.  | Sub-Saharan African SILICs: Gross Domestic Investment, 1989-93 .....                            | <a href="#">27</a>    |
| 2.  | Sub-Saharan African SILICs: Gross Domestic Savings, 1980-93 .....                               | <a href="#">28</a>    |
| 3.  | Sub-Saharan African SILICs: Export Growth, 1980-92 .....  | <a href="#">29</a>    |
| 4.  | Sub-Saharan African SILICs: Terms of Trade Deterioration, 1980-93 .....                         | <a href="#">30</a>    |
| 5.  | Sub-Saharan African SILICs: Some Macroeconomic Indices of Performance .....                     | <a href="#">31</a>    |
| 6.  | Sub-Saharan African SILICs: External Debt, 1980-93 .....  | <a href="#">32</a>    |
| 7.  | Sub-Saharan African SILICs: Indicators of External Debt Burden,<br>1980-93 .....                | <a href="#">33-37</a> |
| 8.  | Sub-Saharan African SILICs: Schematic Summary of the Debt/Export<br>Ratio, 1993 .....           | <a href="#">38</a>    |
| 9.  | Sub-Saharan African SILICs: Indicators of External Debt Burden,<br>1980-93 .....                | <a href="#">39</a>    |
| 10. | Sub-Saharan African SILICs: Present Value Analysis, 1993 .....                                  | <a href="#">40</a>    |
| 11. | Sub-Saharan African SILICs: Ratio of Debt Service paid to Debt<br>Service Due, 1989-93 .....    | <a href="#">41</a>    |
| 12. | Sub-Saharan African SILICs: Fiscal Sustainability, 1994 .....                                   | <a href="#">42</a>    |
| 13. | Sub-Saharan African SILICs: Capital Flight Estimates - Mirror Stock<br>Estimates, 1982-94 ..... | <a href="#">43</a>    |
| 14. | Sub-Saharan African SILICs: Capital Flight Estimates - Hot Money<br>Method I, 1980-92 .....     | <a href="#">44</a>    |
| 15. | Sub-Saharan African SILICs: Capital Flight Estimates - Hot Money<br>Method II, 1990-93 .....    | <a href="#">45</a>    |
| 16. | Sub-Saharan African SILICs: Capital Flight Estimates - Hot Money<br>Method III, 1990-93 .....   | <a href="#">46</a>    |
| 17. | Sub-Saharan African SILICs: Capital Flight Estimates, 1980-91 .....                             | <a href="#">47-49</a> |
| 18. | Sub-Saharan African SILICs: Capital flight and Macroeconomic Aggregates .....                   | <a href="#">50</a>    |
| 19. | Sub-Saharan African SILICs: Data for the 9 Highest Debtors .....                                | <a href="#">51</a>    |
| 20. | Sub-Saharan African SILICs: Trade-Faking Adjustment, 1980-91 .....                              | <a href="#">52</a>    |
| 21. | Sub-Saharan African SILICs: Categories of Trade-Faking .....                                    | <a href="#">53</a>    |
| 22. | Sub-Saharan African SILICs: Adjusted Capital Flight Estimates,<br>1980-91 .....                 | <a href="#">54-55</a> |
| 23. | Kenya: Growth, Debt Overhang and Capital Flight<br>Regression Results, 1980-91 .....            | <a href="#">56</a>    |

## SUMMARY

Over the past 15 years, the external debt burden in many of the severely indebted low income countries in sub-Saharan Africa has worsened. As the severity of external indebtedness has increased in this region, so has capital flight. This paper analyzes the external debt and debt burdens of the severely indebted sub-Saharan African economies, estimates capital flight and shows the relationship of external debt and capital flight to growth in these economies. It presents the policy implications of capital flight and international efforts to deal with the high levels of external debt in conditions of extreme poverty and of stagnant or declining exports, such as exist in these countries. It then proposes a review of the theoretical foundation of the external debt strategy that has been followed in the past with respect to sub-Saharan Africa. This strategy is based on four assumptions: the external debt of debtor countries is a liquidity problem; given a buoyant international economy, debtors will grow out of debt through increased exports; there is no debt overhang; and the strategy applies a "one size fits all" approach to countries. The paper presents evidence that these assumptions are not well founded.

Another policy implication explored in this paper is that debt rescheduling may not go far enough and that creditor institutions could demonstrate their commitment to fostering growth in the severely indebted sub-Saharan African countries by moving toward debt forgiveness. Policies that benefit the whole of sub-Saharan Africa need to be designed, but with the flexibility to address country-specific problems and situations.

## I. INTRODUCTION

The African debt crisis, like its Latin American counterpart, started in the early 1980s and is not yet over! Debt was big news in the 1980s when the international financial system appeared threatened by the heavy indebtedness of a number of developing countries. More recently, the external debt of a group of 41 countries referred to as heavily-indebted poor countries (HIPC), 32 of which are classified as severely indebted has been receiving increased attention. Most of the severely indebted low income countries which have been having problems managing their debt service obligations are in sub-Saharan Africa.<sup>2</sup> As a matter of fact, over the last one and a half decades, the external debt burden in many of the countries in this group has worsened, and the problem, if anything, has become even more serious. Debt ratios indicate that the overall external debt has become so large relative to the economic size of these countries and relative to export earnings that it would be impossible to pay a significant part of it in the short run without the imposition of what amounts to an impossible burden on those nations (Hope, Sr., 1996).

In spite of significant adjustment effort in Africa, for many of these countries economic recovery is still some ways away. The external debt crisis has been exacerbated by the region's limited administrative and managerial capacity, which, to make matters worse, has been diverted by the "lingering effects of a crisis whose time to be relegated to history has long passed" (Mistry (1994), p. 12). Past efforts at finding solutions to external indebtedness have no doubt been imaginative and generous, but to the extent that the debt problem lingers or has worsened, these efforts can be adjudged as inadequate to finding solutions for core economic problems in Africa.

As the severity of external indebtedness has increased in sub-Saharan African severely-indebted low-income countries (SILICs), so has capital flight in some of these countries. Some in the international donor community has viewed this outward movement of capital as compounding the problem of external debt management and has suggested that meaningful discussion of the solutions to external debt will need to wait until the issues of capital flight are sorted out. Indeed, some researchers have posited that solutions to capital flight be made a precondition to discussions on debt relief (Eggerstedt, Hall and Wijnbergen (1994)). Thus, the linkages between external indebtedness, debt burden and capital flight, and how to deal with them need to be addressed with urgency. The magnitude of capital flight from developing countries indicates in most cases a serious breakdown in domestic policies. Cline (1995) claims that it is largely within the power of debtor countries to limit capital flight by adopting appropriate domestic policies on interest rates, the exchange rate, capital account

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<sup>2</sup>The 25 severely indebted low income countries in sub-Saharan Africa are: Burundi, Central African Republic, Cote d'Ivoire, Equatorial Guinea, Ethiopia, Ghana, Guinea, Guinea Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mozambique, Niger, Nigeria, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Zaire, Zambia.

convertibility and fiscal balances. Countries with a large debt overhang have run into debt servicing difficulties if the private sector is exporting capital (Charrette (1991)). Further, it is argued that the sources of financial flows for growth in the developing world lie in direct foreign investment and the reversal of capital flight (Husain (1991)). However, direct foreign investment in sub-Saharan Africa has been constrained owing to political instability and the unfavorable macroeconomic environment. Capital flight reversal (or capital reflows) have implications for macroeconomic stability because of their effects on the exchange rate and the monetary management policy of central banks, which to prevent exchange rate appreciation may have to over expend resources on sterilization.

The issue of capital flight is often seen in the context of profitable investment opportunities. Viewed this way, capital flight is an endogenous response to the perception of profitable investment opportunities in the source country, the recipient country, or both (Fernandez-Arias and Montiel (1995)). Just as capital flight can be viewed as evidence of excessive taxation, it can also be said that debt overhang can propel capital flight (Eggerstedt, et al. (1994)). While there is general anecdotal evidence of the magnitude and possible determinants of capital flight in sub-Saharan Africa, the variations across and between countries in these variables remain largely unaddressed.

The objective of this study is to present an overview of the economic performance of the severely indebted low income countries in sub-Saharan Africa (hereafter referred to as sub-Saharan African SILICs), analyze the issues connected with the burden of external indebtedness and estimate the magnitude of capital flight. By estimating the magnitudes of external debt and capital flight in the region, and analyzing the linkage between them, as well as the relationship between debt burden and capital flight to growth, we hope to shed some light on how to move forward by offering possible solutions for dealing with these issues.

The paper is organized in seven sections. Section II presents background information on recent economic performance in the sub-Saharan African SILICs. Finding solutions to the problems of external debt requires a realistic assessment of country-specific economic conditions. Section III examines the issues of magnitude of external debt, debt overhang, the indicators of debt burden, and the capacity to service debt. Section IV deals with issues specific to capital flight, such as why capital flight is considered bad for developing countries, especially in the sub-Saharan Africa SILICs. Different methodological approaches are used to measure capital flight in the severely indebted countries and the relative importance of capital flight to other macroeconomic variables is examined. Section V addresses the linkage between external debt and capital flight, in particular debt-driven and debt-fueled capital flight and flight-driven and flight-fueled external borrowing. Section VI looks at the relationship between real growth of the economy, debt overhang, and capital flight, and Section VII contains summary findings and policy implications.

## **II. AN OVERVIEW OF RECENT ECONOMIC PERFORMANCE**

In order to put the issues of external debt and capital flight in proper perspective, it is necessary to provide an overview of the recent economic performance in sub-Saharan Africa

SILICs. One of the objectives of the review is to examine, for, example the extent to which the growth in exports and output prospects are buoyant enough to end the debt servicing difficulties of this country group. As is well known, the economic performance of the sub-Saharan countries was very poor in the 1980s, there has been no significant upturn in recent times. Economic progress is still much too slow to have meaningful impact on poverty. In fact, the economic fortunes of a number of African countries have continued to change for the worse, and this is especially true of the sub-Saharan African SILICs. While there are areas of commonality in terms of poor performance, the degree (depth and breadth) of economic deterioration has varied across the countries in this group. In contrast to the monolithic characteristics usually attributed to Africa and other developing countries, these countries have problems that are unique to their individual circumstances. The statistics in Tables 1-5 give a clear indication of what is happening in the sub-Saharan African SILICs.

Tables 1 and 2 present gross domestic investment and savings, respectively, as a percentage of gross domestic product (GDP) for 21 sub-Saharan African SILICs. In 1993, gross investment stood at an average rate of about 19 percent, which was lower than the 1980 rate of 21 percent. Similarly, the savings/GDP ratio averaged only 5 percent in 1993 compared to the average of about 6 percent in 1980.<sup>3</sup> As expected, the performance of a number of countries is below the average for the group, and a few are above it. As the tables show, there are many countries with a negative savings/GDP ratio.

The export performance of our country group over the last one and a half decades has also been unimpressive (Table 3). In the 1980-85 period, exports of these countries grew at the negative rate of -1.19 percent, but from 1986-92 exports turned around and grew at about 4 percent, the latter period coincide with the period of structural adjustment the components of which include the adoption of appropriate exchange rate and trade liberalization. The poor performance of exports in sub-Saharan SILICs in general can be attributed to a host of factors including the maintenance of inappropriate exchange rates policy, high import protection and existence of trade barriers, in particular from the developed world. The poor export performance is significant because exports provide the foreign exchange earnings from which external debts are serviced and basic necessities, such as imports of basic equipment and raw materials, are purchased.

The terms of trade of the sub-Saharan African SILICs have not been favorable over the 1980-93 period. Table 4 presents the cost of terms of trade deterioration.<sup>4</sup> It is clear from the table, that many of these countries have suffered tremendously over the last several years. In

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<sup>3</sup> These averages are for 21 of the sub-Saharan African SILICs. In the case of the savings/GDP ratio and investment/GDP ratio, some of the countries are not included because the data were not available. These countries include Equatorial Guinea, Liberia, Sao Tome and Principe, and Ethiopia. In the case of Guinea, data were not available for some years.

<sup>4</sup> Following Dornbusch (1986), the cost of terms of trade deterioration is defined as the percentage change in the terms of trade multiplied by the import/income ratio. In the calculation here, the import/income ratio is the value of imports to GNP.



1993, for example, of the 20 countries listed, 14 experienced a significant deterioration in their terms of trade, some as high as 90 percent (Ethiopia) and 48 percent (Côte d'Ivoire).

Table 5 presents macroeconomic data for the periods 1977-86 and 1987-93 on average GNP/per capita growth, average CPI, average real GDP growth, and an index of economic performance. For the 24 countries listed, the average growth in GNP per capita in 1977-86 was only 1.75 percent. By 1987-93, the growth rate per capita had declined to -1.30 percent. Average real GDP growth, which was 1.94 percent in the 1977-86 period, rose to 3.71 percent during 1987-94. Following Cline's approach (1995), an index of economic performance is developed for the group sample.<sup>5</sup> This index looks very simple and yet it is important for the group of countries because inflation is the scourge in many sub-Saharan SILICs and must be taken into account in any meaningful measure of economic performance. The extent to which inflation is reduced is a measure of fiscal performance of the economy. The reduction of inflation, in turn, is a precondition for a recovery of investment and economic growth. The index, which is shown in the last two columns of the table, shows a steady decline between the two periods: from 0.53 percent in 1977-86 to -3.27 percent in 1987-93.

### III. THE EXTERNAL DEBT ISSUE

Using the World Bank's country classification, we will analyze the extent of external indebtedness of the sub-Saharan African countries.<sup>6</sup> Under the World Bank classification, in 1992, 23 countries were classified as severely indebted. In 1993 Guinea was added, and Côte d'Ivoire, whose classification changed from severely indebted middle income to severely indebted low income country, was also added raising the total for this group to 25 countries.

A close look at this country group reveals that in 1993 Nigeria topped the list of ten most heavily indebted with a total external debt of about US\$33 billion, Côte d'Ivoire was second with \$19 billion, and Sudan was third with \$17 billion.<sup>7</sup> The external debt for the 25 sub-Saharan SILICs countries, which was \$41.8 billion in 1980, rose steadily to \$136.5 billion by 1993, or an annual growth rate of about 17.4 percent (Table 6). In 1993, the external indebtedness of the sub-Saharan African SILICs was 68.1 percent of the total debt of sub-Saharan Africa, and 67.8 percent of the SILIC group as a whole.

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<sup>5</sup>The index of economic performance is defined as:  $IEP = g - \log b$ , where IEP is the index of economic performance;  $g$  is the average growth in per capita income and  $b$  is the average inflation, here defined as the growth rate in the consumer price index (CPI).

<sup>6</sup>The World Bank's standard definition of severe indebtedness, averaged over three years (1991-93) is used here. A country is considered severely indebted when either of two key variables is above the critical level: present value of debt service to GNP (80 percent); and present value of debt service to exports (220 percent). Low income economies are those with 1993 GNP per capita of \$695 or less.

<sup>7</sup>The other seven countries were Zaire, Tanzania, Kenya, Mozambique, Ethiopia, Madagascar, and Ghana--in that order.

The external debt situation of the sub-Saharan SILICs can be attributed to both external factors (stagnation in industrialized countries, high interest rates especially between 1975 and 1985, declining terms of trade, war or civil strife and drought in some countries) and internal factors often termed macroeconomic policy errors (including mismanagement, high budget deficits, wrong exchange rate policies and in many cases, corruption). The extent of the importance of the two categories of factors has not been empirically established for sub-Saharan African countries. Sub-Saharan African SILICs got into external debt problems because of three main factors. First, many of them borrowed in the 1970s and early 1980s when the interest rates were relatively very high. The fact that some countries even borrowed at floating interest rates compounded their external debt problem. The second major problem was the fall in commodity prices. In general, the terms of trade have been against developing countries, and in particular the sub-Saharan African SILICs. Lastly, we can point accusing fingers at the debtor countries' indiscretion in the utilization of funds. The funds that were borrowed were not put into investments that could yield adequate returns that could service the external debt. The foreign borrowing were not used to develop a resource base in tradable goods especially export industries which would be adequate for future debt servicing. On the contrary, there are anecdotal evidences that some of the borrowed funds were utilized in elephant type projects that yielded no returns that could pay back the indebtedness.

For the sub-Saharan African SILICs, the debt burden and the servicing capacity of external debt are shown primarily by five indicators: debt/exports ratio, debt/GNP ratio, debt service/exports ratio, interest/exports, and interest/GNP. Indeed, it is better to view the debt service/exports ratio as well as the debt service/GNP (or GDP) ratio as indices of solvency. The difference between the two is that debt service/GNP measures the total available resources an economy has at its disposal to deal with its external debt situation.

Table 7 utilizes these five indicators of external debt burden and shows that the debt/GNP, and the debt/export ratios for our 25 countries are very high.<sup>8</sup> These ratios are based on the face value of loans. The ratios have not taken into account the concessionality of external debt. The high debt/export ratio is of great concern because of its negative effects on investment and saving. In sub-Saharan Africa there are two channels through which the negative effects work (Hadjimichael, et al. (1995)). The first channel concerns the resources used to service debt, which crowd out public investment and discourage private investment because of the complementarity between public and private investment. The second channel is the debt overhang indicated by the high debt/export ratio, which leads to the anticipation by economic agents of future tax liabilities for its servicing (Borensztein (1990b), and Eaton (1987)). This second channel can be broadly interpreted as the one that has given rise to the debt overhang hypothesis, which posits that since an indebted country benefits partially from increased output, or exports (some of the proceeds are paid to creditors), there is a disincentive effect not to initiate programs that will lead to future growth. In such a case, debt payments are linked to economic performance.

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<sup>8</sup>It has been claimed by some analysts that with detailed data, the calculation of the net present value of external debt would be a better indicator of a country's debt burden than the face value of external debt.

A number of authors, including Krugman (1988 and 1989), and Sachs (1989), have argued that a high debt/export ratio is not indicative of debt overhang because the disincentive effect only arises when it becomes impossible for a debtor to meet its contractual obligations. A high debt service/export ratio that is serviced regularly does not lead to distortions of production or investment decisions. Even though arguments rage about the appropriateness of the use of the debt/export ratio as a measure of debt overhang, the ratio is nevertheless very important. It is obvious that a high debt/export ratio implies that funds are to be transferred abroad in the future thus raising the implicit cost of domestic capital.

Additionally, the ratio points to potential debt servicing difficulties (see Savvides (1992)). Many of the sub-Saharan African SILICs owe several times more than the value of their GNPs. In fact, as shown in Table 8, in 1993 the debt/export ratio of only three countries ranged between 100-400 percent, the other ratios ranged from 401-999 percent while nine countries exceeded 1,000 percent.

Another important aspect of a high debt/export ratio is that the high stock of foreign debt can be associated with lower investments in two important ways. First, it is clear from the ratio that a portion of the payment on foreign indebtedness reduces the funds available for investment in the domestic economy in the current period. Second, a nation loses the amount of money that, if it had been invested domestically, would have had a multiplier effect and been a catalyst for future investment. Another way of looking at the debt/export ratio is to view it as an inverse indicator of a country's solvency, which as pointed out above signals an increased likelihood of debt servicing problems. A number of African countries in the SILIC group have had to reschedule their debts, which is an accurate indication (or indicator) of debt servicing difficulties.

Since several of the countries we are dealing with have different GNPs, simple averages may not be an appropriate measure of their external debt burdens or debt servicing capacity as a country group. Other averages based on 1980 and 1986 GNP weights for interest/exports, debt/exports, and debt service ratio have therefore been utilized to give a clear picture of the impact of these burdens (Table 9). These two dates are significant: most sub-Saharan African SILICs adopted structural adjustment programs in 1986, thus the 1980 and 1986 data give a clearer picture of changes effected on debt burden by these programs.

It has often been argued that the face value of external debt is not a good measure of the external debt burden. A more satisfactory measure often used by the Fund and the Bank is the ratio of the present value of future debt service obligations to exports. It must, however, be noted that the present value analysis is very sensitive to the discount rate utilized in the present value calculations. The analyses on debt overhang have relied mainly on the face value of the debt burden indicators. Even then, using this measure shows that the African SILICs are not in a better position. The present value analysis are shown in Table 10.

The extent of stress that the countries in this group experience with respect to external debt servicing can be measured by the number of reschedulings that have taken place over the years, the discrepancy between the total debt service paid and the debt service due, and the proportion of the national budget that is devoted to servicing debt - the fiscal burden of

external debt. Over the years, a number of countries have continued to reschedule. The extent of the difficulty as measured by the ratio of total debt service paid to total debt service due is shown in Table 11. With the exception of Burundi, Ghana and Kenya and to some extent Rwanda, the remaining countries have been going through stress. The seriousness of the external debt burden can also be seen from the proportion of the national budget that is devoted to servicing it. This is shown in Table 12. In as many as 11 countries, the ratio of scheduled external debt service to government revenue exceeded a 100 percent (with over 600 percent in the case of Zaire). In another 7 countries the ratio was more than 50 percent. For most of the sub-Saharan African SILICs, it means that inadequate resources are left to attend to issues of national development after allowances have been made for debt servicing.

#### **IV. THE CAPITAL FLIGHT ISSUE**

This section reviews general issues associated with the phenomenon of capital flight and looks at the impact of capital flight on developing countries, the sub-Saharan African SILICs in particular. To appreciate the policy concerns involved with capital flight, we need to know the magnitude of capital flight from all of our sample group countries and relate these estimates to some macroeconomic aggregates such as external debt, exports, and the gross national product (GNP).

##### **A. What Is Capital Flight?**

The literature on the definition, causes, mechanisms, and so forth of capital flight is vast. No attempt is made in this paper to get into all the issues. Rather, attention is directed to the issues of methodology of measurement and the assessment of the magnitude of capital flight in the sub-Saharan African SILICs. It is appropriate to point out at the outset that capital flight is defined in different ways. Thus, the estimated magnitude of capital flight will vary in accordance with the definitions adopted.

The controversy surrounding the definition of capital flight is due partly to the lack of a precise and universally accepted definition of it in economic theory, and partly because of the way the term is used between developed and developing countries. Outflows from developed countries are called foreign investment while from developing countries the same activity is called capital flight. Investors from developed countries are seen as responding to investment opportunities while investors from developing countries are said to be escaping the high risks they perceive at home. This interpretation and distinction explains why many economists are "ill at ease" with the definition of capital flight. The variety of definitions that has been proposed is a reflection of the analysts' judgement on the dividing line between "normal" capital outflows and capital flight. While the distinction between normal capital flows and capital flight cannot be drawn finely, it is clear that capital flows are motivated by endeavors to maximize returns on capital for any given level of risk. Thus, capital flight can therefore be defined as the acquisition or retention of a claim on non-residents that is motivated by the owner's concern that the value of his asset would be subject to discrete losses or impairment if his claims continued to be held domestically (Deppler and Williamson, 1987). For many countries in sub-Saharan Africa,

capital flight is motivated by corruption, and political instability. When corrupt officials have access to foreign exchange through political offices and the prerequisites of office, there is the tendency to siphon some of the money abroad not primarily to earn interests but to a safe haven where the money cannot be easily detected, and outside the purview of domestic authorities. This motivation is very important to the extent that it actually alters and/or provides an additional definition of capital flight in most of the sub-Saharan SILICs.

There are a number of reasons why capital flows from developing countries can be labeled as capital flight. The first reason is the presumption in economics that the movement of capital should be from capital-surplus countries to capital-scarce countries. Following this rule of thumb, any capital flows from developing countries (where capital is scarce) to developed (capital surplus) countries is unusual, perverse, and abnormal. The second reason is from a policy perspective. As discussed above, external funds held abroad could be utilized at home to reduce the level of external indebtedness and relieve the inherent liquidity problems brought about by external debt service obligations.

### **B. Is Anything Wrong with Capital Flight?**

Why is capital flight considered a phenomenon that should be avoided? Perhaps a better way of posing the question is to ask what are the negative consequences of capital flight. There are many negative consequences, but in the context of external indebtedness three are of immediate concern to the African SILICs: a reduction of growth potential, an erosion of the tax base, and redistribution of income from the poor to the rich (Pastor (1990)). These three negative consequences of capital flight, discussed below, are undoubtedly strong and convincing arguments against the phenomenon.

#### **Reduction of growth potential**

First, any amount of money sent away to foreign lands cannot contribute to domestic investment. Thus, capital flight is a diversion of domestic savings away from domestic real investment. Kept away, these monies are also not available for importation of the equipment and materials that are necessary for the growth of domestic industry and the economy. Thus, capital flight leads to a net loss in the resources a country has available for purposes of investment (see also Deppler and Williamson (1987), p. 52, and Lessard and Williamson (1987), p. 224). For this condition to hold, as pointed out by Deppler and Williamson, nonresidents must be unwilling to indirectly finance the capital flight.

#### **Erosion of the tax base**

Income and wealth generated and held abroad are outside the purview of domestic authorities and therefore cannot be taxed. Thus, potential government revenue is reduced, constraining the debt servicing capacity of government debt (Ajayi (1992)).

## **Adverse redistributive consequences**

Income distribution is negatively affected by capital flows. The poor citizens in the African SILICs are subjected to austerity measures in order to pay for external debt obligations to international creditors, who in turn pay interest to citizens from these countries with assets abroad (Pastor (1990)).

Also, as a result of the shifting of private wealth beyond the government's tax jurisdiction, the tax burden is shifted from capital to less mobile factors - land and labor. Such a shift in the tax burden is likely to be regressive (Deppler and Williamson, 1987).

## **C. Measurement of Capital Flight**

To begin the analysis, we need to know the magnitude of capital flight from all of the sub-Saharan African SILICs and relate the estimates to some macroeconomic aggregates. The approaches used are discussed below.

### **Measuring capital flight in general**

There are many alternative ways of measuring capital flight.<sup>9</sup> From the various studies, five alternative measures of capital flight are discernible:

- (1) This estimate is based on the "mirror stock statistics" method, under which capital flight is measured as the change in cross border bank deposits of nonbanks by residence of depositor. This method has also been used by Khan and Ul Haque (1987). Using this approach, the statistics for the calculation of capital flight are available directly from the IMF's *International Financial Statistics* publication.
- (2) Narrow measure of capital flight, often referred to as the "hot money measures" is the sum of net short-term capital outflows plus errors and omissions in the balance of payments statistics. There are three variants of this measure, which are shown below (Cuddington (1986).
- (3) Residual measures used by the World Bank, Morgan Guaranty (1986), and Pastor (1989 and 1990) are often referred to as the "sources and uses" of funds approach, the broad measure or indirect approach to measuring capital flight.
- (4) Capital flight is measured taking due account of "trade-faking" activity (over- and underinvoicing of both exports and imports, or the traditional underinvoicing of exports and over-invoicing of imports). The trade-faking from both exports and imports are calculated and added together. The results are then added on to previously derived measures of capital flight to generate new sets of estimates.

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<sup>9</sup>See Morgan Guaranty (1985), Cumby and Levich (1987), Deppler and Williamson (1987), Khan and Ul Haque (1985), Ajayi (1992), and Claessens and Naude (1993).

(5) The fifth measure is one by Dooley (1986 and 1988) where capital flight is measured as that part of an increase in external claims that yields recorded investment income which is not reported to the domestic authorities. This concept is often used as a means of differentiating between normal and abnormal capital flight, or as a way of separating the illegal aspect of capital flight from the legal. Put differently, assets that do not generate reported income must in essence originate from circumventing existing controls and are therefore regarded as capital flight. The Dooley method is calculated by cumulating the identified capital flows in the balance of payments and making three adjustments to capture unreported capital flows. First, errors and omissions in the balance of payments are added. Second, the difference in the World Bank reported stock of external debt minus the cumulative recorded balance of payments liabilities is also added. The sum gives the total stock of external claims. Third, the stock of external assets, which is needed to give the investment income reported in the balance of payments, is calculated by utilizing an international interest rate. The difference between the total stock of external claims and the third adjustment made is the stock of capital flight while capital flight is measured as the difference from year-to-year. This approach has been utilized by Khan (1989), and Deppler and Williamson (1987).

It can be seen from the above that there are many definitions of capital flight. The complexity of definitions and differing methodological approaches naturally lead to the question of which is the most appropriate definition and measurement of capital flight. The answer lies within the context of the policy question being posed, as we shall argue later on. For the moment, it is worth noting that the most commonly used measures of capital flight are the various variants of the residual measure, or broad measure (used by the World Bank, Morgan Guaranty, and Cline--see method (3) above), measuring the stock of unreported foreign assets (Dooley 1986 and 1988 method--(5) above); hot money measures (Cuddington (1986))--method (2) above); and trade misinvoicing (Ajayi (1992), and Claessens and Naude (1993)--method (4) above).<sup>10</sup>

### **Measuring capital flight in the severely indebted sub-Saharan African countries**

Given the present economic conditions and varied economic performance of the sub-Saharan African SILICs, it is important to look at them as a group rather than lumping them together with other developing countries. To calculate capital flight for this country group, four of the five approaches listed above have been utilized and are presented below.

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<sup>10</sup>In recent times, the literature on the estimates of capital flight in sub-Saharan Africa has been growing. The known estimates of capital flight include those of Chang and Cumby (1991) for 36 sub-Saharan African countries covering the period 1976-87; Elbadawi (1992) for Sudan; and Anthony and Hallet (1990) for 12 developing countries, including 6 sub-Saharan African countries that are now severely indebted (Cote d'Ivoire, Ghana, Nigeria, Zaire, and Zambia). Other studies of capital flight in developing countries include that of Rojas-Suarez (1991), whose study covered Nigeria among the highly indebted countries; Ajayi (1990 and 1992) on Nigeria; Ng'eno (1994) on Kenya; and Olopoenia (1995) on Uganda. The area of commonality of these various studies is the estimation of the magnitude of capital flight from the various countries. The methodological approach, period coverage, and comprehensiveness of capital flight issues analyzed varied.

The first approach adopted is what has been referred to earlier as the mirror stock statistics method (approach (1) above). The total figures represent the amount of money owned by the citizens of a country in foreign banks. The yearly changes in this stock are referred to as capital flight. This amount would in general not be an accurate measure of capital flight for a variety of reasons and the published figures represent an underestimate of the total amount of flight capital from a country. First, substantial amounts are held in assets other than bank deposits. Second, bank deposits held outside the major financial centers, are not included. In some bank deposits, the identity (name and nationality) of the depositor are never made public.

In the second approach, we have the "hot money method" ((2) above), denoted as (HMi), which has three variants. The hot money method is defined as follows:

$$HM1 = -(g + c1) \quad (1)$$

$$HM2 = -(g + c) \quad (2)$$

$$HM3 = -(g + c + e1 + e2) \quad (3)$$

In the equations above, g refers to the net errors and omissions in the balance of payments statistics. This is line 112 in the IMF's 1994 *Balance of Payments Yearbook*. The e's refer to portfolio investments: e1, e2 refer to other bonds and corporate equities, respectively (lines 56-58, and lines 59-61, respectively). Other short-term capital of other sectors is c (lines 93-97, while c1 is other assets (line 94).

The third approach is the residual approach ((3) above). Basically, capital flight is treated as a residual of four components of the following balance of payments items: change in foreign debt, foreign direct investment, change in foreign reserves, and change in the current account. Thus, capital flight in this version (Pastor (1990), and Claessen and Naude (1994)) is defined as change in adjusted debt stock, plus foreign direct investment, plus current account, plus changes in reserves. The adjusted debt stock is defined as the debt minus currency valuation. The debts of different countries are denominated in different currencies. Cross currency exchange rate changes between the different currencies in which the debt is denominated will have an impact on the changes in debt expressed in U.S. dollars, hence the need to adjust the debt stock.

The fourth approach to capital flight estimates, which takes care of trade-faking adjustment, is given some prominence in the next section 4 below. The Dooley method (method (5)) has not been operationalized in this study.

Apart from the fact that this study concentrates on a group of African countries--the SILICs--there are other major differences in the analysis and calculation of capital flight estimates from methods employed by Claessens and Naude (1994) and Chang and Cumby (1991). These differences are:



- The period covered is different, concentrating on the post-1980 period when the debt crisis began, and the focus is solely on the sub-Saharan African SILICs.
- This study covers all forms of debt, including short-term and private non-guaranteed debt. In other words, the paper goes beyond the public and publicly-guaranteed debt. An earlier study by Chang and Cumby (1991) excluded private non-guaranteed external debt because the intention was to measure net private acquisition of foreign assets rather than gross acquisition. However, given the fact that private non-guaranteed debt is part of the external funds available for a possible reflow, we take the position in this study that there is no need to exclude it.
- Two versions of the indirect residual method are adopted. In the second version, capital flight is defined as changes in adjusted debt stock, plus foreign direct investment, plus current account, plus changes in total reserves, minus gold, plus changes in the foreign assets of banks. The way changes in reserves are defined here is similar to Pastor's (1990) approach. The reason for the adoption of the second variant--in particular the reserves definition--is that in many African countries, the foreign assets of banks are of great importance, especially where local bank branches in some countries are affiliates of a foreign bank head office.
- The estimates for each country are shown separately and not lumped together as total aggregates.
- All "trade-faking" estimates are calculated. The Chang and Cumby method analyzes misinvoicing with a min-max statistical concept that makes judgment difficult on the extent to which trade-faking is utilized to effect capital flight.

Before deciding which measure of capital flight is appropriate, we present the results of our calculations.

Calculations using mirror stock statistics are presented in Tables 13. In the period 1982-91, the total cumulative capital flight using this measure stood at \$21.8 billion. From 1982-94, total cumulative capital flight was \$19.1 billion; the drop is primarily accounted for by reflows from Kenya, Liberia, and Nigeria. In 1991, the cumulative total by this measure was about 16 percent of the entire external debt of the sub-Saharan African SILICs. The greatest amount of capital flight came from Liberia with shares of about 49 percent and 46 percent in the cumulative totals in the periods 1982-91 and 1982-94, respectively. Nigeria, Kenya, Côte d'Ivoire, and Zaire were pushed to second, third, fourth, and fifth positions, respectively.

The three variants of the hot money method which are shown in Tables 14-16 in general tend to show the smallest estimates of capital flight. We were able to obtain consistent data series for 21 countries. Using the first variant (HM1), the countries with the largest capital flight were Nigeria (\$1.4 billion), Zambia (\$1.1 billion), Ethiopia (\$0.9 billion) and Côte d'Ivoire (\$0.4 billion). In a number of countries, notably Côte d'Ivoire (1991-93), Ghana (primarily 1988-91), Kenya (since 1987), Uganda (since about 1986) capital flight reversal occurred. The capital flight reversal in most cases is due primarily to the policies pursued and the episodic events in the economy. In the case of Uganda for example, the reversal of capital

flight is related to episodic events related to first the movement of the Asians and the improvement in the economy as a result of adjustment policies. In the second variant (HM2), Nigeria had the largest capital flight followed by Ethiopia and Côte d'Ivoire. The pattern of capital flight in the third variant (HM3) is not dissimilar to the findings of the first and second variant with Nigeria topping the list followed by Ethiopia and Côte d'Ivoire in that order.

The residual method, as mentioned earlier, has two versions. Because the data for most of the sample countries do not extend beyond 1991, and in a few cases stop a little earlier, to make the data comparable across countries we decided to stop in 1991, using 1980-91 as the calculation period. Table 17 presents the results of the calculation. The first variant (KF1), shows significant capital flight for Côte d'Ivoire, Ethiopia, Nigeria, and Sudan, with the largest amount of capital flight coming from Nigeria. For some of the countries, there are evidences of capital flight reversal. Using the first variant, the countries in this category include the Central African Republic (1989-90), Côte d'Ivoire in 1981-82 and 1989; Ghana, Mozambique mostly in 1989-91, Uganda in 1988-89, Zambia in 1981, 1983, 1985, 1989 and 1990 and Zaire in about six years of the period covered.

In order to show its pervasiveness, capital flight is related to some macroeconomic data: GNP, External debts and exports (Table 18). For comparative purposes, there are 18 countries for which data is available.<sup>11</sup> Over the period 1980-91, the most appropriate concept is the stock of capital flight. At the end of 1991, while the average capital flight/debt ratio was over 40 percent for the 18 countries, the average capital flight/debt ratio was over 60 percent for 4 of the 18 countries measured, including Kenya, Nigeria, Rwanda and Sudan. For the nine highest debtors in the group, Nigeria was at the top of the list with an average capital flight/debt ratio of 94.5 percent, followed by Rwanda (94.3 percent), Kenya (74.4 percent), and Sudan (60.5 percent). The other debtors in the group have a low capital flight/debt ratio. The average capital flight/GNP ratio in 1991 was extremely high for both Sudan and Nigeria--133 percent and 102 percent, respectively. Three other countries, Kenya, Zambia, and Sierra Leone had average capital flight/GNP ratios of 70 percent, 58 percent, and 56 percent, respectively. The average capital flight/cumulative changes in debt show that Nigeria was first on the list with a ratio of 105.0 percent, followed by Sudan (75.2 percent), Uganda (58.9 percent), and Burundi (54.5 percent). The ratios of other countries in 1991 were less than 50.0 percent. Table 19 highlights the macroeconomic data for the 9 highest debtors in the group.

In coming to terms with which approach is the most appropriate concept of capital flight, the choice has to be based on the merits of each calculation method with respect to the policy question being addressed. For the reasons mentioned earlier, the coverage of the mirror stock statistics method can at best be an underestimate of the magnitude of capital flight. The hot money method on the other hand is by definition too narrow in coverage to be of use for the sub-Saharan African SILICs. It concentrates on the short term capital flows and errors and omissions and ignores other capital flows which are as important as the short term capital

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<sup>11</sup> Liberia, Sao Tome Principe, Somalia, Tanzania and Zaire are left out of the calculation because of the incompleteness of data.

flows. The broad measure (residual method), on the other hand, estimates the totality of funds that are available for capital flight reversal. Additionally, the estimates have been derived from the most important economic aggregates of the African SILICs: the uses and sources of funds. Subject to the accuracy of the sources of data from which these estimates are derived, this concept is the most appropriate in the circumstances.

#### **D. Adjusting for International "Trade-faking"**

A further step in the calculation of other capital flight estimates is to allow for international "trade-faking"--the misinvoicing of both exports and imports, referred to as international trade-faking.<sup>12</sup> It is generally known that one of the mechanisms of effecting capital flight is through trade misinvoicing, referred to as international trade-faking in this paper. Since the imports of any one country are the exports of another country, it is expected that the ratio of the values of imports of country A, which originate in country B, over the value of exports from country B to country A--called the valuation ratio--should be unity.

There are a variety of reasons apart from trade-faking why the value of trade statistics (exports and imports) may not match. These include diversion en route to the final destination, re-exports of goods, differential lags in reporting, potential discrepancies arising from the conversion from one currency to another and then to a common currency (usually the U.S. dollar), and variations in exchange rates (De Wulf (1981) and Yeats (1990)). In sub-Saharan Africa, one of the basic causes of trade discrepancy is due to the routing process for trade transactions. This problem occurs when goods are routed through several countries bordering the exporting and/or importing country before the final destination is reached. In these cases, "the country of origin may inaccurately list a routing country as the importer, or the country of final destination may report the routing country as the exporter. A range of discrepancies may thus appear between the three (or more) parties for the transactions" (Yeats (1990), p. 137).

In general, countries that maintain overvalued currencies, and restrict access to foreign currencies are often the setting for international trade-faking. In African countries, however, the issues involved are more than the existence of parallel markets in foreign exchange. The type of trade regimes in existence are also of great importance. Thus, in addition to the existence of parallel markets, the incentive to get involved in international trade-faking depends on the structure of tariffs and subsidies.<sup>13</sup> Given such situations, there may not only be the underinvoicing of exports and overinvoicing of imports but other combinations as well.

The usual method of calculating trade-faking is through partner country comparisons. Using this analysis for the African SILICs, trade-faking or calculated misinvoicing adjustment is

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<sup>12</sup> This section has benefitted from the author's earlier work: *An Economic Analysis of Capital Flight from Nigeria*, World Bank, Policy Research Working Papers, WPS 993, Western Africa Department, October 1992.

<sup>13</sup> For details, see Ajayi (1992), pp. 42-46.

shown in Table 20. The trade partner is referred to here as the world. Let there be a country  $C_i$  with the trading partner called world. Trade-faking is calculated as follows:

$$X_{mis} = X_{ctry} - M_{world}/ax \quad (4)$$

$$M_{mis} = M_{ctry}/ax - X_{world} \quad (5)$$

where  $X_{mis}$  and  $M_{mis}$  stand for export- and import-faking (misinvoicing), respectively. The term  $X_{ctry}$  is exports as reported by the country  $C_i$ ;  $M_{world}$  is the imports from country  $C_i$  as reported by the world;  $M_{ctry}$  is the imports reported by country  $C_i$ , and  $X_{world}$  is the exports sent to country  $C_i$  as reported by the world (that is, the world's imports from that country); and  $ax$  is the cif/fob correction factor.

The percentage misinvoicing for both exports and imports are calculated as follows:

$$X_{mis}(\%) = X_{ctry}'/X_{world}' * ax \quad (6)$$

$$M_{mis}(\%) = (M_{ctry}'/M_{world}')/ ax \quad (7)$$

where  $X_{ctry}'$  is the exports as reported by the country,  $X_{world}'$  is the world reported imports for country  $C_i$ ;  $M_{ctry}'$  is the country  $C_i$ 's reported imports, and  $M_{world}'$  is the exports of country  $C_i$  as reported by the world.

Four categories of international trade-faking are discovered in this paper. These are (1) underinvoicing of exports and overinvoicing of imports; (2) overinvoicing of both exports and imports; (3) underinvoicing of both exports and imports; and (4) overinvoicing of exports and underinvoicing of imports. The countries in these respective categories are shown in Table 21. Given these categories, there are situations where high import underinvoicing and low export underinvoicing (or indeed a case of overinvoicing of exports) coincide to result in a substantial capital inflow, which in turn reduces the estimated capital flight. There will be a positive sign, that is, capital flight occurs when there is overinvoicing of imports or underinvoicing of exports. There is reverse capital flight when overinvoicing of exports and underinvoicing of imports occur. Since international trade-faking is expected to add to capital flight, the sum of import and export trade-faking are added together to get the net effect on capital flight estimates. The adjusted capital flight estimates are shown in Table 22. The table is derived by adding the net effects of trade-faking to previous estimates. In some cases, there are negative effects from trade-faking in some countries. This finding is consistent with Gulati's ((1987), p. 75) results in the case of Latin America where he concludes that "allowing for trade misinvoicing moderates the capital flight estimates." In a number of countries, however, trade-faking has been discovered as a means of effecting capital flight.

## **V. LINKAGES BETWEEN EXTERNAL DEBT AND CAPITAL FLIGHT**

Given the importance attached to capital flight and the external debt in the sub-Saharan African SILICs, it is important to discuss the link between them. This section is devoted to that theme.

### **A. Incidence of External Debt and Capital Flight**

In a perfect world of capital mobility, capital flows would normally respond to economic incentives dictated mainly by rates of return and risk. It would then be expected that favorable conditions would attract both foreign and domestic investments while unfavorable conditions would not only repel foreign investments but would at the same time trigger resident capital outflows. Normally one would expect capital flows to areas of capital scarcity and at the same time expect capital flight to be lowest in years in which foreign lending was greatest. It is also possible, however, that capital flows from developing to developed countries can be high in years of greater foreign borrowing.

Some economists have argued that there is no causal relationship between external debt and capital flight, while others have detected a relationship. The Morgan Guaranty Trust Company (1986, p. 15) declares that the simultaneous occurrence of debt accumulation and capital flight in the third world countries "was no coincidence," since "the policies and track records that engendered capital flight also generated demands for foreign credit." In the case of the Philippines, the relationship between external debt and capital flight is likened to that of a revolving door. A substantial amount of foreign borrowing appeared to have been shown to be positively correlated (see Boyce (1990)).

The relationship between external debt and capital flight can be addressed from two perspectives. The first is in terms of the macroeconomic relationship between external debt and capital flight while the second is strictly in terms of causality. From the first perspective, some of the arguments have been put forth in section IV.2 above. The basic elementary argument is that when capital flees a country that amount of money is potentially for investment in productive domestic activity. This would have earned foreign exchange if such investments were made in the tradable sector of the economy. One generally popular argument calls for a return of the funds held abroad or a significant reduction in or total elimination of capital flight. Accordingly, the heavily indebted countries would be in a better position because the funds so returned can be used to boost domestic investment and thereby enhance debt servicing capacity. Also, it is often argued that a heavily indebted country that manages to restrict capital flight would be in a better position to adjust to any subsequent fall in the sources of external funding.

From the second perspective and what is in the literature, there are two kinds of linkages between external debt and capital flight (Boyce (1990)). The first linkage runs from external debt to capital flight, while the second runs from capital flight to external debt. Each of the two groups can be subdivided into two. Thus, the direct linkage can be divided into four major groups on the basis of whether the direction of causality runs from debt to capital flight

or vice versa, or whether one simply provides the motive for the other, or whether it provides the means as well. In essence there are four types of linkages.

### **Debt-driven capital flight**

If as a consequence of external borrowing residents of a country are motivated to move their assets to foreign countries, we have debt-driven capital flight. Capital flees or leaves a country in response to attendant economic circumstances directly attributable to the external debt. The attendant economic circumstances leading to debt-driven capital flight are expectation of exchange rate devaluation, fiscal crisis, possibility of a crowding out of domestic capital and avoidance of taxes, and expropriation risk. These issues can be explained further. As a result of external borrowing, domestic asset holders may expect exceptionally onerous taxes in the wake of a possible debt crisis. Taxes as used here (Dooley (1987), p. 79) mean the wide range of regulations that reduce the value of domestic financial assets. It is the desire to avoid such taxes in the future that provides the "motivational link between debt inflows and capital flight (Boyce (1990), p. 65). "External funds may also preempt favorable investment opportunities or drive down the domestic rate of return, 'crowding out' domestic capital and pushing it overseas" (Boyce (1990), p. 65).

### **Debt-fueled capital flight**

In this case, the inflow of capital provides both the motive and the resources for capital flight. Borrowed funds are transferred abroad. There are two processes through which money can be transferred. First, government can borrow money and this is sold to domestic residents who transfer these monies abroad through legal or illegal means. In this case, government is the provider of foreign exchange. Second, government on-lends funds to private borrowers through a national bank. The borrowers in turn transfer part or all of their capital abroad. In this case, the external borrowing provides the necessary fuel (the resources) for capital flight.

We can now turn to causation in the other direction. There is, on the one hand, a case that is purely motivational, while on the other hand, there is the case where capital flight provides the resources that re-enter the country. This is referred to as "flight-driven external borrowing" and "flight-fueled external borrowing," respectively, discussed below.

### **Flight-driven external borrowing**

This situation develops when as a result of capital that has left the country, there is a gap that needs to be filled in the domestic economy. Consequently, there is demand for the replacement of the lost resources by both the government and the private sector. This is met by external creditors in the form of further loans. The reasons why external creditors are willing to meet this demand can be attributed to the different risks and returns facing resident and nonresident capital. Thus, as aptly described by Lessard and Williamson ((1987), pp. 215-218), the "systemic differences in the risk-adjusted financial returns to domestic and external capital could also arise from disparities in taxation, interest rate ceilings, and risk-pooling capabilities."

### **Flight-fueled external borrowing**

In this situation, a domestic currency leaves the country but re-enters in the guise of a foreign currency. What happens is that the "flight capitalist seeks to arbitrage the yield and risk differentials between resident and external capital, by engaging in a series of transactions sometimes known as 'round tripping' or 'back-to-back loans.' Resident capital is dollarized and deposited in an overseas bank, and the depositor then takes a 'loan' from the same bank (for which the deposit may serve as collateral" (Boyce (1990), pp. 68-69).

### **B. Evidence in Support of Linkage**

In trying to find empirical content for the external debt and capital flight linkage, one would specify equations that relate disbursement to the various capital flight measures and see the extent to which there was a positive relationship and/or use graphs to depict the relationship. We have done this for ten countries using panel data, including heavily-indebted countries but the evidence did not show linkage running in any of the directions discussed above.<sup>14</sup> The coefficients of the capital flight were in all cases negative and significant in the opposite direction; these results are not included in the text. Ideally, for a number of African countries, the individual circumstances differ and it would be interesting to see what these are. We tried to look at the countries with the highest external debt in the sample group (Côte d'Ivoire, Kenya, Nigeria, Sudan, and Zaire) and relate capital flight to external debt, and disbursement of funds. No attempt was made to find relationship between different composition of external debt. The results show clearly the lack of any of the relationships discussed earlier.

## **VI. GROWTH, DEBT OVERHANG, AND CAPITAL FLIGHT**

We have discussed at length the fact that capital flight may affect investment and hence growth of the economy. There should be a way of linking up the issues of external debt and capital flight to growth. Three ways of doing this present themselves. The first is to examine the influence of capital flight on private investment. The second is to examine the influence of capital flight and other variables on gross domestic investment. The third is to try to explain the role of capital flight and external debt on the growth of a country. Given the individual country approach of this study, we have tried to explain the linkage in the context of a particular country, Kenya, which is not the most indebted but about sixth in the group of most heavily indebted, but whose other ratios--capital flight/exports and capital flight/GNP--are significant enough to merit a closer look. Incorporating the model of Hadjimichael (1995) and Savvides (1992), but departing from them in some ways, we have specified a simple model that links the growth in real GNP to a number of variables discussed below. The basic premise is that there is debt overhang in the country of interest and that capital flight (KFFi's) also has negative effects on the real growth of the economy (RGGNP), as previously discussed. We have incorporated into our model two other significant variables. These are

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<sup>14</sup> Panel data estimates were made for Cote d'Ivoire, Ethiopia, Ghana, Kenya, Nigeria, Rwanda, Sierra Leone, Sudan, Tanzania, and Zambia.

the debt/export ratio (DEBEX), and the debt service ratio (TDSEX). If there is a debt overhang, we would expect the debt/export ratio to be negative. Similarly, if the service ratio is negative, it also implies that there is a crowding out effect. For correct specification, the two must be included in the equation.<sup>15</sup> Instead of the growth equation used by Hadjimichael (1995), which is per capita growth, we use real growth of GNP as our dependent variable. The model is as follows:

$$\text{RRGNP} = F(\text{GDI}, \text{CINF}, \text{PREER}, \text{TOT}, \text{DEBEX}, \text{TDSEX}, \text{FDSY KFi}) \quad (8)$$

+   -   -   +   +   ?   -   -

where, RRGNP is real growth of GNP, CINF is change in inflation defined as the change in the consumer price index as listed, PREER is the percentage change in the real effective exchange rate, TOT is the percentage change in the terms of trade, FDSY is the fiscal deficit as a percentage of GNP, and KFi is the measure of capital flight. DEBEX and TDSEX are as defined above. The expected signs are as listed under the variables. The variable TDSEX can be positive or negative. A negative sign would mean that there is a crowding out effect. The results of the regression equation for Kenya for the period 1981-91 are shown in Table 23. The results confirm that capital flight is important for real GDP growth. The capital flight coefficient has the correct sign though it is not statistically significant. When the regression equation is run without the FDSY variable, there is evidence of debt overhang in Kenya. The GDI, PREER, TOT variables have the right signs and are significant. While these results are significant for a country that can be considered to be in the middle of the highest African debtors, further work is necessary for the rest of the sub-Saharan African SILICs.

## VII. SUMMARY OF FINDINGS AND CONCLUSION

Some of the highlights of the findings in this study and their policy implications for the sub-Saharan African SILICs are presented below.

- (1) The diversity of African countries is reflected in their economic performance. Judged by such economic indicators as savings and investment as percentage of the gross domestic product, terms of trade, export growth, inflation, growth in gross domestic product, etc., economic performance in the sub-Saharan Africa SILICs has been very poor.
- (2) The external debt of sub-Saharan African SILICs in particular has been rising since the 1980s. In 1993, it stood at about 68 percent of the entire external debt of sub-Saharan Africa. The sub-Saharan African SILICs differ widely in their indebtedness. The differences in their positions are shown by the external debt indicators.
- (3) The high ratios of external debt indicators are of great concern because of their importance to economic performance -investment and growth and so on. Indeed, the high

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<sup>15</sup>The need to include (DEBEX) and (TDSEX) was suggested as an appropriate approach to test these effects by a staff member in the Research Department. Any errors are of course mine.



debt/export ratio (greater than 1,000 percent in some cases) is indicative of potential debt service difficulties. These ratios are inverse indicators of a country's solvency: the higher the ratio, the lower the country's solvency. Using either the face values of the indicators of debt or their net present value, the burden of external debt for sub-Saharan SILICs is extremely high.

(4) The stress that the sub-Saharan SILICs experience is shown by the frequent rescheduling of debt, the discrepancy between the amount of debt service due and the amount paid, and the debt service as a ratio of government revenue. For most countries in this group, debt service consume a greater proportion of government revenue leaving little resources to attend to other developmental issues. This raises the issue of the sustainability of the external debt of the countries in this group. There is evidence that many of the sub-Saharan SILICs' external debt are not sustainable in the medium term, the pursuit of adjustment policies in some of the countries notwithstanding.

(5) There is no generally accepted definition of capital flight hence the use of several concepts in this paper. The paper has provided, in essence, the "bands" or "range" of capital flight in sub-Saharan African SILICs. The cumulative amount of capital flight is significant in Nigeria, Sudan, Côte d'Ivoire and Ethiopia. It is also in these countries that we have the three mostly indebted. Thus, there is the twin problems of heavy external indebtedness and capital flight particularly in Nigeria, Côte d'Ivoire, Sudan and Ethiopia. The ratio of capital flight to other macroeconomic variables is significant for most of the countries in this group.

(6) Trade-faking (over- and underinvoicing of both exports and imports, instead of the traditional underinvoicing of exports and over- invoicing of imports) in the severely indebted sub-Saharan African countries is found to be significant.

(7) No evidence of flight-driven external borrowing, or of debt-driven capital flight was found. This is important. Even though there is capital flight in some countries, external borrowing has not been taking place on the basis of capital flight.

(8) There is a relationship between real growth of the economy, capital flight, and debt overhang. Using data for Kenya, we find that capital flight has a negative (but statistically insignificant) effect on real growth of the GNP. There is evidence of debt overhang in Kenya.

(9) There has been a reversal of capital flight in a number of countries especially Côte d'Ivoire, Central African Republic, Sierra Leone, Uganda, Ghana and Kenya in the late 1980s and early 1990s. The reversal of capital flight in the severely indebted low-income sub-Saharan African countries is dependent on a number of factors including political stability and a favorable macroeconomic environment--especially growth. In a number of sub-Saharan SILICs, part of the conducive macroeconomic environment to stem the tide of capital flight consists of better governance as shown in transparency in government and the absence of corruption. However, one must not lose sight of the policy implications of large capital inflows, as the experiences of Latin American countries have shown. Thus, to be ready for capital reflow, monetary and fiscal policies have to be right for existing conditions.

This study has some implications with respect to international efforts to deal with the high levels of external debt in sub-Saharan Africa in conditions of extreme poverty, and stagnant or declining exports. Finding solution to external debt burden is very important to growth in sub-saharan SILICs. In this direction, a review of the theoretical foundations of the external debt strategy applied to sub-Saharan Africa is needed. The debt strategy that has been adopted so far rests on four main assumptions. The first assumption was that the external debt of debtor countries was a liquidity problem. In the case of sub-Saharan African SILICs, it is now clear that the problem is one of solvency, not liquidity. The realization in recent times that the sub-Saharan Africa's debt difficulties are not simply a liquidity problem is reflected in such actions as concessional stock-of-debt rescheduling by official creditors, switch from concessional lending to grants by bilateral donors, and the IDA debt reduction facility and so on.

Under the second assumption, it was thought that given a buoyant international economy debtors would grow out of external debt through increased exports. The models upon which these scenarios were based have proved to be too optimistic, and the projections have turned out to be inaccurate for sub-Saharan African SILICs. As a result of the optimistic projections, some countries resorted to further borrowing to meet the revenue shortfall, and thus further complicated their external debt situation. For these countries, the international economy has not been buoyant in a meaningful way and exports have not grown as expected. Of course, the disappointing growth of exports has been the resultant effect of the pursuit of inappropriate policies by most of these countries. The severely indebted sub-Saharan African countries have certainly not grown out of debt.

The third assumption of the debt strategy has two strands. The first held for some time that there was no debt overhang. However, empirical evidence has continued to show a debt overhang in these countries.<sup>16</sup> The second strand recognize the African debt overhang but doubted whether removing the debt overhang would be sufficient to ensure high quality economic growth. Lastly, there has been no attempt to take care of the different circumstances of the different countries. It has been a strategy of "one size fits all". Even though the mechanism of putting several individual case situation in place is not simple, it is nevertheless necessary since individual needs and situations differ and no global situation to the debt crisis will work for everyone involved. Indeed the composition of the external debt of the sub-Saharan countries differ widely.

Another policy implication concerns the proposition of rescheduling external debt as the way out. In a real sense, all rescheduling does is to defer and exacerbate the problem. Given the effects of external debt on the macroeconomic performance of our country group, there is need to seriously look at debt relief for the following reasons. First, it will go a long way to reduce the high degree of uncertainties for both foreign and domestic investors. Second, many of the policymakers will be released from protracted and uncertain debt negotiations. Third, if as a result of the new resources, there is growth in the affected countries, the

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<sup>16</sup>See Savvides (1992), and IMF *World Economic Outlook* (April 1989) for further evidence on debt overhang. The Savvides study has the advantage that it covers a significant number of countries in our sample group.

spillover effect will be advantageous to the developed world in trade. Debt relief has many ramifications but what is intended here is to draw attention to the need to examine critically the issue of debt forgiveness for some of the more indebted and impoverished sub-Saharan African countries. The solution for debt reduction cannot rely strictly on the economics of moral hazard, disincentive effects, or with fault finding. Account needs to be taken of the differences in the composition of external debt in sub-Saharan Africa and in Latin America.

Discussions at international fora have lamented the woeful macroeconomic performance of poor developing countries in general, but especially of the severely indebted low income sub-Saharan African countries as shown in this paper. To match action with words and demonstrate that there is a real commitment on the part of creditor institutions to foster growth in these countries--including the severely indebted sub-Saharan African country group--a move toward debt forgiveness would be in the right direction. Of course it is necessary to have a change in policy stance in many of these countries. Policies that benefit the whole of sub-Saharan Africa need to be designed but given the differences between countries, these should also have the flexibility to address country-specific problems and situations. The World Bank and the IMF through the HIPC Initiative have an important leadership role to play in this regard.

Turning to capital flight, it is necessary to devise policies that would prevent further capital flight and generate capital flight reversal. A tall order of economic conditions such as getting the fundamentals right (appropriate exchange rate, fiscal discipline etc) and a stable and conducive macroeconomic environment are necessary ingredients to achieve this. In countries where capital flight reversal has taken place, there is evidence of stabilization and structural reform in the late 1980s and 1990s. Capital flight issues in some of the sub-Saharan SILICs is however more than economic fundamentals alone. As explained by Ajayi (1995) capital flight is related to being in "power" and having access to domestic and foreign money and it is an issue that goes beyond the straight-jacket economics that is often used to explain its magnitude. Thus, the issue of the existence of and how to deal with corruption is certainly more difficult to prescribe (Ajayi, 1992). Nevertheless, it is part of the general problems of capital flight. The solution lies in attitudinal changes culminating in better governance as shown in accountability and transparency.

Table 1. Sub-Saharan African SILICs: Gross Domestic Investment, 1989-93  
(In percent of GDP)

|                          | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Burundi                  | 14   | 17   | 15   | 23   | 18   | 14   | 12   | 23   | 15   | 17   | 17   | 17   | 20   | 18   |
| Central African Republic | 7    | 9    | 7    | 12   | 12   | 15   | 12   | 13   | 11   | 16   | 10   | 12   | 12   | 9    |
| Côte d'Ivoire            | 27   | 26   | 23   | 18   | 11   | 13   | 11   | 12   | 14   | 8    | 9    | 10   | 11   | 9    |
| Equatorial Guinea        | NA   | NA   | NA   | NA   | NA   | 6    | 13   | 21   | 19   | 20   | 27   | 43   | 24   | 25   |
| Ghana                    | 6    | 5    | 3    | 4    | 7    | 10   | 10   | 13   | 11   | 13   | 15   | 17   | 13   | 15   |
| Guinea                   | NA   | NA   | NA   | NA   | NA   | NA   | 15   | 16   | 17   | 17   | 18   | 17   | 17   | 16   |
| Guinea-Bissau            | 30   | 26   | 28   | 23   | 37   | 40   | 22   | 33   | 34   | 34   | 25   | 27   | 30   | 26   |
| Kenya                    | 29   | 28   | 22   | 21   | 21   | 26   | 22   | 24   | 25   | 25   | 24   | 21   | 18   | 16   |
| Madagascar               | 15   | 12   | 9    | 8    | 9    | 9    | 9    | 10   | 13   | 13   | 17   | 8    | 11   | 12   |
| Mali                     | 17   | 18   | 18   | 15   | 15   | 20   | 23   | 20   | 21   | 21   | 22   | 23   | 22   | 22   |
| Mauritania               | 36   | 42   | 47   | 18   | 25   | 29   | 31   | 29   | 28   | 19   | 20   | 18   | 23   | 24   |
| Mozambique               | 23   | 23   | 23   | 12   | 14   | 9    | 19   | 26   | 35   | 35   | 38   | 39   | 38   | 42   |
| Niger                    | 37   | 20   | 18   | 13   | 3    | 15   | 13   | 11   | 20   | 12   | 8    | 9    | 5    | 6    |
| Nigeria                  | 22   | 23   | 20   | 15   | 10   | 9    | 15   | 14   | 14   | 14   | 15   | 16   | 17   | 15   |
| Rwanda                   | 16   | 13   | 18   | 14   | 16   | 17   | 16   | 16   | 15   | 13   | 12   | 11   | 14   | 15   |
| Sierra Leone             | 16   | 19   | 13   | 14   | 13   | 10   | 11   | 10   | 8    | 14   | 14   | 12   | 12   | 9    |
| Somalia                  | 42   | 28   | 29   | 22   | 24   | 30   | 25   | 33   | 24   | 30   | 16   | NA   | NA   | NA   |
| Sudan                    | 15   | 14   | 23   | 16   | 14   | 5    | 13   | 15   | 15   | 14   | 14   | 13   | NA   | NA   |
| Tanzania                 | 23   | 25   | 21   | 14   | 15   | 18   | 25   | 50   | 13   | 45   | 43   | 48   | 49   | 51   |
| Uganda                   | 6    | 5    | 9    | 7    | 7    | 8    | 8    | 9    | 10   | 10   | 12   | 15   | 16   | 15   |
| Zambia                   | 23   | 19   | 17   | 14   | 15   | 15   | 24   | 14   | 11   | 11   | 17   | 15   | 14   | 15   |

Source: World Bank, World Tables, 1995.

Table 2. Sub-Saharan African SILICs: Gross Domestic Savings, 1980-93  
(In percent of GDP)

|                          | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Burundi                  | (1)  | 4    | (2)  | 7    | 6    | 5    | 4    | 7    | 2    | 3    | (3)  | (2)  | (1)  | (3)  |
| Central African Republic | (10) | (2)  | (7)  | (1)  | 0    | 0    | (2)  | (2)  | (2)  | 6    | (6)  | 1    | 3    | 2    |
| Côte d'Ivoire            | 20   | 19   | 20   | 20   | 22   | 26   | 23   | 16   | 16   | 13   | 15   | 14   | 16   | 16   |
| Equatorial Guinea        | NA   | NA   | NA   | NA   | NA   | (3)  | (9)  | (17) | (23) | (12) | (11) | (15) | 3    | 8    |
| Ghana                    | 5    | 4    | 4    | 3    | 7    | 8    | 8    | 7    | 5    | 6    | 6    | 8    | 2    | (1)  |
| Guinea                   | NA   | NA   | NA   | NA   | NA   | NA   | 18   | 17   | 12   | 18   | 17   | 14   | 10   | 9    |
| Guinea-Bissau            | (6)  | 1    | (5)  | (4)  | 1    | 1    | (1)  | 1    | (11) | (12) | (7)  | (6)  | (18) | 0    |
| Kenya                    | 18   | 20   | 18   | 20   | 19   | 25   | 22   | 19   | 20   | 17   | 19   | 20   | 18   | 21   |
| Madagascar               | (1)  | 0    | (1)  | 1    | 4    | 1    | 6    | 5    | 7    | 9    | 6    | 1    | 4    | 2    |
| Mali                     | (2)  | 0    | 1    | (5)  | (3)  | (14) | (1)  | 4    | 3    | 5    | 6    | 7    | 5    | 7    |
| Mauritania               | 7    | 13   | 3    | (12) | (2)  | 9    | 8    | 12   | 16   | 13   | 6    | 10   | 9    | 11   |
| Mozambique               | 1    | 0    | (4)  | (13) | (8)  | (4)  | 4    | (13) | (17) | (16) | (12) | (9)  | (13) | (11) |
| Niger                    | 23   | 9    | 8    | 8    | (2)  | 6    | 8    | 8    | 19   | 9    | 4    | 8    | 2    | 1    |
| Nigeria                  | 32   | 19   | 14   | 11   | 11   | 13   | 12   | 18   | 15   | 23   | 30   | 23   | 21   | 19   |
| Rwanda                   | 4    | 1    | 5    | 4    | 9    | 8    | 8    | 4    | 4    | 2    | (1)  | (5)  | (7)  | (10) |
| Sierra Leone             | (1)  | 4    | 3    | 3    | 11   | 10   | 10   | 11   | 8    | 6    | 9    | 12   | 11   | 5    |
| Somalia                  | (13) | (16) | (13) | (27) | (22) | 17   | 3    | 9    | 7    | (7)  | (13) | NA   | NA   | NA   |
| Sudan                    | 3    | 1    | 8    | 2    | 6    | (4)  | 8    | 13   | 7    | 7    | 7    | (3)  | NA   | NA   |
| Tanzania                 | 10   | 16   | 14   | 8    | 8    | 8    | 11   | 26   | (11) | 16   | 7    | 7    | 2    | 10   |
| Uganda                   | 0    | 0    | 0    | 2    | 4    | 5    | 4    | (3)  | (2)  | 0    | 1    | (2)  | (2)  | (3)  |
| Zambia                   | 19   | 7    | 8    | 15   | 17   | 15   | 23   | 18   | 19   | 4    | 18   | 18   | 9    | 14   |

Source: World Bank, World Tables, 1995.

Table 3. Sub-Saharan African SILICs: Export Growth, 1980-92  
(In percent)

|                          | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   | 1991   | 1992   |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Burundi                  | -37.50 | 9.23   | 23.94  | -9.09  | 22.50  | 13.27  | 52.25  | -46.75 | 47.78  | -41.35 | -3.85  | 21.33  | -21.21 |
| Central African Republic | 45.57  | -31.30 | 37.97  | -31.19 | 13.33  | 8.24   | -28.26 | 96.97  | -49.23 | 103.03 | -62.69 | 86.00  | 33.33  |
| Côte d'Ivoire            | 24.93  | -19.32 | -11.83 | -7.52  | 30.53  | 8.93   | 14.12  | -7.27  | -10.23 | 4.98   | 4.81   | -10.06 | 4.23   |
| Equatorial Guinea        | -51.72 | 14.29  | 6.25   | 5.88   | 11.11  | 15.00  | 69.57  | 0.00   | 25.64  | -16.33 | -9.76  | -2.70  | -2.78  |
| Ethiopia                 | 1.67   | -8.47  | 3.86   | -0.50  | 3.73   | -19.90 | 38.92  | -20.26 | 13.78  | 7.36   | -34.96 | -35.71 | -10.58 |
| Ghana                    | 15.38  | -7.40  | -17.87 | -42.38 | 7.36   | 15.37  | 40.61  | 3.77   | 11.55  | 0.99   | -12.99 | 12.01  | -1.20  |
| Guinea                   | 23.03  | 25.64  | -16.33 | -2.44  | 29.50  | -4.83  | -8.72  | 21.11  | -6.06  | 16.41  | 12.58  | -37.41 | 4.76   |
| Guinea-Bissau            | -21.43 | 27.27  | -14.29 | -25.00 | 88.89  | -29.41 | -16.67 | 50.00  | 6.67   | -12.50 | 35.71  | 5.26   | -70.00 |
| Kenya                    | 25.47  | -14.47 | -17.76 | 0.61   | 10.17  | -9.70  | 23.72  | -20.66 | 11.25  | -9.27  | 9.70   | 6.30   | 22.30  |
| Liberia                  | 9.68   | -10.19 | -9.83  | -10.27 | 5.61   | -3.54  | -6.42  | -6.37  | 3.66   | 16.16  | -28.26 | 3.03   | 2.94   |
| Madagascar               | 2.03   | -21.39 | -1.90  | -4.52  | 12.50  | -17.72 | 10.95  | 3.95   | -13.29 | 14.96  | -1.90  | -0.97  | -12.75 |
| Mali                     | 39.46  | -24.88 | -5.19  | 13.01  | -19.39 | -6.77  | 70.97  | -15.57 | 39.11  | 8.84   | 24.72  | 4.73   | -7.06  |
| Mauritania               | 31.97  | 34.54  | -11.11 | 31.47  | -2.62  | 25.93  | -6.68  | 22.64  | -17.29 | 23.45  | 7.32   | -6.18  | 2.27   |
| Mozambique               | 10.63  | 0.00   | -18.51 | -42.36 | -27.27 | -19.79 | 2.60   | 22.78  | 6.19   | 1.94   | 20.00  | 28.57  | -14.20 |
| Niger                    | 26.34  | -19.61 | -27.03 | -9.94  | -8.36  | -23.72 | 51.67  | -1.58  | -7.37  | -15.57 | 15.98  | 10.25  | -9.29  |
| Nigeria                  | 44.22  | -27.65 | -24.23 | -22.20 | 12.74  | 9.09   | -55.01 | 25.16  | -6.88  | 18.37  | 58.66  | -5.01  | -3.09  |
| Rwanda                   | -5.08  | -1.79  | -6.36  | -22.33 | 81.25  | -9.66  | -9.92  | 10.17  | -22.31 | 19.80  | 9.09   | -29.55 | -26.88 |
| São Tomé and Príncipe    | -9.09  | -30.00 | -35.71 | -33.33 | 16.67  | -14.29 | 66.67  | -30.00 | 42.86  | -50.00 | -20.00 | 25.00  | 0.00   |
| Sierra Leone             | -0.97  | -25.00 | -41.83 | 3.37   | 60.87  | -12.84 | 9.30   | -5.67  | -19.55 | 28.97  | 3.62   | 1.40   | 2.76   |
| Somalia                  | 18.75  | 14.29  | 30.92  | -44.22 | -49.55 | 62.50  | -2.20  | 16.85  | -18.27 | -3.53  | -2.44  | 0.00   | 0.00   |
| Sudan                    | 1.50   | 21.18  | -24.16 | 25.05  | 0.80   | -41.65 | -9.26  | 51.35  | 0.99   | 32.02  | -18.15 | -1.82  | -25.93 |
| Tanzania                 | -0.59  | 20.67  | -25.77 | -19.56 | 8.20   | -10.35 | -7.32  | -14.29 | -4.61  | 38.66  | 11.26  | -13.25 | 21.39  |
| Uganda                   | -20.87 | -29.86 | 44.63  | 10.00  | 0.00   | 0.52   | 12.66  | -26.83 | -14.11 | -8.76  | -39.20 | 32.24  | -28.86 |
| Zambia                   | -5.60  | -17.32 | -4.84  | -19.28 | -19.88 | -17.25 | 28.70  | 24.01  | 34.94  | 14.35  | -33.26 | -13.79 | 50.71  |
| Average                  | 6.99   | -5.06  | -6.96  | -10.70 | 12.03  | -3.44  | 14.26  | 6.40   | 2.30   | 8.04   | -2.25  | 3.32   | -3.71  |

Source: IMF, International Financial Statistics Yearbook, 1995

Table 4. Sub-Saharan African SILICs: Cost of Terms of Trade Deterioration, 1980-93 <sup>1/</sup>

|                          | 1980    | 1981    | 1982    | 1983   | 1984   | 1985   | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993   |
|--------------------------|---------|---------|---------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--------|
| Burundi                  | -87.42  | -128.34 | 21.52   | 123.83 | 225.25 | -41.95 | 147.17  | -283.10 | 124.37  | -131.59 | -164.89 | 59.45   | -173.32 | 125.89 |
| Central African Republic | -46.14  | 32.32   | -45.80  | 29.30  | 8.94   | 33.73  | -9.87   | -73.20  | 69.43   | -22.77  | -15.90  | -89.13  | 22.52   | 52.42  |
| Côte d'Ivoire            | 14.21   | -36.75  | 0.68    | 15.51  | -43.27 | 121.31 | -105.58 | -66.16  | 84.22   | 85.22   | -81.34  | -118.23 | 204.32  | -47.73 |
| Equatorial Guinea        | NA      | NA      | NA      | NA     | NA     | 30.62  | -52.98  | 2.95    | -5.97   | -20.63  | 7.98    | -16.63  | 18.69   | -14.32 |
| Ethiopia                 | 80.07   | -93.45  | 3.16    | 19.79  | 27.75  | 26.78  | 115.79  | -155.73 | -18.47  | -3.37   | -117.75 | -175.55 | 65.93   | -90.39 |
| Ghana                    | -0.19   | -154.92 | -147.58 | 55.54  | 435.57 | -79.44 | 82.33   | -36.15  | -50.37  | -88.44  | -38.12  | -0.00   | -36.70  | -38.77 |
| Guinea                   | 0.00    | 0.00    | 0.00    | 0.00   | 0.00   | NA     | -90.61  | 52.40   | -88.40  | -31.16  | -39.41  | 8.78    | 20.48   | -12.35 |
| Guinea-Bissau            | NA      | NA      | -1.99   | 38.13  | 7.30   | -10.27 | -0.05   | -39.59  | -28.33  | 29.06   | 6.21    | -20.85  | -32.51  | -33.00 |
| Kenya                    | -43.51  | 46.93   | -46.41  | 19.23  | 151.25 | 54.34  | 3.50    | -85.47  | -52.98  | -50.07  | -38.32  | -9.82   | 0.21    | -13.23 |
| Liberia                  | -5.07   | -30.62  | 9.70    | 23.80  | -34.79 | 22.77  | -14.59  | 95.95   | NA      | NA      | NA      | NA      | NA      | NA     |
| Madagascar               | -95.20  | -17.10  | 19.41   | -93.06 | -6.23  | -63.18 | 114.83  | -60.91  | 97.17   | -22.30  | -4.17   | -89.13  | -7.51   | -0.76  |
| Mali                     | -17.02  | -39.87  | 12.53   | 83.00  | 14.42  | 16.77  | 107.32  | -111.85 | -42.10  | -52.46  | -62.18  | 2.19    | -17.38  | 7.96   |
| Mauritania               | 1.17    | -21.30  | -6.57   | 7.24   | 24.41  | -13.34 | -34.26  | 28.28   | 5.22    | -5.92   | 12.15   | -9.38   | -31.18  | -3.00  |
| Mozambique               | -16.97  | 35.53   | 0.26    | -8.61  | 192.21 | 63.10  | 38.54   | -27.61  | 2.29    | -0.97   | -9.55   | 12.49   | -5.65   | -24.05 |
| Niger                    | -0.05   | -9.23   | -54.90  | -20.45 | -7.29  | 19.15  | -5.57   | 14.24   | -36.16  | -42.29  | -32.14  | 20.34   | -23.92  | -43.76 |
| Nigeria                  | -100.88 | -13.43  | 5.34    | -9.90  | -68.64 | -5.83  | 40.25   | -5.57   | -99.28  | -57.30  | -81.30  | -13.74  | 35.79   | NA     |
| Rwanda                   | 291.81  | 76.91   | -134.40 | -57.85 | 537.27 | 120.70 | -365.56 | 30.86   | -122.62 | 210.75  | 179.51  | -116.37 | -35.74  | -35.63 |
| São Tomé and Príncipe    | -76.94  | 35.38   | 4.27    | 54.41  | 43.90  | -28.73 | 36.25   | -147.15 | 51.41   | -30.25  | -99.73  | 2.31    | -0.21   | 2.31   |
| Sierra Leone             | -96.35  | -69.66  | -58.29  | 204.68 | 71.76  | -1.42  | 330.69  | -56.26  | 171.35  | -91.58  | -57.86  | -49.84  | -54.18  | 35.94  |
| Somalia                  | -10.82  | 6.56    | 16.40   | -16.43 | 20.02  | -23.90 | 42.69   | -32.60  | 6.12    | 12.18   | -15.30  | NA      | NA      | NA     |
| Sudan                    | -104.39 | -35.88  | 1.29    | 47.09  | -38.49 | -18.06 | -13.51  | -68.36  | 4.72    | 4.84    | -0.03   | 4.28    | -8.72   | NA     |
| Tanzania                 | -98.83  | 4.97    | -0.00   | -0.00  | 0.00   | 0.00   | 0.00    | -0.00   | 0.00    | 0.00    | -0.00   | 0.00    | -0.00   | 0.00   |
| Uganda                   | -199.47 | -79.87  | -70.87  | 35.38  | 0.30   | -56.51 | 49.14   | -134.25 | 9.12    | -27.08  | -53.01  | -32.60  | -36.52  | -40.11 |
| Zambia                   | -171.44 | -304.98 | -90.31  | 69.03  | 237.14 | 73.11  | -22.11  | -80.40  | -110.79 | -112.71 | 0.00    | NA      | NA      | NA     |
| Average                  | -61.52  | -51.59  | -37.54  | 15.02  | -3.07  | -5.88  | -16.02  | 67.59   | 55.38   | 43.69   | -1.63   | -25.72  | 13.89   | -10.11 |

Source: IMF, International Financial Statistics Yearbook, 1995.

<sup>1/</sup> Following Dornbusch (1986), the cost of terms of trade deterioration is defined as the percentage change in the terms of trade multiplied by the import/income ratio. In the calculation here, the import/income ratio is the value of imports to GNP.

Table 5. Sub-Saharan African SILICs: Some Macroeconomic Indices of Performance, 1977-86 and 1987-94 <sup>1/</sup>  
(In percent)

|                          | Average Growth<br>GNP Per Capita |                | Average Growth<br>Consumer Price Index (CPI) |                | Average Growth<br>Real GDP |                | Index of Economic<br>Performance |                |
|--------------------------|----------------------------------|----------------|--|----------------|----------------------------|----------------|----------------------------------|----------------|
|                          | 1977-86<br>(1)                   | 1987-93<br>(2) | 1977-86<br>(3)                               | 1987-93<br>(4) | 1977-86<br>(5)             | 1987-94<br>(6) | 1977-86<br>(7)                   | 1987-94<br>(8) |
| Burundi                  | 8.04                             | -4.43          | 10.00  | 7.64           | 3.60                       | 1.24           | 7.04                             | -5.32          |
| Central African Republic | 4.67                             | 4.55           | 10.70  | -1.31          | 2.00                       | 2.49           | 3.65                             | NA             |
| Côte d'Ivoire            | 2.44                             | -0.74          | 11.00  | 3.16           | 2.90                       | 2.59           | 1.40                             | -1.24          |
| Equatorial Guinea        | 0.00                             | 1.74           | 18.10  | -0.41          | 1.50                       | 2.91           | -1.26                            | NA             |
| Ethiopia                 | 0.00                             | 0.00           | 9.50   | 8.49           | 1.60                       | 2.86           | -0.98                            | -0.93          |
| Ghana                    | 3.45                             | 1.53           | 58.20  | 26.67          | 1.10                       | 4.89           | 1.69                             | 0.11           |
| Guinea                   | 0.00                             | 2.22           | 25.60  | 22.16          | 1.80                       | 5.45           | -1.41                            | 0.88           |
| Guinea Bissau            | -0.05                            | 5.25           | 30.20  | 62.31          | 6.50                       | 7.09           | -1.53                            | 3.45           |
| Kenya                    | 3.58                             | -2.33          | 12.40  | 18.84          | 5.10                       | 5.57           | 2.48                             | -3.60          |
| Liberia                  | -0.12                            | 0.62           | 5.90   | 11.43          | 0.50                       | 4.56           | -0.89                            | -0.44          |
| Madagascar               | 0.28                             | -3.13          | 15.70  | 14.23          | 2.50                       | 3.29           | -0.92                            | -4.28          |
| Mali                     | 2.59                             | 8.37           | 11.40  | -0.99          | 1.60                       | 2.70           | 1.53                             | NA             |
| Mauritania               | 1.37                             | 3.44           | 4.40   | 7.84           | 4.20                       | 2.79           | 0.73                             | 2.54           |
| Mozambique               | 1.25                             | -7.91          | 13.30  | 60.76          | -1.40                      | 2.28           | 0.12                             | -9.69          |
| Niger                    | 2.42                             | 1.51           | 8.70   | -1.83          | 2.10                       | 2.16           | 1.48                             | NA             |
| Nigeria                  | 2.02                             | -11.04         | 15.80  | 31.06          | -1.20                      | 2.13           | 0.82                             | -12.53         |
| Rwanda                   | 10.58                            | -4.70          | 8.00   | 7.70           | 3.80                       | 2.35           | 9.68                             | -5.58          |
| São Tomé Príncipe        | 0.87                             | -0.76          | 5.70   | 33.66          | 0.50                       | 2.08           | 0.11                             | -2.28          |
| Sierra Leone             | 4.74                             | -10.01         | 36.90  | 81.57          | 0.30                       | 3.18           | 3.17                             | -11.93         |
| Somalia                  | -1.18                            | -1.10          | 35.50  | 109.48         | 2.90                       | -0.13          | -2.73                            | -3.14          |
| Sudan                    | -9.20                            | 0.00           | 27.90  | 81.00          | 1.00                       | 5.31           | -10.64                           | -1.91          |
| Tanzania                 | 3.79                             | -14.38         | 24.70  | 24.93          | 1.80                       | 5.10           | 2.39                             | -15.77         |
| Uganda                   | 5.00                             | -1.78          | 79.60  | 87.03          | 0.80                       | 7.40           | 3.10                             | -3.72          |
| Zaire                    | -4.65                            | 0.02           | 52.50  | 1219.29        | 1.00                       | 8.71           | -6.37                            | -3.06          |

Sources: World Bank, The World Bank Atlas for data on per capita income.

IMF, World Economic Outlook for data on CPI.

IMF, IFS Yearbook 1995 for data on real GNP.

<sup>1/</sup> The index of economic performance is defined as:  $IEP = g - \log b$ , where IEP is the index of economic performance; g is the average growth in per capita income, and b is the average inflation, defined as the growth rate in the consumer price index (CPI).



Table 6. Sub-Saharan African SILICS: External Debt, 1980-93  
(In millions of U.S. dollars)

|                 | 1980     | 1981     | 1982     | 1983     | 1984     | 1985     | 1986     | 1987      | 1988      | 1989      | 1990      | 1991      | 1992     | 1993     |
|-----------------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|----------|----------|
| Burundi         | 165.70   | 178.70   | 227.40   | 307.80   | 348.00   | 455.10   | 570.50   | 769.70    | 800.70    | 888.70    | 907.40    | 963.60    | 1022.50  | 1062.40  |
| C.A.R.          | 194.60   | 233.50   | 253.40   | 259.30   | 265.20   | 347.60   | 469.50   | 625.80    | 678.70    | 709.00    | 715.60    | 818.90    | 839.80   | 904.30   |
| C.d'Ivoire      | 7444.70  | 8109.50  | 8945.40  | 8843.70  | 8565.60  | 9638.60  | 10547.20 | 12572.00  | 12573.90  | 14055.70  | 16613.50  | 17557.20  | 17986.50 | 19137.00 |
| E. Guinea       | 75.60    | 92.40    | 116.90   | 122.40   | 116.40   | 132.20   | 158.50   | 195.80    | 210.60    | 229.10    | 241.10    | 253.70    | 255.40   | 268.00   |
| Ethiopia        | 823.50   | 1160.90  | 1266.50  | 1425.80  | 1615.80  | 2012.90  | 2388.80  | 2910.60   | 3258.90   | 3467.70   | 3780.30   | 4169.20   | 4360.10  | 4728.50  |
| Ghana           | 1398.50  | 1539.00  | 1469.20  | 1650.40  | 1947.10  | 2237.90  | 2742.50  | 3280.20   | 3075.80   | 3332.00   | 3798.70   | 4248.60   | 4311.40  | 4589.80  |
| Guinea          | 1109.80  | 1352.40  | 1348.30  | 1329.70  | 1240.00  | 1454.80  | 1754.90  | 2063.50   | 2256.10   | 2166.70   | 2468.80   | 2628.10   | 2657.00  | 2864.10  |
| G. Bissau       | 134.10   | 140.60   | 158.20   | 186.40   | 240.70   | 305.50   | 334.50   | 437.90    | 467.10    | 512.30    | 605.40    | 650.70    | 659.60   | 691.70   |
| Kenya           | 3393.50  | 3233.40  | 3375.00  | 3637.80  | 3520.80  | 4201.00  | 4724.20  | 5897.10   | 5901.00   | 5901.80   | 7126.40   | 7156.70   | 6691.30  | 6993.20  |
| Liberia         | 685.70   | 813.40   | 902.20   | 1005.20  | 1075.60  | 1242.70  | 1436.40  | 1680.50   | 1658.60   | 1689.50   | 1855.40   | 1953.70   | 1922.40  | 1925.30  |
| Madagascar      | 1222.60  | 1577.10  | 1923.20  | 2132.50  | 2316.00  | 2746.00  | 3339.10  | 3990.80   | 4091.30   | 3980.10   | 4226.40   | 4471.10   | 4495.90  | 4593.80  |
| Mali            | 731.90   | 834.50   | 879.00   | 991.80   | 1243.90  | 1468.20  | 1756.10  | 2067.10   | 2038.80   | 2145.20   | 2471.60   | 2590.10   | 2590.30  | 2650.30  |
| Mauritania      | 843.00   | 966.90   | 1138.90  | 1278.50  | 1322.50  | 1485.10  | 1755.40  | 2057.80   | 2081.60   | 2004.70   | 2142.90   | 2235.30   | 2138.30  | 2203.30  |
| Mozambique      | 0.00     | 0.00     | 0.00     | 202.00   | 1194.10  | 2705.60  | 3318.60  | 4043.40   | 4201.40   | 4527.20   | 4770.00   | 4716.90   | 5185.70  | 5263.10  |
| Niger           | 862.90   | 1021.80  | 957.50   | 949.70   | 955.80   | 1208.20  | 1448.30  | 1697.40   | 1742.00   | 1587.10   | 1819.90   | 1609.60   | 1651.60  | 1703.70  |
| Nigeria         | 8933.90  | 12136.10 | 12953.70 | 18539.50 | 18536.90 | 19549.90 | 23402.60 | 30654.90  | 31245.80  | 31977.80  | 34537.20  | 34436.00  | 30958.70 | 32530.90 |
| Rwanda          | 189.80   | 196.50   | 218.30   | 242.30   | 291.40   | 366.70   | 452.30   | 606.00    | 654.50    | 644.30    | 736.20    | 833.30    | 873.60   | 910.10   |
| S.T. & Principe | 23.50    | 34.40    | 37.80    | 43.80    | 54.00    | 62.70    | 79.00    | 97.70     | 109.30    | 136.10    | 152.80    | 198.00    | 216.90   | 254.00   |
| S. Leone        | 435.50   | 563.40   | 616.30   | 636.20   | 616.10   | 722.70   | 858.70   | 1017.90   | 1023.20   | 1065.10   | 1157.20   | 1249.40   | 1264.60  | 1388.10  |
| Somalia         | 659.70   | 1055.90  | 1221.80  | 1410.50  | 1498.00  | 1640.00  | 1800.90  | 2010.80   | 2114.30   | 2160.40   | 2370.20   | 2449.30   | 2446.60  | 2501.90  |
| Sudan           | 5163.20  | 6191.90  | 7216.30  | 7600.40  | 8612.40  | 9127.20  | 9869.80  | 11562.80  | 11933.40  | 13843.80  | 15303.00  | 15833.80  | 16084.70 | 16561.70 |
| Tanzania        | 2967.80  | 3082.90  | 3349.10  | 3559.80  | 3766.70  | 4212.30  | 4896.50  | 5846.00   | 6078.50   | 6004.20   | 6877.50   | 7176.50   | 7304.00  | 7660.60  |
| Uganda          | 702.50   | 717.00   | 882.10   | 1014.90  | 1077.40  | 1238.80  | 1422.10  | 1940.40   | 1974.40   | 2253.50   | 2668.70   | 2877.10   | 3032.00  | 3055.50  |
| Zambia          | 3261.10  | 3620.30  | 3688.40  | 3781.00  | 3792.70  | 4575.80  | 5744.80  | 6625.80   | 6840.10   | 6709.40   | 7242.60   | 7286.50   | 6943.00  | 6787.90  |
| Zaire           | 403.70   | 669.40   | 1039.90  | 1532.10  | 2032.50  | 2915.00  | 3658.50  | 4488.90   | 4525.90   | 4770.00   | 5089.80   | 5078.30   | 5336.30  | 5290.40  |
| Total           | 41826.81 | 49521.90 | 54184.80 | 62683.50 | 66245.60 | 76052.50 | 88929.70 | 109140.80 | 111535.90 | 116761.40 | 129678.60 | 133441.61 | 131228.1 | 136519.6 |

Source: World Bank, World Bank Debt Tables, several years.

Table 7. Sub-Saharan African SILICs: External Debt Burden Indicators, 1980-93  
(In percent)

|               |         | 1980   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   | 1991   | 1992   | 1993    |
|---------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Burundi       | EDT/XGS | 180.10 | 312.10 | 338.80 | 354.40 | 399.20 | 679.80 | 575.20 | 757.10 | 927.80 | 761.10 | 916.90 | 1204.80 |
|               | EDT/GNP | 18.20  | 28.70  | 35.70  | 40.30  | 48.30  | 69.80  | 75.60  | 81.10  | 80.60  | 83.10  | 94.40  | 109.80  |
|               | TDS/XGS | 9.40   | 14.70  | 23.10  | 20.40  | 24.50  | 41.30  | 33.30  | 36.40  | 43.40  | 31.00  | 35.60  | 41.00   |
|               | INT/XGS | 4.70   | 5.30   | 9.20   | 8.30   | 10.00  | 15.70  | 13.30  | 14.00  | 14.40  | 11.00  | 14.10  | 14.70   |
|               | INT/GNP | 0.50   | 0.50   | 1.00   | 0.90   | 1.20   | 1.60   | 1.80   | 1.50   | 1.20   | 1.20   | 1.50   | 1.30    |
| C.A.R.        | EDT/XGS | 94.80  | 159.30 | 174.30 | 187.90 | 249.30 | 313.70 | 482.00 | 331.00 | 334.20 | 443.40 | 488.60 | 469.00  |
|               | EDT/GNP | 24.40  | 39.80  | 42.20  | 50.00  | 48.00  | 61.00  | 62.80  | 62.60  | 56.00  | 65.30  | 64.10  | 74.70   |
|               | TDS/XGS | 4.90   | 12.90  | 16.30  | 14.20  | 15.10  | 14.00  | 19.00  | 15.60  | 13.60  | 8.30   | 9.00   | 4.80    |
|               | INT/XGS | 1.60   | 5.80   | 5.70   | 5.30   | 6.80   | 6.40   | 7.80   | 5.60   | 5.60   | 4.40   | 5.10   | 3.00    |
|               | INT/GNP | 0.40   | 1.40   | 1.40   | 1.40   | 1.30   | 1.20   | 1.00   | 1.10   | 0.90   | 0.70   | 0.70   | 0.50    |
| Côte d'Ivoire | EDT/XGS | 204.50 | 308.10 | 267.30 | 304.60 | 283.10 | 352.80 | 378.90 | 431.50 | 461.90 | 524.70 | 526.30 | 596.30  |
|               | EDT/GNP | 76.90  | 124.80 | 133.10 | 154.60 | 127.70 | 131.90 | 133.80 | 168.60 | 195.90 | 217.20 | 208.50 | 243.90  |
|               | TDS/XGS | 38.70  | 49.60  | 40.60  | 44.70  | 35.10  | 37.10  | 31.60  | 32.40  | 34.20  | 37.10  | 32.30  | 30.00   |
|               | INT/XGS | 18.80  | 25.60  | 23.40  | 23.90  | 21.30  | 16.70  | 15.00  | 18.20  | 18.00  | 19.90  | 16.50  | 15.50   |
|               | INT/GNP | 7.10   | 10.40  | 11.60  | 12.00  | 9.60   | 6.20   | 5.30   | 7.10   | 7.60   | 8.30   | 6.60   | 6.40    |
| Ethiopia      | EDT/XGS | 134.50 | 240.10 | 243.30 | 285.40 | 265.30 | 368.50 | 423.20 | 366.60 | 444.60 | 557.70 | 562.70 | 614.00  |
|               | EDT/GNP | 20.00  | 28.70  | 31.70  | 42.40  | 45.60  | 53.30  | 57.60  | 58.70  | 63.60  | 63.90  | 65.70  | 116.20  |
|               | TDS/XGS | 7.30   | 17.80  | 19.90  | 22.50  | 24.90  | 31.30  | 40.30  | 32.80  | 28.00  | 18.70  | 13.50  | 8.90    |
|               | INT/XGS | 4.50   | 6.90   | 7.30   | 7.00   | 6.70   | 8.70   | 12.40  | 9.40   | 6.80   | 6.30   | 6.00   | 4.30    |
|               | INT/GNP | 0.70   | 0.80   | 0.90   | 1.00   | 1.20   | 1.30   | 1.70   | 1.50   | 1.00   | 0.70   | 0.70   | 0.80    |
| E. Guinea     | EDT/XGS | 514.20 | 680.10 | 538.90 | 551.10 | 426.20 | 419.20 | 393.70 | 526.70 | 531.00 | 604.20 | 440.10 | 432.20  |
|               | EDT/GNP | 0.00   | 0.00   | 0.00   | 175.20 | 166.90 | 169.50 | 173.30 | 214.90 | 190.90 | 203.30 | 172.00 | 180.90  |
|               | TDS/XGS | 17.60  | 20.00  | 46.80  | 42.50  | 17.60  | 24.80  | 9.70   | 13.50  | 11.20  | 9.50   | 5.30   | 2.00    |
|               | INT/XGS | 5.80   | 11.70  | 12.40  | 8.20   | 5.70   | 8.80   | 4.60   | 2.10   | 2.00   | 4.00   | 1.90   | 1.20    |
|               | INT/GNP | N/A    | N/A    | N/A    | 2.60   | 2.20   | 3.40   | 2.00   | 0.80   | 0.70   | 1.30   | 0.80   | 0.50    |

Table 7. Sub-Saharan African SILICs: External Debt Burden Indicators, 1980-93 (continued)  
(In percent)

|               |         | 1980   | 1983    | 1984   | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993    |
|---------------|---------|--------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Ghana         | EDT/XGS | 115.20 | 345.30  | 314.90 | 329.10  | 334.80  | 361.70  | 318.80  | 372.20  | 383.80  | 381.40  | 384.10  | 377.70  |
|               | EDT/GNP | 31.60  | 41.00   | 44.60  | 50.30   | 49.10   | 66.50   | 60.70   | 64.90   | 62.10   | 61.80   | 63.70   | 76.90   |
|               | TDS/XGS | 13.10  | 31.40   | 22.40  | 24.30   | 27.80   | 45.70   | 56.60   | 50.60   | 35.90   | 26.50   | 26.80   | 22.80   |
|               | INT/XGS | 4.40   | 12.90   | 11.00  | 12.90   | 13.50   | 12.80   | 13.20   | 12.90   | 10.70   | 9.80    | 10.20   | 9.00    |
|               | INT/GNP | 1.20   | 1.50    | 1.60   | 2.00    | 2.00    | 2.30    | 2.50    | 2.20    | 1.70    | 1.60    | 1.70    | 1.80    |
| Guinea        | EDT/XGS | NA     | NA      | NA     | NA      | 181.80  | 1610.20 | 1661.50 | 1962.30 | 1235.70 | 1384.80 | 2087.70 | 1921.30 |
|               | EDT/GNP | 127.90 | NA      | NA     | NA      | 272.40  | 263.70  | 302.70  | 262.20  | 243.60  | 278.40  | 296.20  | 292.00  |
|               | TDS/XGS | NA     | NA      | NA     | NA      | 41.00   | 38.40   | 34.20   | 41.50   | 16.90   | 14.00   | 23.00   | 10.00   |
|               | INT/XGS | NA     | NA      | NA     | NA      | 17.50   | 24.30   | 20.40   | 19.90   | 12.20   | 8.30    | 10.50   | 5.80    |
|               | INT/GNP | 1.60   | NA      | NA     | NA      | 2.50    | 4.00    | 3.70    | 2.70    | 2.40    | 1.70    | 1.50    | 0.90    |
| Guinea-Bissau | EDT/XGS | 0.00   | 1216.50 | 955.20 | 1700.30 | 1881.50 | 1610.20 | 1661.50 | 1962.30 | 1235.70 | 1384.80 | 2087.70 | 1921.30 |
|               | EDT/GNP | 127.90 | 114.00  | 175.80 | 197.40  | 272.40  | 263.70  | 302.70  | 262.20  | 243.60  | 278.40  | 296.20  | 292.00  |
|               | TDS/XGS | 0.00   | 33.20   | 27.70  | 49.80   | 41.00   | 38.40   | 34.20   | 41.50   | 16.90   | 14.00   | 23.00   | 10.00   |
|               | INT/XGS | 0.00   | 20.40   | 19.80  | 30.30   | 17.50   | 24.30   | 20.40   | 19.90   | 12.20   | 8.30    | 10.50   | 5.80    |
|               | INT/GNP | 1.60   | 1.90    | 3.60   | 3.50    | 2.50    | 4.00    | 3.70    | 2.70    | 2.40    | 1.70    | 1.50    | 0.90    |
| Kenya         | EDT/XGS | 154.40 | 248.90  | 344.70 | 313.20  | 258.90  | 344.70  | 313.20  | 305.90  | 320.40  | 317.10  | 310.30  | 300.20  |
|               | EDT/GNP | 48.20  | 64.80   | 59.40  | 69.60   | 67.70   | 76.90   | 72.30   | 73.80   | 88.10   | 94.30   | 88.60   | 135.20  |
|               | TDS/XGS | 19.70  | 34.90   | 35.90  | 38.40   | 35.70   | 40.80   | 41.00   | 38.00   | 36.50   | 33.00   | 33.10   | 28.00   |
|               | INT/XGS | 10.40  | 13.50   | 16.90  | 17.30   | 13.50   | 16.90   | 17.30   | 15.20   | 15.50   | 14.40   | 12.50   | 11.30   |
|               | INT/GNP | 3.30   | 3.90    | 4.00   | 4.00    | 3.70    | 3.80    | 4.00    | 3.70    | 4.30    | 4.30    | 3.60    | 5.10    |
| Liberia       | EDT/XGS | 111.80 | 218.00  | 221.20 | 265.50  | 307.60  | 394.10  | N/A     | N/A     | N/A     | N/A     | N/A     |         |
|               | EDT/GNP | 62.70  | 103.70  | 110.00 | 120.70  | 141.90  | 160.40  | N/A     | N/A     | N/A     | N/A     | N/A     |         |
|               | TDS/XGS | 8.70   | 11.00   | 13.10  | 8.50    | 6.90    | 3.70    | N/A     | N/A     | N/A     | N/A     | N/A     |         |
|               | INT/XGS | 5.80   | 6.40    | 6.60   | 5.30    | 3.90    | 2.50    | N/A     | N/A     | N/A     | N/A     | N/A     |         |
|               | INT/GNP | 3.20   | 3.00    | 3.30   | 2.40    | 1.80    | 1.00    | N/A     | N/A     | N/A     | N/A     | N/A     |         |

Table 7. Sub-Saharan African SILICs: External Debt Burden Indicators, 1980-93 (continued)  
(In percent)

|            |         | 1980   | 1983   | 1984   | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993    |
|------------|---------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Mauritania | EDT/XGS | 306.10 | 364.20 | 403.90 | 367.60  | 383.40  | 450.00  | 413.10  | 393.80  | 436.90  | 436.00  | 411.30  | 479.40  |
|            | EDT/GNP | 125.50 | 173.70 | 195.80 | 235.10  | 239.60  | 247.30  | 235.10  | 217.60  | 223.10  | 209.10  | 190.30  | 245.10  |
|            | TDS/XGS | 17.30  | 15.20  | 20.10  | 25.30   | 21.70   | 26.20   | 26.50   | 20.50   | 30.30   | 19.40   | 16.20   | 27.30   |
|            | INT/XGS | 7.90   | 9.60   | 10.80  | 9.20    | 8.70    | 8.90    | 8.80    | 7.50    | 9.70    | 7.10    | 4.90    | 10.10   |
|            | INT/GNP | 3.20   | 4.60   | 5.30   | 5.90    | 5.40    | 4.90    | 5.00    | 4.10    | 4.90    | 3.40    | 2.30    | 5.20    |
| Madagascar | EDT/XGS | 235.60 | 586.50 | 546.10 | 693.70  | 743.80  | 912.00  | 986.80  | 837.70  | 796.20  | 907.50  | 879.10  | 949.00  |
|            | EDT/GNP | 30.60  | 61.80  | 78.40  | 91.20   | 107.60  | 166.90  | 180.80  | 172.40  | 145.00  | 178.40  | 157.40  | 142.60  |
|            | TDS/XGS | 17.10  | 21.00  | 23.60  | 43.30   | 43.50   | 59.20   | 58.00   | 56.60   | 49.10   | 33.00   | 19.10   | 14.30   |
|            | INT/XGS | 10.80  | 14.30  | 14.10  | 20.40   | 19.30   | 32.30   | 26.00   | 30.40   | 24.90   | 16.10   | 7.70    | 5.70    |
|            | INT/GNP | 1.40   | 1.50   | 2.00   | 2.70    | 2.70    | 5.90    | 4.80    | 6.30    | 4.50    | 3.20    | 1.40    | 0.90    |
| Mali       | EDT/XGS | 227.30 | 404.30 | 469.10 | 480.90  | 534.40  | 502.60  | 487.00  | 486.50  | 445.60  | 460.40  | 455.90  | 619.80  |
|            | EDT/GNP | 45.40  | 94.20  | 119.50 | 120.00  | 117.00  | 106.90  | 104.40  | 106.00  | 101.20  | 109.80  | 94.00   | 100.50  |
|            | TDS/XGS | 5.10   | 8.30   | 11.60  | 17.30   | 18.90   | 16.80   | 18.80   | 15.10   | 11.70   | 5.40    | 7.70    | 6.10    |
|            | INT/XGS | 2.30   | 4.40   | 6.00   | 7.50    | 7.10    | 5.80    | 5.80    | 4.90    | 4.30    | 2.40    | 2.90    | 2.50    |
|            | INT/GNP | 0.50   | 1.00   | 1.50   | 1.90    | 1.50    | 1.20    | 1.20    | 1.10    | 1.00    | 0.60    | 0.60    | 0.40    |
| Mozambique | EDT/XGS | N/A    | N/A    | N/A    | 1209.00 | 1728.40 | 1727.90 | 1619.60 | 1672.40 | 1594.80 | 1291.60 | 1432.90 | 1416.40 |
|            | EDT/GNP | N/A    | N/A    | N/A    | 82.90   | 103.90  | 357.20  | 403.90  | 406.60  | 380.70  | 376.40  | 484.30  | 419.20  |
|            | TDS/XGS | N/A    | N/A    | N/A    | 24.40   | 42.20   | 18.10   | 21.60   | 25.40   | 18.90   | 15.50   | 13.70   | 20.60   |
|            | INT/XGS | N/A    | N/A    | N/A    | 10.50   | 19.10   | 9.10    | 12.90   | 16.00   | 9.00    | 5.90    | 5.90    | 12.00   |
|            | INT/GNP | N/A    | N/A    | N/A    | 0.70    | 1.10    | 1.90    | 3.20    | 3.90    | 2.10    | 1.70    | 2.00    | 3.50    |
| Niger      | EDT/XGS | 132.80 | 243.20 | 271.10 | 379.30  | 436.90  | 359.20  | 395.80  | 407.60  | 471.10  | 454.40  | 500.40  | 574.70  |
|            | EDT/GNP | 34.50  | 55.70  | 67.30  | 86.60   | 78.20   | 77.90   | 78.50   | 74.40   | 75.00   | 70.40   | 71.40   | 78.60   |
|            | TDS/XGS | 21.70  | 36.80  | 26.70  | 33.70   | 39.00   | 34.90   | 39.80   | 31.30   | 25.30   | 25.20   | 15.80   | 31.40   |
|            | INT/XGS | 12.90  | 15.70  | 13.20  | 16.20   | 18.30   | 17.70   | 19.50   | 12.40   | 9.20    | 9.50    | 5.10    | 8.40    |
|            | INT/GNP | 3.30   | 3.60   | 3.30   | 3.70    | 3.30    | 3.80    | 3.90    | 2.30    | 1.50    | 1.50    | 0.70    | 1.20    |

Table 7. Sub-Saharan African SILICs: External Debt Burden Indicators, 1980-93 (continued)  
(In percent)

|                     |         | 1980   | 1983   | 1984    | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993    |
|---------------------|---------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Nigeria             | EDT/XGS | 33.00  | 170.70 | 150.00  | 144.60  | 324.10  | 390.50  | 417.40  | 315.50  | 241.50  | 271.60  | 241.70  | NA      |
|                     | EDT/GNP | 10.10  | 21.00  | 20.20   | 25.10   | 60.50   | 125.90  | 107.30  | 111.90  | 107.30  | 108.60  | 110.70  | 100.70  |
|                     | TDS/XGS | 4.30   | 23.80  | 33.80   | 33.30   | 28.60   | 14.20   | 29.60   | 22.10   | 23.60   | 26.60   | 29.40   | NA      |
|                     | INT/XGS | 3.40   | 13.10  | 15.80   | 12.80   | 11.30   | 8.30    | 20.40   | 15.40   | 13.10   | 17.80   | 13.20   | NA      |
|                     | INT/GNP | 1.00   | 1.60   | 2.10    | 2.00    | 2.10    | 2.70    | 5.20    | 5.50    | 5.80    | 7.10    | 6.10    | 4.10    |
| Rwanda              | EDT/XGS | 103.40 | 149.40 | 158.50  | 213.80  | 185.00  | 349.90  | 384.40  | 403.90  | 468.60  | 557.40  | 717.20  | 765.50  |
|                     | EDT/GNP | 16.30  | 16.10  | 18.40   | 21.40   | 24.50   | 29.80   | 30.80   | 27.20   | 33.20   | 51.40   | 55.40   | 63.40   |
|                     | TDS/XGS | 4.10   | 5.70   | 6.90    | 10.40   | 8.10    | 13.80   | 13.30   | 18.20   | 13.80   | 16.90   | 20.20   | 5.00    |
|                     | INT/XGS | 2.70   | 2.60   | 3.40    | 4.10    | 3.00    | 5.50    | 6.50    | 7.70    | 7.20    | 8.20    | 10.60   | 2.70    |
|                     | INT/GNP | 0.40   | 0.30   | 0.40    | 0.40    | 0.40    | 0.50    | 0.50    | 0.50    | 0.50    | 0.80    | 0.80    | 0.20    |
| S. Tomé<br>Príncipe | EDT/XGS | 100.70 | 374.10 | 302.70  | 652.60  | 607.10  | 1086.00 | 881.20  | 1347.10 | 1819.80 | 1833.80 | 2085.70 | 2116.90 |
|                     | EDT/GNP | 51.20  | 123.00 | 153.50  | 188.10  | 129.40  | 185.80  | 236.50  | 305.10  | 330.20  | 425.90  | 583.10  | 711.60  |
|                     | TDS/XGS | 5.00   | 22.50  | 17.70   | 29.10   | 10.30   | 35.20   | 19.50   | 48.70   | 33.80   | 17.70   | 24.30   | 21.80   |
|                     | INT/XGS | 1.10   | 5.30   | 4.80    | 13.50   | 3.90    | 8.40    | 9.40    | 33.70   | 20.40   | 10.10   | 11.70   | 14.80   |
|                     | INT/GNP | 0.60   | 1.70   | 2.40    | 3.90    | 0.80    | 1.40    | 2.50    | 7.60    | 3.70    | 2.30    | 3.30    | 5.00    |
| Sierra Leone        | EDT/XGS | 156.60 | 452.50 | 357.20  | 455.30  | 563.70  | 553.00  | 753.30  | 833.60  | 751.40  | 783.80  | 734.50  | 839.80  |
|                     | EDT/GNP | 40.70  | 44.30  | 58.40   | 57.60   | 60.50   | 188.60  | 90.80   | 111.60  | 149.50  | 191.60  | 210.50  | 218.80  |
|                     | TDS/XGS | 23.00  | 16.60  | 22.10   | 12.70   | 38.20   | 7.90    | 11.40   | 3.70    | 10.20   | 8.90    | 20.30   | 11.90   |
|                     | INT/XGS | 5.60   | 10.50  | 9.20    | 5.50    | 12.60   | 4.30    | 5.80    | 1.50    | 5.70    | 3.40    | 10.70   | 5.30    |
|                     | INT/GNP | 1.50   | 1.00   | 1.50    | 0.70    | 1.40    | 1.50    | 0.70    | 0.20    | 1.10    | 0.80    | 3.10    | 1.40    |
| Somalia             | EDT/XGS | 252.00 | 709.00 | 1403.90 | 1284.70 | 1538.20 | 1877.80 | 2597.90 | 2464.90 | 2599.00 | N/A     | N/A     | N/A     |
|                     | EDT/GNP | 109.50 | 194.70 | 201.10  | 198.80  | 206.10  | 209.80  | 213.40  | 212.80  | 283.90  | N/A     | N/A     | N/A     |
|                     | TDS/XGS | 4.90   | 12.20  | 20.10   | 15.70   | 53.20   | 34.70   | 6.70    | 36.80   | 11.70   | N/A     | N/A     | N/A     |
|                     | INT/XGS | 0.90   | 8.40   | 12.20   | 6.90    | 19.40   | 9.00    | 4.20    | 15.80   | 5.80    | N/A     | N/A     | N/A     |
|                     | INT/GNP | 0.40   | 2.30   | 1.80    | 1.10    | 2.60    | 1.00    | 0.30    | 1.40    | 0.60    | N/A     | N/A     | N/A     |

Table 7. Sub-Saharan African SILICs: External Debt Burden Indicators, 1980-93 (concluded)  
(In percent)

|          |         | 1980   | 1983   | 1984   | 1985   | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993    |
|----------|---------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| Sudan    | EDT/XGS | 499.30 | 609.90 | 639.30 | 732.90 | 903.50  | 1190.10 | 1079.10 | 1318.10 | 1819.60 | 3449.60 | 3265.30 | NA      |
|          | EDT/GNP | 65.70  | 82.70  | 77.10  | 93.10  | 117.70  | 117.30  | 130.20  | 133.40  | 175.30  | 220.70  | 272.80  | NA      |
|          | TDS/XGS | 25.50  | 18.10  | 12.70  | 12.00  | 22.60   | 9.90    | 16.20   | 9.10    | 5.90    | 4.80    | 5.40    | NA      |
|          | INT/XGS | 12.80  | 11.40  | 7.10   | 10.30  | 8.80    | 5.70    | 10.90   | 4.80    | 4.00    | 2.20    | 2.50    | NA      |
|          | INT/GNP | 2.00   | 1.50   | 0.90   | 1.30   | 1.10    | 0.60    | 1.30    | 0.50    | 0.40    | 0.10    | 0.20    | NA      |
| Tanzania | EDT/XGS | 427.60 | 618.10 | 607.90 | 859.00 | 1040.60 | 1117.60 | 1127.10 | 971.30  | 1130.50 | 1174.60 | 1110.90 | 1218.80 |
|          | EDT/GNP | 58.00  | 48.20  | 53.40  | 54.60  | 102.90  | 175.30  | 194.10  | 229.30  | 289.10  | 239.90  | 285.20  | NA      |
|          | TDS/XGS | 28.70  | 36.80  | 22.20  | 37.10  | 43.00   | 41.40   | 41.80   | 34.20   | 38.40   | 36.00   | 46.20   | 25.10   |
|          | INT/XGS | 14.10  | 16.40  | 10.20  | 11.70  | 16.90   | 17.70   | 18.60   | 13.70   | 13.40   | 9.90    | 12.30   | 11.50   |
|          | INT/GNP | 1.90   | 1.30   | 0.90   | 0.70   | 1.70    | 2.80    | 3.20    | 3.20    | 3.40    | 2.00    | 3.20    | NA      |
| Uganda   | EDT/XGS | 212.40 | 300.70 | 273.20 | 352.00 | 357.20  | 531.70  | 628.60  | 819.10  | 1196.60 | 1456.00 | 1507.80 | 1227.20 |
|          | EDT/GNP | 55.70  | 67.00  | 50.00  | 62.20  | 34.80   | 44.10   | 78.10   | 75.00   | 96.40   | 111.50  | 94.90   | 77.00   |
|          | TDS/XGS | 17.30  | 24.80  | 31.40  | 43.40  | 43.10   | 43.80   | 64.00   | 67.70   | 63.60   | 69.50   | 53.00   | 121.30  |
|          | INT/XGS | 3.70   | 9.60   | 11.40  | 13.30  | 12.60   | 11.90   | 13.80   | 16.60   | 16.30   | 20.90   | 16.60   | 21.60   |
|          | INT/GNP | 1.00   | 2.10   | 2.10   | 2.30   | 1.20    | 1.00    | 1.70    | 1.50    | 1.30    | 1.60    | 1.00    | 1.40    |
| Zaire    | EDT/XGS | 198.40 | 295.30 | 256.00 | 307.60 | 353.70  | 439.30  | 362.30  | 390.50  | 444.70  | N/A     | N/A     | NA      |
|          | EDT/GNP | 34.30  | 49.40  | 70.90  | 93.10  | 95.80   | 124.80  | 102.70  | 111.90  | NA      | N/A     | N/A     | NA      |
|          | TDS/XGS | 22.60  | 13.70  | 20.10  | 24.80  | 22.40   | 23.60   | 16.60   | 25.70   | 15.00   | N/A     | N/A     | NA      |
|          | INT/XGS | 11.00  | 8.20   | 12.00  | 13.40  | 10.60   | 9.90    | 7.70    | 7.10    | 6.40    | N/A     | N/A     | NA      |
|          | INT/GNP | 1.90   | 1.40   | 3.30   | 4.10   | 2.90    | 2.80    | 2.20    | 2.00    | NA      | N/A     | N/A     | NA      |
| Zambia   | EDT/XGS | 200.70 | 370.80 | 391.80 | 534.40 | 757.40  | 717.00  | 557.10  | 443.20  | 539.40  | 621.60  | 582.00  | 638.00  |
|          | EDT/GNP | 90.70  | 123.70 | 155.40 | 229.30 | 417.30  | 377.30  | 211.80  | 187.00  | 240.80  | 242.10  | 242.50  | 231.90  |
|          | TDS/XGS | 25.30  | 29.60  | 25.30  | 16.10  | 50.90   | 18.50   | 15.50   | 13.60   | 15.10   | 51.10   | 29.50   | 32.80   |
|          | INT/XGS | 8.70   | 12.50  | 11.70  | 7.80   | 19.20   | 8.00    | 6.40    | 5.00    | 5.70    | 26.20   | 14.10   | 14.80   |
|          | INT/GNP | 3.90   | 4.20   | 4.60   | 3.40   | 10.60   | 4.20    | 2.40    | 2.10    | 2.50    | 10.20   | 5.90    | 5.40    |

Source: World Bank, World Bank Debt Tables.

Table 8. Sub-Saharan African SILICs: Schematic Summary of the Debt/Export Ratio, 1993

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|    |  |
|----|--|
| 1. | 201-400 percent<br>Nigeria, Ghana, Kenya   |
| 2. | 401-600 percent<br>Central African Republic, Côte d'Ivoire, Ethiopia, Equatorial Guinea, Mauritania, Niger, Zaire            |
| 3. | 601-800 percent<br>Mali, Rwanda, Tanzania  |
| 4. | 801-999 percent<br>Madagascar, Sierra Leone  |
| 5. | Above 1000 percent<br>Burundi, Guinea, Guinea-Bissau, Mozambique, Sao Tomé and Príncipe, Somalia, Sudan,<br>Tanzania, Uganda |

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Source: Calculated from Table 7.

Table 9. Sub-Saharan African SILICS: Indicators of External Debt Burden, 1980-93 1/  
(In percent)

|          |         | 1980   | 1983    | 1984    | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    | 1992    | 1993    |
|----------|---------|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Average  | INT/XGS | 6.16   | 10.02   | 10.17   | 11.26   | 12.29   | 11.98   | 12.04   | 12.39   | 10.10   | 9.04    | 8.22    | 7.50    |
| Average* | INT/XGS | 28.40  | 48.75   | 51.51   | 51.38   | 50.57   | 44.74   | 62.78   | 53.55   | 46.62   | 49.81   | 40.75   | 20.64   |
| Average  | EDT/XGS | 183.82 | 375.08  | 385.17  | 518.36  | 601.80  | 746.38  | 755.95  | 804.83  | 825.23  | 802.30  | 869.16  | 778.43  |
| Average+ | EDT/XGS | 482.59 | 1032.86 | 992.74  | 1160.75 | 1675.09 | 1992.47 | 2005.23 | 1817.54 | 1830.27 | 2065.22 | 1970.49 | 866.77  |
| Average* | EDT/XGS | 610.83 | 1147.63 | 1138.15 | 1423.84 | 1861.83 | 2316.04 | 2330.66 | 2293.74 | 2425.69 | 2840.38 | 2819.06 | 1528.35 |
| Average  | TDS/XGS | 13.65  | 20.42   | 21.60   | 25.76   | 30.21   | 28.55   | 27.97   | 29.24   | 24.12   | 20.88   | 20.10   | 19.80   |
| Average* | TDS/XGS | 55.85  | 96.32   | 105.94  | 118.22  | 121.99  | 100.66  | 126.72  | 113.37  | 103.86  | 98.20   | 97.53   | 56.94   |

Source: Calculated from Table 7 using GNP figures from IMF International Financial Statistics Yearbook, 1995.

Notes: \*1980 GNP weights;  
+1986 GNP weights;  
unweighted averages are without the (\*) and (+).

1/ INT/XGS = interest/exports; EDT/XGS = debt/exports; TDS/XGS = debt service ratio.



Table 10. Sub-Saharan African SILICs: Present Value Analysis  
(In percent)

|                          | Present value<br>Debt/Exports*<br>end of 1993 | NPV of Total<br>Debt Service to<br>Exports, 1993*** |
|--------------------------|---|---|
| Burundi                  | 122   | 408   |
| Central African Republic | 260   | 240   |
| Côte d'Ivoire            | 548   | 483   |
| Equatorial Guinea        | 298   | 343   |
| Ethiopia                 | 396   | 373   |
| Ghana                    | 234   | 225   |
| Guinea                   | 282   | 237   |
| Guinea-Bissau            | 1264  | 1105  |
| Kenya                    | 229   | 227   |
| Liberia                  | 290   | 227   |
| Madagascar               | 724   | 295   |
| Mali                     | 362   | 286   |
| Mauritania               | 340   | 313   |
| Mozambique               | 1147  | 1106  |
| Niger                    | 384   | 318   |
| Nigeria                  | 272   | 242   |
| Rwanda                   | 362   | 304   |
| Sao Tome Principe        | 1142  | 1049  |
| Sierra Leone             | 681   | 594   |
| Somalia                  | NA  | 3086  |
| Sudan                    | 2941  | 2750  |
| Tanzania                 | 458   | 453   |
| Uganda                   | 713   | 812   |
| Zaire                    | 752   | 616   |
| Zambia                   | 519   | 489   |

Notes: (1) \* based on 1993 exports.

(2) \*\* based on the average of 1991-93 exports

Source: IMF, World Economic and Financial Surveys, 1995 pp. 21 and 63.

Table 11. Sub-Saharan African SILICs: Ratio of Debt Service Paid to Debt Service Due, 1989-93  
(In Ratios)

|                          | 1989 | 1990 | 1991 | 1992 | 1993 |
|--------------------------|------|------|------|------|------|
| Burundi                  | 1.03 | 1.01 | 1.03 | 0.89 | 0.85 |
| Central African Republic | 0.63 | 0.62 | 0.47 | 0.39 | 0.23 |
| Côte d'Ivoire            | 0.50 | 0.51 | 0.58 | 0.59 | 0.59 |
| Equatorial Guinea        | 0.29 | 0.26 | 0.16 | 0.19 | 0.16 |
| Ethiopia                 | 0.88 | 0.54 | 0.33 | 0.26 | 0.25 |
| Ghana                    | 0.94 | 0.98 | 0.92 | 1.04 | 0.97 |
| Guinea                   | 0.39 | 0.64 | 0.58 | 0.29 | 0.37 |
| Guinea-Bissau            | 0.24 | 0.22 | 0.16 | 0.16 | 0.09 |
| Kenya                    | 1.03 | 1.04 | 0.93 | 0.88 | 0.71 |
| Liberia                  | 0.04 | 0.01 | 0.09 | 0.02 | 0.29 |
| Madagascar               | 0.65 | 0.61 | 0.39 | 0.18 | 0.16 |
| Mali                     | 0.71 | 0.45 | 0.17 | 0.26 | 0.19 |
| Mauritania               | 0.52 | 0.71 | 0.49 | 0.34 | 0.35 |
| Mozambique               | 0.26 | 0.10 | 0.14 | 0.12 | 0.19 |
| Niger                    | 0.68 | 0.60 | 0.68 | 0.37 | 0.55 |
| Nigeria                  | 0.36 | 0.58 | 0.57 | 0.60 | 0.36 |
| Rwanda                   | 1.11 | 0.97 | 1.00 | 0.89 | 0.21 |
| Sao Tome & Principe      | 0.42 | 0.28 | 0.22 | 0.28 | 0.18 |
| Sierra Leone             | 0.07 | 0.18 | 0.20 | 0.16 | 0.40 |
| Somalia                  | 0.19 | 0.04 | 0.00 | 0.00 | 0.00 |
| Sudan                    | 0.03 | 0.03 | 0.02 | 0.05 | 0.03 |
| Tanzania                 | 0.47 | 0.42 | 0.35 | 0.40 | 0.26 |
| Uganda                   | 0.59 | 0.53 | 0.53 | 0.49 | 0.89 |
| Zaire                    | 0.37 | 0.29 | 0.14 | 0.08 | 0.03 |
| Zambia                   | 0.28 | 0.18 | 0.73 | 0.54 | 0.58 |

Source: World Bank, World Debt Tables, 1994-95.

Table 12. Sub-Saharan African SILICs: Fiscal Sustainability, 1994  
(In Ratios)

|                         | Scheduled External Debt Service Relative to: |                                |
|-------------------------|--|--------------------------------|
|                         | Government Revenue                           | Government Current Expenditure |
| Burundi                 | 0.33   | 0.31                           |
| Central Africa Republic | 0.68   | 0.39                           |
| Côte d'Ivoire           | 0.91   | 0.78                           |
| Equatorial Guinea       | 1.11   | 1.05                           |
| Ethiopia                | 0.31   | 0.30                           |
| Ghana                   | 0.29   | 0.37                           |
| Guinea                  | 0.74   | 0.82                           |
| Guinea-Bissau           | 1.44   | 1.23                           |
| Kenya                   | 0.29   | 0.36                           |
| Liberia                 | NA   | NA                             |
| Madagascar              | 1.66   | 1.0                            |
| Mali                    | 0.75   | 0.65                           |
| Mauritania              | 0.87   | 1.13                           |
| Mozambique              | 1.83   | 1.41                           |
| Niger                   | 1.10   | 0.52                           |
| Nigeria                 | 1.05   | 0.75                           |
| Rwanda                  | 0.80   | 0.22                           |
| Sao Tome Principe       | 1.83   | 0.78                           |
| Sierra Leone            | 1.11   | 0.99                           |
| Somalia                 | NA   | NA                             |
| Sudan                   | 1.89   | 1.96                           |
| Tanzania                | 0.74   | 0.62                           |
| Uganda                  | 0.31   | 0.33                           |
| Zaire                   | 6.08   | 6.24                           |
| Zambia                  | 1.86   | 1.52                           |

Source: IMF, World Economic and Financial Surveys: Official Financing for Developing Countries, 1995, pp. 71, 73.

Table 13. Sub-Saharan African SILICs: Capital Flight Estimates-Mirror Stock Statistics Estimates, 1982-94 <sup>1/</sup>  
(In millions of U.S. dollars)

|                      | 1982      | 1983     | 1984      | 1985     | 1986     | 1987      | 1988      | 1989      | 1990     | 1991       | 1992      | 1993       | 1994      |
|----------------------|-----------|----------|-----------|----------|----------|-----------|-----------|-----------|----------|------------|-----------|------------|-----------|
| Burundi              | 27.5945   | 9.7692   | 2.2259    | 3.4462   | 50.7613  | -36.9943  | 0.4107    | 2.3773    | 49.5395  | -5.6542    | -3.7874   | -2.0000    | 17.0000   |
| C.A.R.               | 20.0000   | 0.0000   | 1.0000    | 5.8387   | 7.1613   | 15.0835   | 9.7952    | -3.8788   | 11.0000  | 1.0000     | 12.0000   | 6.0000     | 1.0000    |
| Zaire                | 97.4921   | 28.0178  | 30.5954   | 68.3474  | 101.7831 | 196.7891  | 42.9440   | 272.0480  | 339.2010 | -176.2514  | -71.4684  | -215.6172  | 61.9173   |
| Equa. Guinea         | 4.0000    | 1.0000   | -4.0000   | 1.0000   | 3.0000   | 7.0000    | -4.0000   | 2.0000    | 8.0000   | -3.0000    | 5.9091    | 7.0552     | -2.1181   |
| Ethiopia             | 104.2273  | 1.5054   | 7.2430    | -15.4323 | -1.8020  | 24.4044   | 39.1324   | 26.4307   | 38.8424  | -3.7074    | 6.0768    | 9.4183     | -22.4952  |
| Ghana                | 205.4468  | -31.6563 | 16.9933   | 33.6692  | 4.4533   | 17.2690   | 27.5491   | 32.5752   | 62.7421  | -9.1968    | 37.8081   | -52.8108   | -6.6075   |
| Guinea Bissau        | 1.0000    | 1.0000   | -2.0000   | 1.0000   | 1.0000   | 1.0000    | 4.0000    | 4.0000    | 5.0000   | -5.0000    | 7.0000    | -2.0000    | 2.0000    |
| Guinea               | 0.0000    | 25.2381  | 1.2546    | 12.1072  | 7.3219   | 59.7123   | -43.8569  | 2.9226    | 20.8058  | 9.0113     | 7.8121    | 4.9739     | -6.4127   |
| Côte d'Ivoire        | 354.4266  | -83.4951 | -16.5867  | 235.5861 | 6.6681   | 206.9012  | -87.3726  | 374.6960  | 303.8568 | -277.6175  | 24.6763   | -67.0471   | 250.5951  |
| Kenya                | 1103.1216 | -58.7244 | -79.7892  | 372.1562 | 137.8193 | 345.0127  | -33.8078  | 198.8087  | 630.6839 | -109.7336  | -305.7613 | -145.6261  | 54.5740   |
| Liberia              | 2123.0907 | 321.8050 | 72.4754   | 886.9381 | 782.9466 | 1988.4100 | 1916.9931 | 3224.1917 | 943.2640 | -1458.8060 | -111.2041 | -1557.4665 | -329.6757 |
| Madagascar           | 0.0000    | 111.7197 | -3.5816   | 24.2730  | 41.7032  | 41.0070   | -6.9996   | 69.7612   | 37.3569  | 15.2477    | 22.0191   | -70.6542   | 102.7583  |
| Mali                 | 17.2558   | 34.5116  | -29.0000  | 17.0000  | -4.0000  | 24.0000   | -9.0000   | 21.9999   | 39.0000  | -24.0000   | 1.0000    | -25.0000   | 5.0000    |
| Mauritania           | 53.1581   | 16.7486  | -29.0946  | -11.2548 | 20.7985  | -9.5679   | 43.0496   | -33.2927  | 53.5487  | -6.0787    | -12.0146  | 8.0000     | 28.0000   |
| Mozambique           | 54.2817   | -3.3915  | -6.7606   | 0.3858   | 10.7716  | 22.6279   | -18.1137  | 34.6054   | 14.7707  | -1.3235    | -2.7553   | 27.5648    | -15.3220  |
| Niger                | 72.5102   | -36.2497 | -5.7891   | 25.8904  | 9.6802   | -7.6368   | -6.8389   | 36.8454   | 34.8946  | -51.2035   | -1.6018   | 5.1308     | -3.4717   |
| Nigeria              | 1078.7191 | 0.0000   | -209.2962 | 329.2961 | 178.5507 | 622.5653  | -339.7045 | 697.9933  | 871.3322 | -59.5932   | -526.4912 | 423.3055   | 54.0190   |
| Rwanda               | 16.7449   | 4.6171   | 7.4022    | 20.4287  | 18.7448  | 31.8451   | -0.8208   | 46.7952   | 49.3802  | 14.7722    | 42.3212   | -38.2904   | -3.1488   |
| S. Tomé and Príncipe | 0.0000    | 0.0000   | 0.0000    | 0.0000   | 0.0000   | 0.0000    | 0.0000    | 0.0000    | 3.0000   | -2.0000    | 9.0000    | -4.0000    | 0.0000    |
| Sierra Leone         | 77.9444   | -16.1311 | 1.9549    | 122.1853 | -77.4627 | 6.5091    | -10.1122  | 236.8828  | 83.5211  | -284.5597  | -16.1120  | -7.7854    | 9.8433    |
| Somalia              | 45.3777   | 17.8475  | 2.0438    | 18.8800  | 3.4255   | 17.8245   | -12.8739  | 24.9901   | 38.7302  | -23.7847   | -52.7739  | -10.0000   | -13.0000  |
| Sudan                | 365.0858  | 57.0174  | -35.6645  | 186.5677 | -14.0864 | 64.0811   | -14.3268  | 52.4051   | 112.2841 | -116.0793  | -78.1697  | -99.9628   | -72.9672  |
| Uganda               | 76.1437   | 23.6856  | 3.1338    | 19.1187  | 21.8706  | 30.2621   | -5.7842   | -11.6442  | 25.9712  | 7.5704     | -28.9481  | -6.9795    | 47.9625   |
| Zambia               | 223.9008  | 11.0309  | -32.1637  | 154.5819 | -79.7285 | 75.3987   | 48.2247   | 12.5681   | 6.6245   | 17.6857    | -25.3834  | -70.3793   | 23.2584   |

Source: IMF, International Financial Statistics Yearbook, 1995.

<sup>1/</sup> Calculated as yearly differences in cross-border deposits of nonbanks by residence of depositor.

Table 14. Sub-Saharan African SILICs: Capital Flight Estimates-Hot Money Method I, 1980-92 <sup>1/</sup>  
(In millions of U.S. dollars)

|                       | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | SUM   |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Burundi               | NA   | NA   | NA   | NA   | NA   | 10   | 21   | 39   | 10   | 23   | 27   | 11   | 28   | 25   | 194   |
| Central African Rep.  | 12   | 18   | -2   | 1    | 1    | 17   | 5    | 16   | 9    | 14   | 16   | 15   | 20   | NA   | 142   |
| Côte d'Ivoire         | 44   | 91   | 28   | 156  | 127  | -99  | 51   | -9   | 40   | 34   | 97   | -53  | -35  | -61  | 411   |
| Ethiopia              | 35   | 16   | -7   | 52   | 150  | 172  | -202 | 183  | 94   | 17   | 148  | 282  | 86   | -103 | 923   |
| Equatorial Guinea     | NA   | NA   | NA   | NA   | NA   | NA   | NA   | -1   | 2    | 5    | 2    | 31   | NA   | NA   | 39    |
| Ghana                 | 100  | -24  | 33   | 126  | 133  | -63  | 81   | 19   | -38  | -76  | -70  | -50  | 53   | 36   | 260   |
| Guinea Bissau         | NA   | NA   | 9    | 5    | 13   | 10   | 4    | 8    | -4   | 12   | 2    | 16   | -22  | 16   | 69    |
| Kenya                 | -10  | -42  | -32  | 37   | -2   | 30   | 19   | -106 | -32  | -38  | -64  | -36  | -110 | -483 | -869  |
| Mali                  | 25   | -27  | -13  | 7    | -1   | 18   | 16   | -2   | 2    | 2    | -1   | -29  | 23   | -23  | -3    |
| Mauritania            | 32   | 7    | -5   | -11  | 9    | 12   | 16   | 85   | 25   | 7    | -143 | -213 | -226 | -144 | -549  |
| Mozambique            | 30   | 70   | 42   | -9   | -26  | 13   | 29   | -40  | -85  | -57  | -66  | 4    | -32  | NA   | -127  |
| Niger                 | 35   | 19   | 7    | 9    | -14  | -27  | 66   | 15   | -43  | 4    | 25   | 40   | 3    | 16   | 155   |
| Nigeria               | 606  | 191  | -8   | -87  | -272 | 3829 | 1226 | 1731 | 957  | 124  | 561  | 1637 | 3048 | 96   | 13639 |
| Rwanda                | -3   | -22  | -7   | -12  | -4   | 19   | -1   | -11  | -11  | -9   | -43  | -20  | -37  | NA   | -161  |
| São Tomé and Príncipe | 0    | -7   | 1    | -5   | 7    | -6   | -2   | 0    | 0    | 1    | 3    | NA   | NA   | NA   | -8    |
| Sierra Leone          | 22   | 46   | -85  | 31   | 20   | 17   | -20  | 20   | 26   | -47  | -27  | -1   | NA   | NA   | 2     |
| Somalia               | -2   | -19  | -75  | 4    | -23  | -15  | -19  | -40  | -22  | 1    | NA   | NA   | NA   | NA   | -210  |
| Sudan                 | -58  | -15  | -13  | -145 | 2    | 125  | 89   | 195  | -3   | 160  | -9   | -98  | -31  | NA   | 199   |
| Tanzania              | 47   | -79  | -58  | 62   | -127 | 40   | 40   | -94  | 42   | -19  | -217 | 20   | -45  | 19   | -369  |
| Uganda                | 65   | 38   | 25   | 37   | -25  | 12   | -105 | -26  | -155 | 38   | -10  | -1   | -11  | -43  | -161  |
| Zaire                 | 34   | NA   | 30   | -32  | 23   | 1    | 17   | -13  | 134  | -113 | -105 | NA   | NA   | NA   | -24   |
| Zambia                | -47  | 168  | 80   | -205 | 100  | 155  | -289 | -161 | 63   | 1673 | -280 | -115 | NA   | NA   | 1142  |

Source: Calculated from IMF, *Balance of Payments Yearbook*, 1995.

- <sup>1/</sup> HM1 = -(g+C1)  
 HM1 = Hot Money Method I.  
 g = net errors and omissions in the BOP statistics.  
 C1 = other assets.

Table 15. Sub-Saharan African SILICs: Capital Flight Estimates- Hot Money Method II, 1980-93 1/  
(In millions of U.S. dollars)

|                   | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | SUM   |
|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Burundi           | NA   | NA   | NA   | NA   | NA   | -1   | -6   | 23   | 2    | 13   | 0    | -9   | 10   | 7    | 39    |
| Central African   | 1    | 15   | -4   | -3   | -5   | 14   | 2    | 20   | 16   | 11   | 13   | 21   | 20   | NA   | 121   |
| Côte d'Ivoire     | 0    | 63   | -14  | 229  | 128  | -88  | 49   | -42  | 26   | 29   | 180  | -88  | 22   | -44  | 450   |
| Ethiopia          | -36  | -20  | -27  | 79   | 116  | 121  | -202 | 183  | 94   | 5    | 67   | 285  | 32   | -65  | 632   |
| Equatorial Guinea | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 3    | 10   | 8    | 4    | 35   | NA   | NA   | 60    |
| Ghana             | 178  | -136 | -1   | -7   | 87   | -4   | 142  | 68   | -23  | -47  | -61  | -26  | 104  | -80  | 194   |
| Guinea Bissau     | NA   | NA   | 9    | 5    | 13   | 10   | 4    | 8    | -4   | 12   | 2    | 16   | -22  | 16   | 69    |
| Kenya             | -151 | -86  | -75  | -1   | -68  | -79  | -71  | -170 | -92  | -120 | -215 | -52  | -110 | -500 | -1790 |
| Mali              | 25   | -27  | -13  | 7    | -1   | 18   | 16   | -2   | 2    | 2    | -1   | -29  | 23   | -23  | -3    |
| Mauritania        | 29   | -21  | -20  | -19  | 5    | 8    | 2    | 79   | 11   | 11   | 61   | -10  | -53  | 50   | 133   |
| Mozambique        | 30   | 70   | 42   | -9   | -26  | 13   | 29   | -40  | -85  | -57  | -66  | 4    | -32  | NA   | -127  |
| Niger             | 44   | 47   | -49  | -2   | -13  | -26  | 90   | -8   | -43  | 4    | 25   | 40   | 3    | 16   | 128   |
| Nigeria           | 681  | -129 | -698 | -965 | -317 | 3643 | 1022 | 164  | 1021 | 104  | 580  | -601 | 2625 | -642 | 6488  |
| Rwanda            | -20  | -27  | -6   | 7    | -1   | 8    | -15  | -11  | 2    | -8   | -11  | -32  | -37  | NA   | -151  |
| Sao Tome Principe | 13   | -9   | 1    | -5   | 7    | -6   | -2   | -5   | -4   | -2   | 6    | NA   | NA   | NA   | -6    |
| Sierra Leone      | -27  | 29   | -99  | 8    | 31   | 5    | -81  | 45   | 26   | -63  | -36  | -15  | NA   | NA   | -177  |
| Somalia           | -2   | -19  | -75  | 4    | -23  | -15  | -19  | -40  | -22  | 1    | NA   | NA   | NA   | NA   | -210  |
| Sudan             | -58  | -15  | -13  | -146 | 2    | 125  | 89   | 195  | -3   | 160  | -9   | -98  | -31  | NA   | 198   |
| Tanzania          | -14  | -133 | -84  | -40  | -237 | 72   | 96   | -99  | 37   | -17  | -216 | 11   | -62  | -2   | -688  |
| Uganda            | 59   | 58   | 25   | 37   | -25  | -20  | -117 | 22   | -125 | 79   | 10   | 21   | 1    | 18   | 43    |
| Zaire             | 34   | 15   | 30   | -32  | 23   | 1    | 17   | -13  | 134  | -113 | -105 | NA   | NA   | NA   | -9    |
| Zambia            | -209 | 173  | -135 | -98  | 44   | 125  | -162 | -188 | 24   | -112 | 102  | -295 | NA   | NA   | -731  |

Source: Calculated from the IMF, Balance of Payments Yearbook, 1995.

- 1/  $HM_2 = -(g+C)$ .  
 $HM_2$  = Hot Money Method II.  
g = Net errors and omissions in the BOP Statistics.  
C = other short-term capital of other sectors.

Table 16. Sub-Saharan African SILICs:Capital Flight Estimates- Hot Money Method III, 1980-93 <sup>1/</sup>  
(In millions of U.S. dollars)

|                   | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | SUM   |
|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| Burundi           | NA   | NA   | NA   | NA   | NA   | -1   | -6   | 23   | 2    | 13   | 0    | -9   | 10   | 7    | 39    |
| Central African   | 1    | 15   | -4   | -3   | -5   | 14   | 2    | 20   | 16   | 11   | 13   | 21   | 20   | NA   | 121   |
| Côte d'Ivoire     | -1   | 61   | -15  | 226  | 129  | -86  | 50   | -33  | 53   | 25   | 180  | -88  | 22   | -44  | 479   |
| Ethiopia          | -36  | -20  | -27  | 79   | 116  | 121  | -202 | 183  | 94   | 5    | 67   | 285  | 32   | -65  | 632   |
| Equatorial Guinea | NA   | NA   | NA   | NA   | NA   | NA   | NA   | 3    | 10   | 8    | 4    | 35   | NA   | NA   | 60    |
| Ghana             | 178  | -136 | -1   | -7   | 87   | -4   | 142  | 68   | -23  | -47  | -61  | -26  | 104  | -80  | 194   |
| Guinea Bissau     | NA   | NA   | 9    | 5    | 13   | 10   | 4    | 8    | -4   | 12   | 2    | 16   | -22  | -44  | 9     |
| Kenya             | -152 | -86  | -74  | -1   | -68  | -79  | -71  | -170 | -92  | -120 | -216 | -52  | -110 | -500 | -1791 |
| Mali              | 25   | -27  | -13  | 7    | -1   | 18   | 16   | -2   | 2    | 2    | -1   | -29  | 23   | -23  | -3    |
| Mauritania        | 29   | -21  | -20  | -19  | 6    | 8    | 3    | 79   | 11   | 11   | 61   | -10  | -53  | 50   | 135   |
| Mozambique        | 30   | 70   | 42   | -9   | -26  | 13   | 29   | -40  | -85  | -57  | -66  | 4    | -32  | NA   | -127  |
| Niger             | 45   | 48   | -49  | -2   | -13  | -26  | 90   | -8   | -43  | 4    | 25   | 40   | 3    | 16   | 130   |
| Nigeria           | 681  | -129 | -699 | -966 | -317 | 3643 | 1022 | 164  | 1021 | 104  | 580  | -601 | 2625 | -642 | 6486  |
| Rwanda            | -21  | -29  | -6   | 7    | -1   | 8    | -15  | -11  | 2    | -8   | -10  | -32  | -37  | NA   | -153  |
| Sao Tome Principe | 13   | -9   | 1    | -5   | 7    | -6   | -2   | -5   | -4   | -2   | 6    | NA   | NA   | NA   | -6    |
| Sierra Leone      | -27  | 28   | -99  | 8    | 31   | 5    | -81  | 45   | 26   | -63  | -36  | -15  | NA   | NA   | -178  |
| Somalia           | -3   | -19  | -75  | 4    | -23  | -15  | -19  | -40  | -22  | 1    | NA   | NA   | NA   | NA   | -211  |
| Sudan             | -58  | -14  | -13  | -145 | 2    | 125  | 89   | 195  | -3   | 160  | -9   | -98  | -31  | NA   | 200   |
| Tanzania          | -14  | -133 | -84  | -40  | -237 | 72   | 96   | -99  | 37   | -17  | -216 | 11   | -62  | -2   | -688  |
| Uganda            | 59   | 58   | 25   | 37   | -25  | -20  | -117 | 22   | -125 | 79   | 10   | 21   | 1    | 18   | 43    |
| Zaire             | 34   | 15   | 30   | -32  | 23   | 1    | 17   | -13  | 134  | -133 | -105 | NA   | NA   | NA   | -29   |
| Zambia            | -209 | 173  | -135 | -98  | 44   | 125  | -162 | -188 | 24   | -112 | 101  | -295 | NA   | NA   | -732  |

Source: Data calculated from IMF, Balance of Payments Yearbook, 1995.

- <sup>1/</sup>  $HM_3 = -(g+c+e_1+e_2)$   
 $HM_3$  = Hot Money Method III.  
g = net errors and omissions in the BOP Statistics.  
c = other short-term capital of other sectors.  
 $e_1$  = other bonds  
 $e_2$  = corporate equities.

Table 17. Sub-Saharan African SILICs: Capital Flight Estimates- The Residual Approach, 1980-91 1/  
(In millions of US dollars)

|               |     | 1980    | 1981     | 1982     | 1983    | 1984    | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991   |
|---------------|-----|---------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|--------|
| Burundi       | KF1 | 58.90   | 18.00    | 46.00    | 82.00   | 55.00   | 12.00   | 48.00   | 88.00   | 16.00   | 19.50   | -69.60  | 120.20 |
|               | KF2 | 68.41   | -15.20   | 16.19    | 75.45   | 46.79   | 38.74   | 112.60  | 80.66   | 32.65   | 88.74   | -68.38  | 92.94  |
| C.A.R.        | KF1 | 46.90   | 42.30    | 6.00     | -13.00  | -26.00  | 6.70    | 28.80   | 59.10   | -23.10  | -44.30  | -79.40  | 87.80  |
|               | KF2 | 63.77   | 68.59    | -33.90   | -16.58  | -14.11  | -26.36  | 44.53   | 99.48   | 5.64    | -25.11  | -83.73  | 64.75  |
| Côte d'Ivoire | KF1 | 2450.10 | -1614.00 | -1208.00 | 842.00  | 255.00  | 436.00  | 553.00  | 672.00  | 673.00  | -554.00 | 725.00  | 167.00 |
|               | KF2 | 2149.80 | -1999.90 | -1391.60 | 736.50  | 173.70  | 448.30  | 663.90  | 800.30  | 774.50  | -423.40 | 616.00  | 366.40 |
| Ethiopia      | KF1 | 90.10   | -33.00   | 31.00    | -21.00  | 63.00   | 370.00  | -83.00  | 355.00  | 299.00  | 34.00   | -120.50 | 638.20 |
|               | KF2 | 7.10    | 248.60   | -154.90  | -111.90 | -67.60  | 642.70  | 118.50  | 140.20  | 199.50  | 41.90   | -148.40 | 608.20 |
| Ghana         | KF1 | 642.00  | -267.00  | -182.00  | 341.00  | 359.00  | -102.00 | 476.00  | 308.00  | -141.00 | 54.00   | 65.00   | 165.00 |
|               | KF2 | 408.30  | -339.80  | -189.70  | 63.90   | 470.80  | 144.90  | 494.50  | 45.10   | -7.80   | 156.00  | -169.50 | 652.70 |
| Guinea Bissau | KF1 | 77.30   | 15.80    | 0.60     | 8.60    | 26.50   | -17.80  | -5.80   | 77.50   | 20.50   | 3.40    | 39.70   | 23.26  |
|               | KF2 | 77.30   | 13.80    | -15.40   | -4.40   | 22.50   | -0.80   | -0.31   | 87.32   | 38.16   | 0.27    | 42.08   | 9.76   |
| Kenya         | KF1 | 1052.60 | -547.00  | 229.00   | 112.00  | -275.00 | -23.00  | 282.00  | 514.00  | 450.00  | -942.00 | 625.00  | 154.10 |
|               | KF2 | 1953.00 | -10.20   | 532.80   | 805.70  | 558.80  | 710.40  | 1217.90 | 1165.10 | 920.50  | -290.70 | 1018.00 | 430.50 |
| Liberia       | KF1 | 314.10  | 241.00   | 199.00   | 85.00   | 112.00  | 298.00  | 207.00  | 220.00  | -184.00 |         |         |        |
|               | KF2 | 239.60  | 200.12   | 116.90   | 64.91   | 77.10   | 298.01  | 201.14  | 217.85  | -188.13 |         |         |        |
| Madagascar    | KF1 | 12.50   | 98.00    | 54.00    | -18.00  | -117.00 | 123.00  | 352.00  | 364.00  | 252.00  | -421.00 | -41.00  | 232.00 |
|               | KF2 | 24.60   | 112.40   | 2.50     | -14.80  | -76.30  | 88.50   | 473.10  | 476.70  | 365.50  | -371.40 | -339.20 | 237.80 |
| Mali          | KF1 | 161.20  | 13.00    | -54.00   | 39.00   | 189.00  | -109.00 | 178.00  | 111.00  | 111.00  | -138.00 | 23.40   | 119.50 |
|               | KF2 | 155.70  | 7.90     | -83.70   | 20.50   | 208.40  | -113.10 | 132.80  | 120.50  | 209.20  | -14.20  | 136.10  | 449.40 |
| Mauritania    | KF1 | 76.10   | -42.00   | -40.00   | -59.00  | -73.00  | 189.00  | 99.00   | 217.00  | -271.00 | -60.50  | 208.10  | 65.60  |
|               | KF2 | 96.30   | -1.10    | -85.70   | -112.20 | -106.40 | 145.70  | 61.00   | 225.60  | -306.20 | -3.70   | 175.80  | 85.10  |



Table 17. Sub-Saharan African SILICs: Capital Flight Estimates- The Residual Approach, 1980-91 (continued)  
(In millions of US dollars)

|                        |     | 1980     | 1981     | 1982     | 1983    | 1984    | 1985    | 1986    | 1987    | 1988    | 1989    | 1990    | 1991    |
|------------------------|-----|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Mozambique             | KF1 | -335.00  | -340.00  | -356.00  | -400.00 | -331.00 | 2377.00 | 198.00  | 275.00  | 149.00  | -272.20 | -303.90 | -210.50 |
|                        | KF2 | -367.00  | -407.00  | -497.00  | -415.00 | -258.50 | 2347.58 | 231.72  | 313.87  | 173.75  | -284.04 | -264.90 | -228.90 |
| Niger                  | KF1 | 406.20   | 3.00     | -207.00  | -46.00  | -33.00  | -5.00   | 276.00  | 87.00   | 181.00  | -369.00 | 106.10  | -124.50 |
|                        | KF2 | 414.40   | -12.60   | -338.70  | -33.40  | 40.50   | 49.70   | 332.80  | 164.30  | 190.60  | -406.80 | 104.20  | -127.50 |
| Nigeria                | KF1 | 5738.40  | 2260.00  | -3956.00 | 2518.00 | 76.00   | 1416.00 | 4692.00 | 6385.00 | 5572.00 | 1497.00 | 2890.00 | 3498.00 |
|                        | KF2 | 14762.40 | -8695.00 | -8309.00 | 1363.00 | 980.00  | 2206.00 | 3518.00 | 6285.00 | 4428.00 | 3766.00 | 7707.00 | 4504.00 |
| Rwanda                 | KF1 | 11.80    | -5.00    | -2.00    | -59.80  | -22.80  | -22.70  | -21.00  | -62.10  | -67.30  | -63.50  | -123.90 | -81.40  |
|                        | KF2 | 73.06    | 119.90   | 160.00   | 133.19  | 176.06  | 209.83  | 272.00  | 403.49  | 94.23   | -18.43  | 233.35  | 234.02  |
| São Tomé<br>& Príncipe | KF1 | 36.50    | 0.90     | -19.60   | -1.00   | 2.10    | -5.30   | -3.70   | 5.80    | 7.60    | 20.40   | 6.70    | 21.70   |
|                        | KF2 |          |          |          |         |         |         |         |         |         |         |         |         |
| Sierra Leone           | KF1 | -20.5    | -11.7    | -32      | 18.1    | -5      | 0.9     | 101.6   | 140.7   | 69.4    | -46     | 14.4    | 134.1   |
|                        | KF2 | -36.6    | -26.3    | -49.6    | 19.9    | -40.5   | 14.8    | 125.3   | 136.7   | 79.2    | -43     | 29.7    | 157.4   |
| Somalia                | KF1 | -33.10   | 328.00   | -51.00   | 111.00  | -22.00  | -34.00  | 8.00    | 38.00   | 78.00   | -73.00  |         |         |
|                        | KF2 | -109.30  | 328.10   | -59.20   | 77.70   | -19.20  | -106.50 | 92.30   | 29.50   | 103.00  | -58.90  |         |         |
| Sudan                  | KF1 | 1784.60  | 788.00   | 736.00   | 291.00  | 1158.00 | 173.00  | 471.00  | 1212.00 | 1191.20 | 1453.20 | 488.10  | 58.00   |
|                        | KF2 | 1348.90  | 678.30   | 698.50   | 10.00   | 1044.70 | 73.00   | 686.30  | 1268.20 | 1050.40 | 1420.80 | 1020.50 | 50.40   |
| Tanzania               | KF1 | 908.60   | -57.00   | -272.00  | -266.0  | -158.00 | -315.0  | 218.00  | 354.00  | 577.00  | -463.00 | -275.00 |         |
|                        | KF2 | 730.90   | -10.50   | -331.00  | -244.40 | 4.50    | -294.90 | 310.10  | 286.70  | 635.90  | -482.50 | 4.60    |         |
| Uganda                 | KF1 | 52.5     | 253.9    | 39.9     | 215.8   | 174.5   | 38.6    | 62.2    | 331.6   | -60.6   | -9.4    | 103.5   | 131.9   |
|                        | KF2 | -37.3    | 280.9    | 18.2     | 166     | 128.9   | 64      | 105.1   | 384.4   | -46.5   | -25.7   | 79.7    | 99.1    |

Table 17. Sub-Saharan African SILICs: Capital Flight Estimates- The Residual Approach, 1980-91 (concluded)  
(In millions of US dollars)

|        |     | 1980   | 1981    | 1982    | 1983   | 1984    | 1985    | 1986   | 1987   | 1988   | 1989    | 1990    | 1991  |
|--------|-----|--------|---------|---------|--------|---------|---------|--------|--------|--------|---------|---------|-------|
| Zambia | KF1 | 1013.1 | -473.5  | 24.5    | -79    | 176     | -185    | 846    | 552    | 661    | -381    | -378    | -15   |
|        | KF2 | 1021.3 | -945.5  | 150.5   | -156.7 | 49.7    | 93.9    | 614.2  | 465.5  | 714.2  | -327.8  | -153.1  | 204.5 |
| Zaire  | KF1 | 875.50 | -214.00 | -737.00 | 302.00 | -196.00 | -120.00 | 552.00 | 615.00 | 270.00 | -618.00 | -177.00 |       |
|        | KF2 | 829.92 | -477.56 | -971.68 | 290.69 | -271.19 | -88.66  | 609.91 | 618.15 | 344.17 | -479.86 | -24.01  |       |

- 1/ KF1 = current account surplus/deficit + net foreign direct investment  
+ change in reserves + change in adjusted external debt  
KF2 = current account surplus/deficit + net foreign direct investment  
+ change in adjusted debt + change in total reserves minus gold  
+ changes in foreign assets of banks

(1) IMF, Balance of Payments Yearbook, several years.

(2) IMF, International Financial Statistics Yearbook, 1995.

Table 18. Sub-Saharan African SILICs: Capital flight and Other Macroeconomic Aggregates, 1991 <sup>1/</sup>

|                      | A1    | A2    | A3     | A4     | A5     | A6     | A7    | A8    | A9     | A10    |
|----------------------|-------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| Burundi              | 0.459 | 0.552 | 5.844  | 0.426  | 0.513  | 5.429  | 0.492 | 0.591 | 6.259  | 0.545  |
| Central African Rep. | 0.095 | 0.146 | 1.284  | 0.073  | 0.112  | 0.987  | 0.117 | 0.179 | 1.580  | 0.072  |
| Côte d'Ivoire        | 0.390 | 0.180 | 1.142  | 0.420  | 0.193  | 1.229  | 0.361 | 0.166 | 1.055  | 0.094  |
| Ethiopia             | 0.241 | 0.377 | 8.325  | 0.249  | 0.389  | 8.586  | 0.233 | 0.366 | 8.063  | 0.458  |
| Ghana                | 0.251 | 0.406 | 1.727  | 0.250  | 0.404  | 1.721  | 0.251 | 0.407 | 1.733  | 0.378  |
| Guinea Bissau        | 1.154 | 0.415 | 13.496 | 1.153  | 0.414  | 13.478 | 1.156 | 0.415 | 13.514 | 0.372  |
| Kenya                | 0.702 | 0.744 | 4.710  | 0.215  | 0.228  | 1.444  | 1.188 | 1.259 | 7.975  | 0.154  |
| Madagascar           | 0.373 | 0.209 | 3.055  | 0.355  | 0.199  | 2.910  | 0.391 | 0.219 | 3.201  | 0.270  |
| Mali                 | 0.397 | 0.362 | 2.646  | 0.273  | 0.249  | 1.819  | 0.521 | 0.475 | 3.473  | 0.260  |
| Mauritania           | 0.226 | 0.108 | 0.549  | 0.289  | 0.138  | 0.703  | 0.163 | 0.078 | 0.396  | 0.167  |
| Mozambique           | 0.317 | 0.084 | 2.454  | 0.359  | 0.095  | 2.780  | 0.275 | 0.073 | 2.127  | 0.167  |
| Niger                | 0.143 | 0.203 | 1.045  | 0.120  | 0.171  | 0.881  | 0.165 | 0.235 | 1.210  | -0.176 |
| Nigeria              | 1.027 | 0.945 | 2.654  | 1.028  | 0.946  | 2.657  | 1.026 | 0.944 | 2.651  | 1.053  |
| Rwanda               | 0.484 | 0.943 | 8.446  | -0.321 | -0.624 | -5.588 | 1.289 | 2.509 | 22.481 | -0.826 |
| Sierra Leone         | 0.560 | 0.293 | 2.521  | 0.558  | 0.291  | 2.510  | 0.563 | 0.294 | 2.531  | 0.472  |
| Sudan                | 1.335 | 0.605 | 17.735 | 1.366  | 0.619  | 18.156 | 1.303 | 0.591 | 17.315 | 0.752  |
| Uganda               | 0.496 | 0.443 | 6.346  | 0.519  | 0.464  | 6.639  | 0.473 | 0.423 | 6.054  | 0.589  |
| Zambia               | 0.580 | 0.240 | 2.253  | 0.585  | 0.242  | 2.272  | 0.575 | 0.238 | 2.233  | 0.186  |
| Average              | 0.513 | 0.403 | 4.791  | 0.440  | 0.280  | 3.812  | 0.586 | 0.526 | 5.769  | 0.277  |

<sup>1/</sup> Definitions for notations:

A1=Average Capital flight/Gross National Product

A2=Average capital flight/External Debt

A3=Average Capital flight/Exports

A4=KF1/Gross National Product

A5=KF1/External Debt

A6=KF1/Exports

A7=KF2/Gross National Product

A8=KF2/External Debt

A9=KF2/Exports

A10= Average capital flight/change in debt (Cumulative)

Sources: (1) Tables 6 and 17.

(2) IMF, International Financial Statistics Yearbook, 1995 for data on exports.

Table 19. Sub-Saharan African SILICs: Capital Flight and Other Macroeconomic Aggregates  
for Eight Major Debtors, 1991 <sup>1/</sup>

|               | A1    | A2    | A3     | A4    | A5    | A6     | A7    | A8    | A9     | A10   |
|---------------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|
| Côte d'Ivoire | 0.390 | 0.180 | 1.142  | 0.420 | 0.193 | 1.229  | 0.361 | 0.166 | 1.055  | 0.094 |
| Ethiopia      | 0.241 | 0.377 | 8.325  | 0.249 | 0.389 | 8.586  | 0.233 | 0.366 | 8.063  | 0.458 |
| Ghana         | 0.251 | 0.406 | 1.727  | 0.250 | 0.404 | 1.721  | 0.251 | 0.407 | 1.733  | 0.378 |
| Kenya         | 0.702 | 0.744 | 4.710  | 0.215 | 0.228 | 1.444  | 1.188 | 1.259 | 7.975  | 0.154 |
| Madagascar    | 0.373 | 0.209 | 3.055  | 0.355 | 0.199 | 2.910  | 0.391 | 0.219 | 3.201  | 0.270 |
| Mozambique    | 0.317 | 0.084 | 2.454  | 0.359 | 0.095 | 2.780  | 0.275 | 0.073 | 2.127  | 0.167 |
| Nigeria       | 1.027 | 0.945 | 2.654  | 1.028 | 0.946 | 2.657  | 1.026 | 0.944 | 2.651  | 1.053 |
| Sudan         | 1.335 | 0.605 | 17.735 | 1.366 | 0.619 | 18.156 | 1.303 | 0.591 | 17.315 | 0.752 |

<sup>1/</sup> / Definitions for notations:

A1=Average Capital flight/Gross National Product

A2=Average Capital flight/External Debt

A3=Average Capital flight/Exports

A4=KF1/Gross National Product

A5=KF1/External Debt

A6=KF1/Exports

A7=KF2/Gross National Product

A8=KF2/External Debt

A9=KF2/Exports

A10=Average Capital flight/Change in debt (Cumulative)

Source: As in Table 18.

Table 20. Sub-Saharan African SILICs: Capital flight and Other Macroeconomic Aggregates, 1991 1/

|                      | A1    | A2    | A3     | A4     | A5     | A6     | A7    | A8    | A9     | A10    |
|----------------------|-------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| Burundi              | 0.459 | 0.552 | 5.844  | 0.426  | 0.513  | 5.429  | 0.492 | 0.591 | 6.259  | 0.545  |
| Central African Rep. | 0.095 | 0.146 | 1.284  | 0.073  | 0.112  | 0.987  | 0.117 | 0.179 | 1.580  | 0.072  |
| Côte d'Ivoire        | 0.390 | 0.180 | 1.142  | 0.420  | 0.193  | 1.229  | 0.361 | 0.166 | 1.055  | 0.094  |
| Ethiopia             | 0.241 | 0.377 | 8.325  | 0.249  | 0.389  | 8.586  | 0.233 | 0.366 | 8.063  | 0.458  |
| Ghana                | 0.251 | 0.406 | 1.727  | 0.250  | 0.404  | 1.721  | 0.251 | 0.407 | 1.733  | 0.378  |
| Guinea Bissau        | 1.154 | 0.415 | 13.496 | 1.153  | 0.414  | 13.478 | 1.156 | 0.415 | 13.514 | 0.372  |
| Kenya                | 0.702 | 0.744 | 4.710  | 0.215  | 0.228  | 1.444  | 1.188 | 1.259 | 7.975  | 0.154  |
| Madagascar           | 0.373 | 0.209 | 3.055  | 0.355  | 0.199  | 2.910  | 0.391 | 0.219 | 3.201  | 0.270  |
| Mali                 | 0.397 | 0.362 | 2.646  | 0.273  | 0.249  | 1.819  | 0.521 | 0.475 | 3.473  | 0.260  |
| Mauritania           | 0.226 | 0.108 | 0.549  | 0.289  | 0.138  | 0.703  | 0.163 | 0.078 | 0.396  | 0.167  |
| Mozambique           | 0.317 | 0.084 | 2.454  | 0.359  | 0.095  | 2.780  | 0.275 | 0.073 | 2.127  | 0.167  |
| Niger                | 0.143 | 0.203 | 1.045  | 0.120  | 0.171  | 0.881  | 0.165 | 0.235 | 1.210  | -0.176 |
| Nigeria              | 1.027 | 0.945 | 2.654  | 1.028  | 0.946  | 2.657  | 1.026 | 0.944 | 2.651  | 1.053  |
| Rwanda               | 0.484 | 0.943 | 8.446  | -0.321 | -0.624 | -5.588 | 1.289 | 2.509 | 22.481 | -0.826 |
| Sierra Leone         | 0.560 | 0.293 | 2.521  | 0.558  | 0.291  | 2.510  | 0.563 | 0.294 | 2.531  | 0.472  |
| Sudan                | 1.335 | 0.605 | 17.735 | 1.366  | 0.619  | 18.156 | 1.303 | 0.591 | 17.315 | 0.752  |
| Uganda               | 0.496 | 0.443 | 6.346  | 0.519  | 0.464  | 6.639  | 0.473 | 0.423 | 6.054  | 0.589  |
| Zambia               | 0.580 | 0.240 | 2.253  | 0.585  | 0.242  | 2.272  | 0.575 | 0.238 | 2.233  | 0.186  |
| Average              | 0.513 | 0.403 | 4.791  | 0.440  | 0.280  | 3.812  | 0.586 | 0.526 | 5.769  | 0.277  |

## 1/ Definitions for notations:

A1=Average Capital flight/Gross National Product

A2=Average capital flight/External Debt

A3=Average Capital flight/Exports

A4=KF1/Gross National Product

A5=KF1/External Debt

A6=KF1/Exports

A7=KF2/Gross National Product

A8=KF2/External Debt

A9=KF2/Exports

A10= Average capital flight/change in debt (Cumulative)

Sources: (1) Tables 7 and 15.

(2) IMF, International Financial Statistics Yearbook, 1995 for data on exports.

Table 21. Sub-Saharan African SILICS: Categories of Trade-Faking, 1981-91

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1. Underinvoicing of Exports and Overinvoicing of Imports

Burundi, Central African Republic, Zambia

2. Overinvoicing of both exports and imports

Niger, Rwanda

3. Underinvoicing of both exports and imports

Liberia, Equatorial Guinea, Nigeria, Somalia, Tanzania, Mauritania,  
Madagascar, Mozambique, Sudan, Zaire, Sierra Leone, Uganda.

4. Overinvoicing of exports and underinvoicing of imports

Côte d'Ivoire, Ethiopia, Kenya, Sao Tome Principe, Guinea Bissau,  
Mali.

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Source: Calculated from overinvoicing of exports and imports using statistics from IMF, Direction of Trade Statistics, several years.

Table 22. Sub-Saharan SILICs: Adjusted capital Flight Estimates, 1980-91 1/  
(In millions of US dollars)

|               |      | 1980     | 1981     | 1982     | 1983     | 1984     | 1985     | 1986     | 1987     | 1988     | 1989     | 1990    | 1991    |
|---------------|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|---------|
| Burundi       | KF1* | 43.47    | -15.70   | 17.18    | 91.52    | 56.09    | 50.65    | 100.83   | 73.52    | 22.22    | -39.63   | -95.16  | 131.63  |
|               | KF2* | 52.98    | -48.90   | -12.63   | 84.97    | 47.88    | 77.39    | 165.43   | 66.12    | 38.87    | 29.61    | -93.94  | 104.37  |
| C.A.R.        | KF1* | 27.29    | 33.83    | 51.31    | -31.77   | -55.62   | -1.54    | 144.30   | 134.84   | 70.24    | 58.05    | 42.73   | 218.67  |
|               | KF2* | 44.16    | 60.12    | 11.41    | -35.35   | -43.73   | -34.60   | 160.03   | 175.22   | 98.98    | 77.24    | 38.40   | 195.62  |
| Côte d'Ivoire | KF1* | 2993.44  | -1595.80 | -885.09  | 1146.84  | 654.03   | 990.65   | 1143.29  | 1234.32  | 907.36   | 156.09   | 1606.55 | 1087.03 |
|               | KF2* | 2693.14  | -1981.70 | -1068.69 | 1041.34  | 572.73   | 1002.95  | 1254.19  | 1362.62  | 1008.86  | 286.69   | 1497.55 | 1286.43 |
| Ethiopia      | KF1* | 262.06   | -85.57   | -54.82   | -89.71   | -126.74  | 105.44   | -256.40  | 241.49   | -97.97   | -257.82  | -375.76 | 578.14  |
|               | KF2* | 432.96   | 208.43   | 175.18   | 192.29   | 71.26    | -3.56    | 87.60    | 147.49   | -135.97  | -30.82   | 5.74    | 200.94  |
| Ghana         | KF1* | 1030.45  | -61.21   | -77.53   | 484.79   | 224.47   | -235.31  | 435.23   | 347.69   | -352.36  | 243.19   | 134.87  | 209.56  |
|               | KF2* | 796.75   | -134.01  | -85.23   | 207.69   | 336.27   | 11.59    | 453.73   | 84.79    | -219.16  | 345.19   | -99.63  | 696.66  |
| Guinea Bissau | KF1* | 55.70    | 8.24     | -8.05    | 9.25     | 27.72    | -18.07   | -6.46    | 76.32    | 22.41    | 0.53     | 38.92   | 22.65   |
|               | KF2* | 55.70    | 6.24     | -24.05   | -3.75    | 23.72    | -1.07    | -0.97    | 86.14    | 40.07    | -2.60    | 41.30   | 9.15    |
| Kenya         | KF1* | 1211.69  | -568.93  | 25.49    | 76.55    | -475.82  | -232.86  | -108.82  | 79.90    | 214.73   | -1320.69 | 352.83  | 31.75   |
|               | KF2* | 2112.09  | -32.13   | 329.29   | 770.25   | 357.98   | 500.54   | 827.08   | 731.00   | 685.23   | -669.39  | 745.83  | 308.15  |
| Liberia       | KF1* | -1458.72 | -1905.73 | -2506.86 | -1939.52 | -1630.17 | -1874.20 | -1954.13 | -2164.58 | -1067.83 |          |         |         |
|               | KF2* | -1533.22 | -1946.61 | -2588.96 | -1959.61 | -1665.07 | -1874.19 | -1959.99 | -2166.73 | -1071.96 |          |         |         |
| Madagascar    | KF1* | -46.12   | 129.16   | -44.76   | -40.77   | -151.30  | 107.72   | 266.85   | 251.93   | 109.27   | -485.35  | 30.66   | 257.15  |
|               | KF2* | -34.02   | 143.56   | -96.26   | -37.57   | -110.60  | 73.22    | 387.95   | 364.63   | 222.77   | -435.75  | -267.54 | 262.95  |
| Mali          | KF1* | -337.17  | -84.40   | 105.05   | 7.64     | 126.15   | -258.93  | 198.29   | 48.68    | 46.49    | -203.40  | -24.89  | 73.93   |
|               | KF2* | -342.67  | -89.50   | 75.35    | -10.86   | 145.55   | -263.03  | 144.09   | 58.18    | 144.69   | -79.60   | 87.81   | 403.83  |
| Mauritania    | KF1* | -529.06  | -277.92  | -236.24  | -158.64  | -167.88  | 95.25    | -6.02    | 125.31   | -274.99  | -237.31  | 108.78  | 82.95   |
|               | KF2* | -508.86  | -237.02  | -281.94  | -211.84  | -201.28  | 51.95    | -44.02   | 133.91   | -310.19  | -180.51  | 76.48   | 102.45  |
| Mozambique    | KF1* | -1405.00 | -445.85  | -379.00  | -420.18  | -344.32  | 2371.53  | 195.72   | 270.78   | 148.64   | -442.27  | -302.58 | -182.14 |
|               | KF2* | -1437.00 | -512.85  | -520.00  | -435.18  | -271.82  | 2342.11  | 229.44   | 309.65   | 173.39   | -454.11  | -263.58 | -200.54 |
| Niger         | KF1* | 689.20   | 296.04   | -66.09   | 62.82    | 108.91   | 84.33    | 328.73   | 162.34   | 254.27   | -288.43  | 200.41  | -16.86  |
|               | KF2* | 697.40   | 280.44   | -197.79  | 75.42    | 182.41   | 139.03   | 385.53   | 239.64   | 263.87   | -326.23  | 198.51  | -19.86  |

Table 22. Sub-Saharan SILICs: Adjusted capital Flight Estimates, 1980-91 1/ (concluded)  
(In millions of US dollars)

|               |      | 1980     | 1981     | 1982     | 1983    | 1984     | 1985     | 1986     | 1987     | 1988     | 1989     | 1990     | 1991    |
|---------------|------|----------|----------|----------|---------|----------|----------|----------|----------|----------|----------|----------|---------|
| Nigeria       | KF1* | 5738.40  | 3479.59  | -4471.37 | 3130.42 | -1588.75 | -750.87  | -302.75  | 4335.45  | 5676.85  | 986.65   | 2777.25  | 3548.34 |
|               | KF2* | 14762.40 | -7475.41 | -8824.37 | 1975.42 | -684.75  | 39.13    | -1476.75 | 4235.45  | 4532.85  | 3255.65  | 7594.25  | 4554.34 |
| Rwanda        | KF1* | -5.99    | 27.70    | 69.86    | 20.04   | 55.43    | 56.35    | 64.30    | -6.88    | -48.80   | -32.14   | -65.37   | 18.77   |
|               | KF2* | 55.27    | 152.60   | 231.86   | 213.03  | 254.29   | 288.88   | 357.30   | 458.71   | 112.73   | 12.93    | 291.88   | 334.19  |
| S.T. Principe | KF1* | -8.53    | -0.19    | -20.95   | -1.18   | 2.74     | -2.56    | -3.60    | 8.63     | 7.27     | 21.45    | 20.22    | 19.11   |
|               | KF2* | NA       | NA       | NA       | NA      | NA       | NA       | NA       | NA       | NA       | NA       | NA       | NA      |
| Sierra Leone  | KF1* | -360.5   | -20.7    | -48      | -39.9   | -48      | -14.1    | 84.6     | 80.7     | -63.6    | -220     | -86.6    | 32.1    |
|               | KF2* | -376.4   | -35.3    | -65.6    | -38.1   | -83.5    | -0.2     | 108.3    | 76.7     | -53.8    | -217     | -71.3    | 55.4    |
| Somalia       | KF1* | -180.84  | 388.65   | -123.82  | 9.31    | -182.61  | -185.78  | -146.34  | 29.61    | 73.17    | -80.61   |          |         |
|               | KF2* | -257.04  | 388.75   | -132.02  | -23.99  | -179.81  | -258.28  | -62.04   | 21.11    | 98.17    | -66.51   |          |         |
| Sudan         | KF1* | 1382.97  | 390.27   | -35.18   | -83.27  | 1064.39  | -431.88  | 123.16   | 1026.51  | 759.23   | 1568.80  | 498.74   | 115.27  |
|               | KF2* | 947.27   | 280.57   | -72.68   | -364.27 | 951.09   | -531.88  | 338.46   | 1082.71  | 618.43   | 1536.40  | 1031.14  | 107.67  |
| Tanzania      | KF1* | 810.72   | 2.22     | -213.26  | -381.97 | -328.27  | -432.57  | 32.12    | 72.53    | 263.66   | -886.95  | -346.13  |         |
|               | KF2* | 633.02   | 48.72    | -272.26  | -360.37 | -165.77  | -412.47  | 128.22   | 5.23     | 322.56   | -906.45  | -66.53   |         |
| Uganda        | KF1* | 49.4     | 249.2    | 36.3     | 213.6   | 172.3    | 36.3     | 60.2     | 329.4    | -63.3    | -12.1    | 99.2     | 128.5   |
|               | KF2* | -544.3   | 289.9    | 18.2     | 165     | 128.9    | 67       | 106.1    | 383.4    | -47.5    | -28.7    | 79.9     | 97.1    |
| Zambia        | KF1* | 1003.1   | -806.5   | 316.5    | 188     | 186      | -301     | 946      | 648      | 735      | -467     | -837     | 115     |
|               | KF2* | 1011.3   | -1278.5  | 442.5    | 110.3   | 59.7     | -22.1    | 714.2    | 561.5    | 788.2    | -413.8   | -612.1   | 334.5   |
| Zaire         | KF1* | -274.70  | -1854.42 | -2122.00 | -450.14 | -1269.90 | -1091.04 | -513.48  | -1198.90 | -1970.72 | -1135.38 | -1231.55 |         |
|               | KF2* | -320.28  | -2117.98 | -2356.68 | -461.45 | -1345.09 | -1059.70 | -455.57  | -1195.75 | -1896.55 | -997.24  | -1078.56 |         |

Source: (1) As in Table 15.

(2) IMF, *Direction of Trade Statistics Yearbook*, several years.

1/ KF1\* = KF1 + misinvoicing (Trade faking) Adjustment.

KF2\* = KF2 + misinvoicing (Trade faking) Adjustment.



Table 23. Kenya: Growth, Debt Overhang and Capital Flight Regression Results, 1981-91

|          |   |                                   |   |          |           |            |            |            |         |  |
|----------|---|-----------------------------------|---|----------|-----------|------------|------------|------------|---------|--|
| 1. RGGNP | = | -7.912                            | + | .404GDI  | -.127FDSY | -.133CINF  | -.178PREER | +          | .057TOT |  |
|          |   | (1.768)                           |   | (2.338)  | (-.598)   | (-1.549)   | (-2.340)   |            | (1.153) |  |
|          |   | -.024DEBEX + .284TDSEX -.0007KF2  |   |          |           |            |            |            |         |  |
|          |   | (-1.421)                          |   | (2.169)  | (-.750)   |            |            |            |         |  |
| R2       | = | .967                              |   |          |           |            |            |            |         |  |
| ADJR2    | = | .834                              |   |          |           |            |            |            |         |  |
| D.W.     | = | 2.041                             |   |          |           |            |            |            |         |  |
| 2. RGGNP | = | -8.781                            | + | .412GDI  | -.145FDSY | -.119CINF  | -.168PREER | +          | .045TOT |  |
|          |   | (1.848)                           |   | (2.091)  | (-.626)   | (-1.183)   | (-2.0)     |            | (.885)  |  |
|          |   | -.021DEBEX + .257TDSEX -.0004 KF1 |   |          |           |            |            |            |         |  |
|          |   | (-1.881)                          |   | (1.897)  | (-.377)   |            |            |            |         |  |
| R2       | = | .960                              |   |          |           |            |            |            |         |  |
| ADJR2    | = | .801                              |   |          |           |            |            |            |         |  |
| D.W.     | = | 1.92                              |   |          |           |            |            |            |         |  |
| 3. RGGNP | = | 8.861                             | + | .462GDI  | -.059FDSY | -.111CINF  | -.162PREER | +          | .059TOT |  |
|          |   | (-2.313)                          |   | (2.809)  | (-.290)   | (-1.421)   | (-2.644)   |            | (1.441) |  |
|          |   | -.037DEBEX + .35TDSEX -.011HM1    |   |          |           |            |            |            |         |  |
| R2       | = | (-1.787)                          |   | 2.482)   | (-1.137)  |            |            |            |         |  |
| ADJR2    | = | .974                              |   |          |           |            |            |            |         |  |
| D.W.     | = | .870                              |   |          |           |            |            |            |         |  |
|          |   | 2.54                              |   |          |           |            |            |            |         |  |
| 4. RGGNP | = | -9.024                            | + | .492GDI  | -.109CINF | -.158PREER | +.067TOT   | -.041DEBEX |         |  |
|          |   | (-2.857)                          |   | (4.684)  | (-1.677)  | (-2.533)   | (2.553)    | (-3.043)   |         |  |
|          |   | +.373TDSEX -.012HM1               |   |          |           |            |            |            |         |  |
|          |   | (3.672)                           |   | (-1.723) |           |            |            |            |         |  |
| R2       | = | .973                              |   |          |           |            |            |            |         |  |
| ADJR2    | = | .910                              |   |          |           |            |            |            |         |  |
| D.W.     | = | 2.52                              |   |          |           |            |            |            |         |  |
| 5. RGGNP | = | -9.234                            | + | .484GDI  | -.114cINF | -.160PREER | +.064TOT   | -.027DEBEX |         |  |
|          |   | (-2.202)                          |   | (3.390)  | (-1.273)  | (-2.158)   | (1.680)    | (-1.965)   |         |  |
|          |   | +.287TDSEX -.513KF1               |   |          |           |            |            |            |         |  |
|          |   | (2.528)                           |   | (-0.619) |           |            |            |            |         |  |
| R2       | = | .953                              |   |          |           |            |            |            |         |  |
| ADJR2    | = | .842                              |   |          |           |            |            |            |         |  |
| D.W.     | = | 1.82                              |   |          |           |            |            |            |         |  |
| 6. RGGNP | = | -8.129                            | + | .466GDI  | -.133CINF | -.171PREER | +.073TOT   | -.030DEBEX |         |  |
|          |   | (-2.053)                          |   | (3.543)  | (-1.755)  | (-2.568)   | (2.028)    | (-2.300)   |         |  |
|          |   | +.309TDSEX -.882KF2               |   |          |           |            |            |            |         |  |
|          |   | (2.900)                           |   | (-1.05)  |           |            |            |            |         |  |
| R2       | = | .960                              |   |          |           |            |            |            |         |  |
| ADJR2    | = | .869                              |   |          |           |            |            |            |         |  |
| D.W.     | = | 1.99                              |   |          |           |            |            |            |         |  |

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