

# Measurement of Capital Flight: Methodology and Results for Sub-Saharan African Countries\*

Léonce Ndikumana and James K. Boyce\*\*

**Abstract:** This paper presents the methodology for the computation of capital flight and reports new estimates of the magnitude and timing of capital flight from 33 sub-Saharan African countries from 1970 to 2004. Our methodology calculates capital flight as the residual difference between inflows and outflows of foreign exchange recorded in the balance of payments, with corrections for the magnitude of external borrowing, trade misinvoicing, and unrecorded remittances. We find that total capital flight from these countries in this period amounted to \$443 billion (in 2004 dollars). With imputed interest earnings, the accumulated stock of flight capital amounted to \$640 billion. These numbers exceed these countries' external debts, which in 2004 amounted to \$193 billion, indicating that sub-Saharan Africa is a net creditor to the rest of the world.

## 1. Introduction

Over the past decades, African countries have experienced massive outflows of private capital towards Western financial centers. Indeed, these private assets surpass the continent's foreign liabilities, ironically making sub-Saharan Africa a 'net creditor' to the rest of the world (Boyce and Ndikumana, 2001). Compared to other developing regions, Africans tend to exhibit a significantly higher preference for foreign assets relative to domestic assets; hence Africa has the highest proportion of private assets held abroad (Collier *et al.*, 2001).

Capital flight from African economies constitutes a serious development challenge for several reasons. First, capital flight diverts scarce resources away from domestic investment and productive activities. Investment levels are substantially lower in African countries than other developing countries (International Finance Corporation, 1998; Ndikumana, 2000). It is estimated that if Africa were able to attract back the flight component of private wealth, the domestic private capital stock would rise by about two-thirds (Collier *et al.*, 2001). Moreover, Africa's GDP per capita is estimated to be 16 percent lower than it would be if the continent had been able to retain its private wealth at home (Collier *et al.*, 2001). Potential domestic investment gains from capital repatriation are also estimated to be very large (Fofack and Ndikumana, 2010). Obviously, only a fraction of the stock of capital flight can be repatriated for various reasons (see Ndikumana and Boyce, 2003, 2010). Given the large financing gaps faced by African countries, there is plenty of room for absorption of repatriated capital flight. Moreover, given the low inflationary pressures from the demand side following successful reforms over the past two decades, African countries have substantial absorption capacity of additional capital. The hemorrhage of financial capital is likely to be accompanied by losses of human capital, due not only to outmigration but also to missed opportunities for learning-by-doing amongst entrepreneurs and financial institutions (Nyarko, 2007).

Second, capital flight has a substantial regressive impact on wealth distribution. This is because it is the members of the subcontinent's economic and political elites that take advantage of their privileged positions to engage in capital flight by acquiring and channelling funds abroad. Capital flight involves illicit practices such as the falsification of trade documents (trade misinvoicing), the embezzlement of export revenues, and kickbacks on public and private sector contracts (see, for example, Ndikumana and Boyce, 1998). The impact of the resulting shortages of revenue and foreign exchange is borne by the poorest

---

\*The methods and estimates in this paper were presented at the Senior Policy Seminar on 'Capital Flight from Sub-Saharan Africa: Implications for Macroeconomic Management and Growth', jointly organized by the Association of African Central Bank Governors, the Reserve Bank of South Africa, and the World Bank, in collaboration with the African Development Bank, the International Monetary Fund, and the Bank of England, 30 October–2 November 2007 Pretoria, South Africa. We are grateful to the seminar participants for valuable comments and suggestions. The authors are grateful for comments and suggestions from two anonymous referees.

\*\*Léonce Ndikumana, African Development Bank, e-mail: l.ndikumana@afdb.org. James K. Boyce, University of Massachusetts, Amherst, e-mail: boyce@econs.umass.edu (corresponding author).

members of society. The regressive impact of capital flight is compounded when financial imbalances result in devaluation: the wealthy who hold external assets are insulated from the effects, while the poor enjoy no such cushion.

Third, most sub-Saharan African countries are still heavily indebted. In 2000, sub-Saharan Africa (SSA) spent 3.8 percent of GDP on debt service, compared to 2.4 percent of GDP on health in that year. At the same time, access to basic social services is still inadequate: Only 55 percent of the people in SSA have access to clean drinking water; illiteracy rates and infant mortality rates in SSA are among the highest in the world (UNECA, 2007). To the extent that a substantial fraction of external debt was used not to the benefit of the African public, but rather to finance the accumulation of private external assets by the ruling elites, the moral and legal legitimacy of these debt-service obligations is open to challenge.

This paper presents a comprehensive set of estimates of capital flight for a sample of 33 African countries over the period 1970–2004. We calculate capital flight as the residual difference between inflows and outflows of foreign exchange recorded in the balance of payments, with corrections for the magnitude of external borrowing, trade misinvoicing, and unrecorded remittances. We find that total capital flight from these countries in this period amounted to \$443 billion (in 2004 dollars). With imputed interest earnings, the accumulated stock of flight capital amounted to \$640 billion. These numbers exceed these countries' external debts, indicating that SSA is a net creditor to the rest of the world.

## 2. Methodology

The empirical literature reveals substantial amounts of capital outflows from SSA countries over the past decades. However, estimates of capital flight have varied, primarily due to differences in data and time-period coverage.<sup>1</sup> Capital flight is typically obtained as the residual difference between capital inflows (calculated from debt stocks reported in the World Bank's *Global Development Finance*) and the uses of foreign exchange reported in the IMF's *Balance-of-Payments Tables* (see, for example, World Bank, 1985; Erbe, 1985; Morgan Guaranty Trust Company, 1986; Ajayi, 1997). This measure is refined by incorporating adjustments for trade misinvoicing (Lessard and Williamson, 1987) and for the impact of exchange rate fluctuations on the dollar value of external debt (Boyce and Ndikumana, 2001).

In this paper, two further innovations are included in the method of computation of capital flight. First, the change in debt is adjusted to account for debt write-offs. Debt write-offs reduce the stock of debt although they have no corresponding flow of debt service. As a result, debt service is overstated while capital inflows obtained as the change in annual debt stocks over consecutive years are understated. Second, we include an adjustment for underreporting of remittances.

We define capital flight ( $KF$ ) as the difference between total capital inflows and recorded foreign exchange outflows. In a given year  $t$  for a country  $i$  capital flight is computed as:

$$KF_{it} = \Delta DEBTADJ_{it} + DFI_{it} - (CA_{it} + \Delta RES_{it}) \quad (1)$$

where  $\Delta DEBTADJ$  is the change in total external debt outstanding adjusted for exchange rate fluctuations (see below),  $DFI$  is net direct foreign investment,  $CA$  is the current account deficit, and  $\Delta RES$  is net additions to the stock of foreign reserves.

### 2.1 Adjustment for Exchange Rate Fluctuations

To correct for potential discrepancies due to exchange rate fluctuations, we adjust the change in the long-term debt stock for fluctuations in the exchange rate of the dollar against other currencies. For country  $i$ , the US dollar value of the beginning-of-year stock of debt at the end-of-year exchange rate is obtained as follows:

$$\begin{aligned} NEWDEBT_{i,t-1} = & \sum_{j=1}^7 (\alpha_{ij,t-1} * LTDEBT_{i,t-1}) / (EX_{jt} / EX_{j,t-1}) \\ & + IMFCR_{i,t-1} / (EX_{SDR,t} / EX_{SDR,t-1}) + LTOTHER_{i,t-1} + LTMULT_{i,t-1} \\ & + LTUSD_{i,t-1} + STDEBT_{i,t-1} \end{aligned} \quad (2)$$

where  $LTDEBT$  is the total long-term debt;  $\alpha_{ij}$  is the proportion of long-term debt held in currency  $j$ , for each of the seven non-US currencies;<sup>2</sup>  $EX$  is the end-of-year exchange rate of the currency of denomination against the dollar (expressed as units of currency per US dollar);  $IMFCR$  is the use of IMF credit;  $LTOTHER$  is long-term debt denominated in other unspecified currencies;  $LTMULT$  is long-term debt denominated in multiple currencies;  $LTUSD$  is long-term debt denominated in US dollars;  $STDEBT$  is short-term debt; and  $DEBT$  is the total debt stock reported by the World Bank.

The exchange rate adjustment is obtained as:

$$ERADJ_t = NEWDEBT_{t-1} - DEBT_{t-1} \quad (3)$$

We then obtain the adjusted change in debt as:

$$\Delta DEBTADJ_t = \Delta DEBT_t - ERADJ_t \quad (4)$$

Since  $\Delta DEBT_t = DEBT_t - DEBT_{t-1}$ , it follows that (4) is equivalent to:

$$\Delta DEBTADJ_t = DEBT_t - NEWDEBT_{t-1} \quad (4')$$

## 2.2 Adjustment for Debt Write-offs

We adjust the change in debt to account for debt write-offs, given that they reduce the stock of debt although they have no corresponding flow of debt service. Hence, they lead to an overstatement of debt service and an understatement of the change in debt obtained as the change in annual debt stocks over consecutive years. We add the value of debt write-offs (absolute value, in 2004 dollars) to the estimated capital flight in Equation 1.

## 2.3 Adjustment for Trade Misinvoicing

We estimate trade misinvoicing by comparing the country's export and import data to those of its trading partners.<sup>3</sup> We assume that the trade data from industrialized countries are relatively accurate, and interpret the discrepancy between these and the data from their African trading partners as evidence of misinvoicing. For an individual African country  $i$  in year  $t$ , export discrepancies with the industrialized countries ( $DXIC$ ) are computed as follows:

$$DXIC_{it} = PXIC_{it} - (XIC_{it} * CIF_t) \quad (5)$$

where  $PXIC$  is the value of the industrialized countries' imports from the African country as reported by the industrialized trading partners,  $XIC$  is the African country's exports to industrialized countries as reported by the African country, and  $CIF$  is the c.i.f./f.o.b factor, representing the costs of freight and insurance.<sup>4</sup> A positive sign on  $DXIC$  indicates export underinvoicing.

Import discrepancies with the industrialized countries ( $DMIC$ ) are computed as:

$$DMIC_{it} = MIC_{it} - (PMIC_{it} * CIF_t) \quad (6)$$

where  $MIC$  is the African country's imports from industrialized countries as reported by the African country, and  $PMIC$  is the industrialized countries' exports to the African country as reported by the industrialized trading partners. A positive sign on  $DMIC$  indicates net overinvoicing of imports; a negative sign indicates net underinvoicing.

To obtain global totals, we multiply these discrepancies by the inverse of the average shares of industrialized countries in the African country's exports ( $ICXS$ ) and imports ( $ICMS$ ).<sup>5</sup> We obtain total trade misinvoicing as the sum of export discrepancies and import discrepancies:

$$MISINV_{it} = \frac{DXIC_{it}}{ICXS_i} + \frac{DMIC_{it}}{ICMS_i} \quad (7)$$

Adding trade misinvoicing to the initial estimate of capital flight from Equation 1 we obtain adjusted capital flight ( $ADJKF$ ) as:

$$ADJKF_{it} = KF_{it} + MISINV_{it} \quad (8)$$

## 2.4 Adjustment for Underreporting of Remittances

A number of SSA countries receive substantial inflows of remittances from their citizens who are working in Europe and, to a lesser extent, the United States and other industrialized countries. These inflows are often underreported in the African countries' official balance-of-payments (BoP) statistics. Officially recorded remittances enter into the BoP statistics primarily under three headings: 'workers' remittances, compensation of employees, and migrant transfers'.<sup>6</sup> Econometric analysis suggests that underreporting in the BoP statistics is particularly large in Africa, with unrecorded remittances accounting for more than half of total remittance flows (World Bank, 2006, p. 92).

Unrecorded remittance inflows have an effect on capital flight estimates analogous to that of unrecorded export earnings: the amount of foreign exchange entering the African country is greater than what is captured in the official BoP. This foreign exchange could be used to finance (recorded or unrecorded) imports, or it could enter the formal banking system and ultimately

add to the central bank's official reserves, or it could go into capital flight. Regardless of its actual use, omitting these inflows from residual-based estimates of capital flight would lead to underestimation of its true magnitude.

Alternative estimates of remittance inflows have been reported by the International Fund for Agricultural Development (IFAD, 2007). These were derived by combining data on total numbers and locations of migrant workers in 2006 with survey data, for various host-origin country pairs, on the percentage of migrants who send remittances and the average amount of these remittances. In general, these estimates support the view that the official BoP data understate the true magnitude of remittance flows, at times substantially. The IFAD estimate of the remittance inflows from industrialized countries to Nigeria in 2006 amounted to \$5.4 billion, for example, compared to the BoP measure of \$3.3 billion. In Angola, to take another example, the IFAD estimate shows an inflow of \$969 million whereas the BoP data report no remittances whatsoever.

The IFAD estimates include remittance inflows from all countries, including intra-African transfers. The data on number of migrants and their remittance behavior appear to be less reliable for intra-African flows. Accordingly, we estimate the volume of unreported remittances by comparing estimated inflows from industrialized countries to the total inflows recorded in the official BoP statistics.<sup>7</sup> In principle, the latter should be larger because it is meant to include remittances from the entire world, not only from the industrialized countries. Where, instead, the former estimates exceed the latter, we take this as strong evidence of underreporting. We calculate the discrepancy based on 2006 data (the year for which the alternative estimates are available), and extrapolate from this to estimate discrepancies for earlier years based on the trend in overall African remittance inflows reported in the BoP statistics:

$$RID_{it} = (ARI_{i,2006} - BPRI_{i,2006}) * BPRI_t / BPRI_{2006} \quad (9)$$

where  $RID_{it}$  is the remittance inflow discrepancy in country  $i$  in year  $t$ ;  $ARI_{i,2006}$  and  $BPRI_{i,2006}$  are the alternative and BoP measures, respectively, of remittance inflows in country  $i$  in the year 2006; and  $BPRI_t$  and  $BPRI_{2006}$  are the BoP measures of remittance inflows to African countries as a whole in years  $t$  and 2006, respectively.

Adding these estimated discrepancies to the adjusted estimate of capital flight from Equation 8 we obtain corrected capital flight as:

$$CADJKF_{it} = ADJKF_{it} + RID_{it} \quad (10)$$

## 2.7 Inflation Adjustment

To make annual capital flight estimates comparable over an extended period of time, we convert nominal flows to constant dollars, using the US producer price index for this purpose. Real capital flight (adjusted for trade misinvoicing) is calculated as:

$$RADJKF_{it} = CADJKF_{it} / PPI_t \quad (11)$$

where  $PPI$  is the US producer price index (base 2004 = 1.00).

## 2.8 Adjustment for Interest Earnings

We compute the stock of interest-earnings adjusted capital flight ( $SADJKF$ ) as follows:

$$SADJKF_{it} = SADJKF_{i,t-1}(1 + TBILL_{it}) + CADJKF_{it} \quad (12)$$

where  $TBILL$  is the interest rate on short-term US Treasury bills.

## 3. Results

The annual flows of capital flight for the 33 SSA countries over the 1970–2004 period (in millions of 2004 dollars) are presented in Table 1.<sup>8</sup> Table 2 summarizes these data, while Table 3 provides a detailed breakdown of the key components of capital flight including the misinvoicing and remittances adjustments, both in volume and as a percentage of total capital flight. Real capital flight over the 35-year period amounted to about \$443 billion (in 2004 dollars) for the 33 countries as a whole. Including imputed interest earnings, the accumulated stock of capital flight was about \$640 billion as of the end of 2004. Together, this group of SSA countries is a 'net creditor' to the rest of the world in the sense that their private assets held abroad, as measured by capital flight including interest earnings, exceed their total liabilities as measured by the stock of external debt. Their net external assets (accumulated flight capital minus accumulated external debt) amounted to approximately \$447 billion over the 35-year period.

**Table 1: Real capital flight (in millions of 2004 dollars) for 33 sub-Saharan African countries, 1970–2004**

| Year                     | 1970   | 1971    | 1972    | 1973   | 1974    | 1975    | 1976    | 1977    | 1978    |
|--------------------------|--------|---------|---------|--------|---------|---------|---------|---------|---------|
| Angola                   |        |         |         |        |         |         |         |         |         |
| Botswana                 |        |         |         |        |         | -131.4  | -129.6  | -45.9   | -375.2  |
| Burkina Faso             | 58.2   | 57.5    | 17.8    | 22.9   | 140.9   | -51.5   | -14.3   | 124.7   | 197.3   |
| Burundi                  |        |         |         |        |         |         |         |         |         |
| Cameroon                 | -88.6  | -26.7   | -298.2  | -537.3 | -16.8   | 194.0   | -95.0   | 588.7   | 225.0   |
| Cape Verde               |        |         |         |        |         |         |         |         |         |
| Central African Republic | -16.0  | 21.9    | 26.4    | 89.1   | -3.6    | -3.0    | 42.2    | -18.7   | -14.0   |
| Chad                     |        |         |         |        |         |         |         | 136.5   | 174.0   |
| Congo, Dem. Rep.         | 936.9  | 321.1   | 992.7   | 2204.7 | 1778.4  | 166.0   | 592.0   | -1695.7 | 2445.6  |
| Congo, Rep.              |        | -48.0   | -2.5    | 143.7  | -256.4  | -535.7  | -944.0  | -2.4    | 382.1   |
| Côte d'Ivoire            | 310.3  | 356.1   | 449.5   | 555.4  | 283.8   | 992.5   | 674.6   | 2284.2  | 1645.4  |
| Ethiopia                 | 47.3   | -0.2    | -598.4  | 100.0  | -102.1  | -54.6   | -212.3  | -61.5   | 113.3   |
| Gabon                    |        |         |         |        |         |         |         |         | 531.8   |
| Ghana                    | -41.7  | -317.1  | 385.2   | 443.0  | -683.3  | 215.2   | -356.1  | 257.5   | 128.7   |
| Guinea                   |        |         |         |        |         |         |         |         |         |
| Kenya                    | 49.0   | 111.7   | 104.0   | 479.9  | 611.7   | 539.8   | 423.2   | 143.8   | 282.8   |
| Lesotho                  |        |         |         |        |         | 6.6     | -74.9   | -0.8    | 40.9    |
| Madagascar               | 37.4   | 1601.3  | 322.3   | -84.6  | 763.7   | 244.5   | -1484.5 | 1711.5  | -1243.6 |
| Malawi                   | 15.1   | 104.1   | -38.5   | 187.9  | 166.8   | 229.2   | 193.1   | 194.7   | 80.5    |
| Mauritania               |        |         |         | 351.6  | 471.7   | -239.2  | 274.0   | 82.0    | 108.5   |
| Mozambique               |        |         |         |        |         |         |         |         |         |
| Nigeria                  | -521.3 | -610.4  | 755.5   | 4206.5 | 1696.8  | 2249.3  | 4910.0  | 10595.5 | 4981.9  |
| Rwanda                   | -119.8 | 37.6    | 30.6    | 41.5   | 42.0    | 84.7    | 96.2    | 150.7   | 351.2   |
| Sao Tome and Principe    |        |         |         |        |         |         |         |         | 29.5    |
| Seychelles               |        |         |         |        |         |         |         |         |         |
| Sierra Leone             | 55.2   | 278.0   | 43.8    | 348.6  | 218.5   | -12.1   | 127.8   | 144.6   | 57.0    |
| South Africa             |        | -2285.0 | -1724.2 | -509.2 | -1069.3 | -4479.3 | -1355.2 | 1634.4  | 1618.3  |
| Sudan                    | 52.0   | 123.3   | -260.5  | 133.0  | 774.2   | 311.1   | 353.3   | 237.0   | -248.1  |
| Swaziland                |        |         |         |        | 96.0    | 68.1    | 48.2    | 63.6    | 65.3    |
| Tanzania                 |        |         |         |        |         |         | 608.9   | 605.6   | 698.7   |
| Uganda                   | 244.9  | 78.0    | 7.1     | 157.0  | 73.7    | -26.8   | 59.5    | -351.9  | -104.3  |
| Zambia                   | 1597.4 | 1534.0  | 125.3   | 304.1  | -447.1  | 136.6   | 115.6   | 729.2   | 570.0   |
| Zimbabwe                 |        |         |         |        |         |         |         | 188.6   | 567.7   |
| Total                    | 2616.3 | 1337.2  | 337.8   | 8637.8 | 4539.6  | -96.2   | 3852.7  | 17695.9 | 13310.5 |
| Year                     | 1979   | 1980    | 1981    | 1982   | 1983    | 1984    | 1985    | 1986    | 1987    |
| Angola                   |        |         |         |        |         |         | 3085.2  | 1103.7  | 3564.3  |
| Botswana                 | -89.5  | -205.2  | -167.5  | -188.1 | -220.8  | -108.1  | -73.9   | -100.0  | 427.5   |
| Burkina Faso             | 46.8   | 166.0   | 104.7   | 96.3   | 70.0    | 61.2    | -49.2   | 65.6    | 48.2    |
| Burundi                  |        |         |         |        |         |         | 116.3   | 140.5   | 235.4   |
| Cameroon                 | -365.7 | 358.8   | 335.3   | 454.5  | 816.5   | 2275.3  | -199.7  | 2571.6  | 1563.2  |
| Cape Verde               |        |         |         | 77.0   | 74.3    | 71.1    | 17.9    | 64.7    | 81.4    |
| Central African Republic | 3.2    | 5.7     | 167.0   | 86.1   | 66.3    | 76.1    | 47.9    | 16.9    | 70.1    |
| Chad                     | 104.1  | 92.6    | -0.7    | -20.9  | 54.2    | -23.3   | 16.5    | 48.5    | 91.3    |
| Congo, Dem. Rep.         | 1043.9 | 1221.4  | 2117.0  | 747.7  | 503.1   | 75.0    | 1041.4  | 570.1   | 780.1   |
| Congo, Rep.              | 370.0  | 613.2   | -183.1  | 804.9  | 560.3   | 900.4   | 885.4   | -280.1  | 1139.6  |
| Côte d'Ivoire            | 332.4  | 1557.3  | 363.5   | 1143.1 | 246.6   | 279.6   | 836.2   | 1198.2  | 2013.5  |
| Ethiopia                 | -20.2  | -83.2   | 982.4   | 1985.6 | 823.0   | 322.5   | 909.4   | 581.8   | 1662.7  |
| Gabon                    | 790.9  | 473.4   | 66.9    | 270.0  | 366.9   | -37.8   | 42.7    | -321.9  | 311.5   |
| Ghana                    | 316.2  | 552.9   | -558.7  | 283.3  | 691.7   | 734.6   | 89.8    | -382.9  | 672.7   |
| Guinea                   |        |         |         |        |         |         |         | 159.5   | 277.6   |
| Kenya                    | 25.7   | 164.5   | -316.0  | -80.4  | 353.6   | -421.5  | 783.6   | -231.8  | 735.8   |
| Lesotho                  | 40.0   | 61.7    | 35.0    | 82.7   | 39.8    | 16.5    | 22.6    | 9.6     | 117.5   |
| Madagascar               | 14.8   | -224.4  | -364.7  | 16.7   | -57.7   | 338.8   | 89.2    | 212.7   | 496.4   |
| Malawi                   | -382.6 | -48.9   | -14.7   | 13.9   | 125.6   | -79.5   | 182.7   | 192.5   | 229.6   |
| Mauritania               | -98.7  | 30.4    | -11.0   | 114.1  | 143.0   | 172.4   | 117.4   | -47.9   | 31.9    |
| Mozambique               |        |         |         | -369.3 | -18.6   | 1060.3  | 1671.9  | 234.8   | 217.1   |

Table 1: Continued

| Year                     | 1979           | 1980           | 1981           | 1982           | 1983           | 1984           | 1985           | 1986           | 1987           |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Nigeria                  | -359.7         | 2776.0         | 10997.1        | -280.6         | 3634.7         | 758.4          | 3131.1         | 7035.3         | 7032.7         |
| Rwanda                   | 389.8          | 279.8          | -8.6           | 67.2           | 60.2           | 110.7          | 122.6          | 171.1          | 202.1          |
| Sao Tome and Principe    | 43.9           | 51.1           | 13.8           | 3.5            | 23.8           | 26.9           | 21.8           | 28.3           | 34.5           |
| Seychelles               |                |                | -34.0          | 63.9           | -3.9           | 49.3           | 100.0          | 109.1          | 88.6           |
| Sierra Leone             | 91.7           | 127.9          | 136.7          | -131.1         | 153.5          | 98.0           | 15.5           | 119.8          | 175.1          |
| South Africa             | 3960.3         | 2926.0         | -4554.4        | -3806.2        | -1674.5        | -562.9         | 3394.3         | 4274.0         | 3240.4         |
| Sudan                    | 626.5          | 1154.5         | 348.9          | -210.0         | -111.5         | 1615.3         | 457.4          | -186.0         | 688.1          |
| Swaziland                | -22.8          | -177.1         | -7.4           | -129.9         | -118.0         | -138.2         | 10.6           | 88.9           | 156.5          |
| Tanzania                 | -29.2          | 857.8          | 702.6          | 494.2          | 847.2          | 648.3          | 2483.6         | -6800.4        | 55.3           |
| Uganda                   | 373.7          | 80.9           | 251.6          | 227.2          | 205.1          | 299.8          | 40.2           | 87.8           | 378.7          |
| Zambia                   | 1136.2         | -261.0         | 1097.6         | -521.6         | 102.7          | 381.6          | 363.3          | 1312.3         | 1014.7         |
| Zimbabwe                 | -22.6          | 395.9          | 1130.1         | 1224.0         | 730.8          | 561.1          | 279.9          | 668.6          | 1275.4         |
| <b>Total</b>             | <b>8318.9</b>  | <b>12948.1</b> | <b>12629.3</b> | <b>2517.8</b>  | <b>8487.8</b>  | <b>9562.1</b>  | <b>20053.4</b> | <b>12714.9</b> | <b>29109.1</b> |
| Year                     | 1988           | 1989           | 1990           | 1991           | 1992           | 1993           | 1994           | 1995           | 1996           |
| Angola                   | 944.5          | 1619.2         | 1202.5         | 2688.1         | 2579.5         | 2113.7         | 2135.3         | 2182.4         | 5003.5         |
| Botswana                 | -213.1         | -19.6          | -307.6         | -24.7          | -257.1         | -249.0         | 119.2          | 209.7          | -29.5          |
| Burkina Faso             | -2.4           | 278.8          | 102.7          | -26.8          | 169.5          | 111.3          | 183.1          | 570.9          | 284.0          |
| Burundi                  | 50.0           | 63.6           | 155.1          | 76.6           | 118.5          | 136.5          | 87.4           | 282.7          | -1.0           |
| Cameroon                 | 591.0          | 1676.0         | 1365.2         | 1080.6         | 1957.3         | 628.8          | 1706.0         | 598.7          | 489.7          |
| Cape Verde               | 72.7           | 38.4           | 130.2          | 128.8          | 111.1          | 99.1           | 61.2           | 149.4          | 55.7           |
| Central African Republic | 51.7           | -2.5           | 93.9           | 108.5          | -74.8          | -2.6           | 75.5           | 569.6          | 281.3          |
| Chad                     | 169.8          | 19.3           | 160.3          | 93.3           | 87.6           | 9.3            | 54.8           | 56.3           | 76.5           |
| Congo, Dem. Rep.         | -490.9         | -23.6          | 1483.4         | 869.3          | 752.4          | 532.0          | 335.5          | 973.4          | -961.1         |
| Congo, Rep.              | -331.7         | 363.0          | -77.2          | 56.1           | 577.5          | 210.4          | -140.7         | 455.7          | -1430.8        |
| Côte d'Ivoire            | 1226.2         | 1654.4         | 3211.4         | 2065.4         | 1566.4         | 1858.0         | -118.7         | 2029.6         | 735.5          |
| Ethiopia                 | -422.2         | -202.3         | 702.3          | 584.8          | 685.5          | 484.7          | 675.6          | 228.3          | 79.3           |
| Gabon                    | -122.6         | 329.0          | 486.6          | 204.6          | -120.6         | -50.7          | 480.7          | 131.8          | 323.7          |
| Ghana                    | -163.6         | 604.9          | 436.9          | -24.8          | 489.6          | 47.8           | 487.1          | 350.4          | 691.8          |
| Guinea                   | 81.9           | 24.5           | 228.7          | 64.8           | 34.6           | 317.6          | 105.8          | 8.0            | -71.0          |
| Kenya                    | -275.5         | 255.6          | 558.4          | 169.5          | -146.6         | -110.1         | -142.4         | 75.3           | -735.9         |
| Lesotho                  | 46.4           | 96.6           | 162.7          | 126.1          | 54.2           | -2.0           | 93.3           | -105.3         | -125.7         |
| Madagascar               | 4.2            | 24.4           | 296.7          | 635.5          | 548.2          | 556.1          | 479.1          | 668.7          | -41.8          |
| Malawi                   | 189.1          | 417.1          | 155.3          | -176.6         | -170.0         | -90.5          | -310.3         | 392.0          | 121.9          |
| Mauritania               | 2.6            | -31.2          | 252.1          | 49.0           | -241.2         | 261.9          | 109.5          | 192.7          | 202.3          |
| Mozambique               | -227.7         | -150.9         | 1792.0         | 563.2          | 1010.1         | 584.5          | 2731.4         | 571.4          | 496.4          |
| Nigeria                  | 2887.1         | 3390.5         | 6663.7         | 10263.0        | 9873.0         | 5266.8         | 3753.1         | 2267.7         | 5272.3         |
| Rwanda                   | 201.2          | 125.2          | 180.0          | 147.5          | 38.9           | -0.6           | -15.2          | 121.9          | 112.8          |
| Sao Tome and Principe    | 26.6           | 48.6           | 7.0            | 37.7           | 39.5           | 32.2           | 12.6           | 25.3           | -7.3           |
| Seychelles               | 193.4          | -237.7         | 99.6           | 167.7          | 50.3           | -42.9          | 129.8          | 114.4          | -58.4          |
| Sierra Leone             | 92.3           | 84.7           | 88.9           | 326.3          | 488.1          | 222.8          | 148.8          | -162.7         | 178.9          |
| South Africa             | 3304.0         | 635.9          | 2164.5         | 2358.4         | 2720.9         | 4763.7         | 1300.3         | -1727.4        | 2146.3         |
| Sudan                    | 70.7           | 2521.1         | 971.9          | -229.6         | 140.8          | 177.6          | 94.9           | -228.2         | -1350.9        |
| Swaziland                | 133.8          | 138.0          | 53.1           | 149.9          | -76.4          | 86.8           | 84.6           | 10.8           | -36.5          |
| Tanzania                 | 874.4          | 110.8          | 50.7           | -207.1         | -4.3           | 93.1           | 286.3          | 299.6          | 134.4          |
| Uganda                   | -238.1         | -11.8          | 227.4          | 47.7           | 97.4           | 231.8          | 296.6          | 75.4           | -26.8          |
| Zambia                   | 1008.1         | 2010.2         | 1096.5         | 174.7          | 42.5           | -593.6         | 883.0          | -434.6         | -170.2         |
| Zimbabwe                 | 347.3          | 946.1          | 535.5          | 682.4          | 1462.8         | 733.2          | 70.4           | 751.5          | 630.8          |
| <b>Total</b>             | <b>10081.1</b> | <b>16796.2</b> | <b>24730.1</b> | <b>23229.7</b> | <b>24605.1</b> | <b>18417.4</b> | <b>16253.6</b> | <b>11705.5</b> | <b>12270.0</b> |
| Year                     | 1997           | 1998           | 1999           | 2000           | 2001           | 2002           | 2003           | 2004           |                |
| Angola                   | -98.6          | 1840.3         | 788.5          | 910.8          | 1882.3         | 2525.5         | 3345.3         | 2763.1         |                |
| Botswana                 | 169.1          | 200.5          | 223.8          | 211.6          | 431.6          | 630.2          | 759.5          | 681.0          |                |
| Burkina Faso             | 22.8           | 227.5          | 98.4           | -215.9         | -39.0          | -6.1           | 155.2          |                |                |
| Burundi                  | 68.5           | 119.7          | 33.9           | 71.9           | -58.3          | 240.8          | 224.0          | -88.6          |                |

Table 1: Continued

| Year                     | 1997    | 1998    | 1999    | 2000    | 2001    | 2002    | 2003    | 2004     |
|--------------------------|---------|---------|---------|---------|---------|---------|---------|----------|
| Cameroon                 | 2404.2  | 826.6   | -213.9  | 454.1   | -1464.6 | -155.8  | -848.5  | -471.6   |
| Cape Verde               | 261.7   | 74.1    | 88.3    | 56.7    | 96.9    | 111.2   | 210.6   | 58.6     |
| Central African Republic | 30.5    | 43.6    | -5.6    | -67.2   | -19.4   | 266.5   | -65.1   | -4.0     |
| Chad                     | 52.9    | 14.3    | 2.9     | -54.7   | 34.4    | -612.7  | 54.7    | 446.2    |
| Congo, Dem. Rep.         | -581.2  | 432.8   | -660.8  | -143.8  | -1394.7 | 412.3   | 1092.1  | 1104.1   |
| Congo, Rep.              | 1087.7  | 1065.8  | 1202.3  | 1172.2  | 347.3   | 769.4   | 2343.9  | 3732.2   |
| Côte d'Ivoire            | 1600.8  | 22.2    | -633.8  | -457.0  | -506.0  | 976.5   | 3052.6  | 543.8    |
| Ethiopia                 | 375.8   | 375.5   | -596.9  | 457.6   | 1153.6  | 2437.5  | 1857.2  | 1759.9   |
| Gabon                    | 701.2   | 358.4   | 294.5   | 725.4   | 34.6    | 522.2   | 358.0   | 1429.7   |
| Ghana                    | -107.4  | 430.2   | -379.1  | 235.8   | 425.7   | 985.6   | 753.7   | 808.4    |
| Guinea                   | 151.2   | 107.6   | -191.8  | -357.3  | -212.4  | 45.8    | -139.2  | -84.7    |
| Kenya                    | 179.7   | 660.8   | -475.9  | -179.9  | -1270.1 | 424.0   | 250.8   | -331.3   |
| Lesotho                  | -182.9  | -143.7  | -24.2   | -63.9   | -289.5  | 199.1   | 79.2    | 89.7     |
| Madagascar               | 290.0   | 515.3   | 568.2   | -100.8  | -180.8  | 592.2   | 509.3   | -323.1   |
| Malawi                   | -314.9  | 461.3   | 210.2   | -113.2  | 17.9    | 41.3    | 156.0   | 189.8    |
| Mauritania               | 187.9   | -78.0   | 247.3   | -7.6    | -211.0  | 329.9   | -122.4  | -324.7   |
| Mozambique               | 1137.3  | 948.2   | -1960.7 | -133.1  | 852.4   | 368.3   | -138.4  | -562.7   |
| Nigeria                  | 1583.3  | 1495.4  | 4693.1  | 9668.2  | 3991.9  | 5101.4  | 20769.1 | 5768.2   |
| Rwanda                   | 22.5    | 76.6    | 32.0    | 63.4    | 9.6     | 59.6    | 31.2    | 50.8     |
| Sao Tome and Principe    | 8.0     | 50.5    | 88.5    | 21.9    | 3.3     | 37.2    | -6.2    | 21.2     |
| Seychelles               | 104.7   | 182.5   | 253.3   | 318.0   | 98.8    | 424.5   | 259.4   | 270.6    |
| Sierra Leone             | 259.3   | 323.3   | 108.7   | -86.6   | -51.7   | 143.8   | 174.7   | 219.8    |
| South Africa             | -2826.0 | -2087.5 | -398.6  | 2035.7  | 12307.8 | 2426.6  | 1825.7  | -11711.7 |
| Sudan                    | -1286.6 | -384.8  | -763.8  | 167.6   | -308.2  | -245.3  | 1121.1  | 2891.9   |
| Swaziland                | 157.5   | -122.4  | 75.7    | -54.1   | 8.8     | 239.7   | 182.2   | 228.9    |
| Tanzania                 | -62.2   | 843.0   | 516.8   | 4.5     | -643.9  | 319.3   | 590.6   | 806.4    |
| Uganda                   | 210.0   | -14.1   | -115.0  | 540.4   | -69.9   | 651.2   | 835.6   | 162.1    |
| Zambia                   | -444.4  | 512.6   | -384.2  | -337.1  | -1603.9 | -1325.3 | -473.1  | 517.4    |
| Zimbabwe                 | 1885.6  | 1875.1  | 1035.8  | 268.0   | -125.1  | -686.9  | -1278.3 | 28.3     |
| Total                    | 7048.0  | 11252.9 | 3757.5  | 15011.5 | 13248.3 | 18249.2 | 37920.2 | 10669.5  |

Sources: Ndikumana and Boyce (2003); series updated (1997 to 2004) and sample expanded using information from: IMF, *International Financial Statistics*; IMF, *Balance of Payments Statistics*, 2007 CD-ROM edition; IMF, *Direction of Trade Statistics*, 2007 CD-ROM edition; IMF, various country online information in 'Selected issues and statistical appendix'; World Bank, *Global Development Finance*, 2006.

While these figures are indeed very large, they are smaller than some estimates of the financial hemorrhage suffered by African countries. For example, the Global Financial Integrity (GFI) project finds that illicit capital flows from Africa, calculated by means of a different method than the measure of capital flight used in this study, totalled between \$854 billion and \$1.8 trillion for the period 1970–2008 (Kar and Cartwright-Smith, 2010).<sup>9</sup>

The data indicate that capital flight is not solely a phenomenon dating from the onset of the debt crisis of the 1980s (see Ndikumana and Boyce, 2003). The outflows of the 1970s were often comparable to, and in some cases greater than, those of more recent decades. Over the period, a number of countries appear to have experienced episodes of capital flight reversal (that is, net outflows followed by net inflows), but in the period as a whole, outflows more than outweigh inflows.

To give a sense of the relative magnitude of the region's net external position, the region's external assets are 3.3 times the stock of debts owed to the world. For some individual countries, the results are even more dramatic: for Côte d'Ivoire, Zimbabwe, Angola and Nigeria the external assets are 4.6, 5.1, 5.3, and 6.7 times higher than their debt stocks, respectively.

## 4. Conclusion

The large amounts of capital flight documented in this paper are a cause of serious concern for a continent that is struggling to meet large and growing financing needs to support its development agenda. Thus far, national and international policy attention has been focused on increasing financial resources from abroad, including concessional loans, on the one hand, and on strategies to enhance domestic resource mobilization on the other. The evidence in this paper suggests that these efforts need to be complemented by strategies to address the problem of capital flight.

**Table 2: Summary measures of capital flight, 1970–2004**

| Country                  | Real KF<br>(2004 US\$m) | Stock of KF,<br>in 2004<br>(US\$m) | Net foreign<br>assets in 2004<br>(US\$m) | Total real<br>KF/GDP in<br>2004 (%) | Stock of<br>KF/debt in<br>2004 (%) |
|--------------------------|-------------------------|------------------------------------|--|-------------------------------------|------------------------------------|
| Angola                   | 42178.8                 | 50950.6                            | 41430.0                                  | 215.6                               | 535.2                              |
| Botswana                 | 1127.9                  | -1086.9                            | -1610.9                                  | 12.6                                | -207.4                             |
| Burkina Faso             | 3076.9                  | 4670.6                             | 2934.6                                   | 73.6                                | 269.0                              |
| Burundi                  | 2073.6                  | 2566.6                             | 1181.2                                   | 312.2                               | 185.3                              |
| Cameroon                 | 18378.9                 | 27287.7                            | 17791.8                                  | 116.5                               | 287.4                              |
| Cape Verde               | 2190.9                  | 2707.1                             | 2190.1                                   | 231.1                               | 523.6                              |
| Central African Republic | 1943.8                  | 2774.1                             | 1696.4                                   | 148.7                               | 257.4                              |
| Chad                     | 1337.7                  | 2345.6                             | 644.3                                    | 31.1                                | 137.9                              |
| Congo, Dem. Rep.         | 19572.5                 | 36737.6                            | 24896.7                                  | 295.1                               | 310.3                              |
| Congo, Rep.              | 14950.4                 | 17474.8                            | 11645.4                                  | 344.3                               | 299.8                              |
| Côte d'Ivoire            | 34349.4                 | 54000.6                            | 42261.2                                  | 222.0                               | 460.0                              |
| Ethiopia                 | 17031.5                 | 22526.0                            | 15951.9                                  | 175.0                               | 342.6                              |
| Gabon                    | 8580.8                  | 11997.6                            | 7847.9                                   | 118.7                               | 289.1                              |
| Ghana                    | 8503.7                  | 11208.4                            | 4173.3                                   | 98.7                                | 159.3                              |
| Guinea                   | 551.2                   | 1048.9                             | -2489.6                                  | 14.6                                | 29.6                               |
| Kenya                    | 2665.4                  | 6369.3                             | -456.9                                   | 16.6                                | 93.3                               |
| Lesotho                  | 407.4                   | 893.4                              | 129.8                                    | 29.8                                | 117.0                              |
| Madagascar               | 7430.9                  | 9570.8                             | 6108.5                                   | 170.3                               | 276.4                              |
| Malawi                   | 2527.8                  | 3825.4                             | 407.5                                    | 132.9                               | 111.9                              |
| Mauritania               | 2319.1                  | 4006.0                             | 1709.2                                   | 151.2                               | 174.4                              |
| Mozambique               | 10677.7                 | 14273.4                            | 9622.9                                   | 180.6                               | 306.9                              |
| Nigeria                  | 165696.7                | 240781.0                           | 204891.3                                 | 230.0                               | 670.9                              |
| Rwanda                   | 3366.8                  | 5889.5                             | 4233.8                                   | 183.5                               | 355.7                              |
| Sao Tome and Principe    | 723.3                   | 1059.1                             | 696.9                                    | 1265.9                              | 292.4                              |
| Seychelles               | 2700.9                  | 2986.3                             | 2371.5                                   | 384.1                               | 485.7                              |
| Sierra Leone             | 4607.7                  | 7005.4                             | 5282.6                                   | 424.7                               | 406.6                              |
| South Africa             | 18266.0                 | 17492.3                            | 7552.7                                   | 8.5                                 | 176.0                              |
| Sudan                    | 9218.7                  | 16325.0                            | -3006.7                                  | 43.0                                | 84.4                               |
| Swaziland                | 1263.9                  | 1342.6                             | 872.5                                    | 50.2                                | 285.6                              |
| Tanzania                 | 5185.2                  | 9963.4                             | 2163.9                                   | 45.8                                | 127.7                              |
| Uganda                   | 4982.0                  | 6853.7                             | 2031.4                                   | 73.0                                | 142.1                              |
| Zambia                   | 9769.5                  | 19814.3                            | 12535.5                                  | 180.2                               | 272.2                              |
| Zimbabwe                 | 16162.0                 | 24556.0                            | 19758.5                                  | 344.2                               | 511.9                              |
| <b>33-country total</b>  | <b>443818.8</b>         | <b>640216.0</b>                    | <b>447449.1</b>                          | <b>91.4</b>                         | <b>332.1</b>                       |

Notes: For Burkina Faso, the last year where KF is available is 2003; so totals, stocks, and ratios refer to 2003.

Sources: Ndikumana and Boyce (2003); series updated (1997 to 2004) and sample expanded using information from: IMF, *International Financial Statistics*; IMF, *Balance of Payments Statistics*, 2007 CD-ROM edition; IMF, *Direction of Trade Statistics*, 2007 CD-ROM edition; IMF, various country online information in 'Selected issues and statistical appendix'; World Bank, *Global Development Finance*, 2006; World Bank, *World Development Indicators*, 2006.

Strategies to address this problem can be built on three pillars. The first consists of policies to curtail future capital flight, for example by improving transparency and accountability in the management of public finances, instituting more effective capital controls, improving the rate of return on domestic investment, and promoting international cooperation to lift the veil of secrecy in offshore banking jurisdictions. The second pillar consists of efforts to secure the repatriation of looted assets. The Stolen Asset Recovery (STAR) initiative, launched in 2007 by the World Bank and the United Nations Office on Drugs and Crime, signals increased international willingness to cooperate in such efforts. The scope for successful repatriation is limited, however, by the burden on African governments to locate and reclaim the stolen funds.

The third pillar is the repudiation of public debts that financed the illegitimate accumulation of private external assets, rather than being used legitimately to benefit the public. Where there is *prima facie* evidence of widespread debt-fueled capital flight, the burden of proof can be placed on creditors to document that borrowed funds were used for legitimate purposes. The repudiation of such odious debts is equivalent to asset repatriation, since it blocks the final spin of the revolving door between foreign borrowing and capital flight. When borrowed funds are diverted into private assets abroad, the net capital loss to Africa comes not from the initial outflow (which is matched by the inflow of borrowed money) but rather from subsequent debt-service payments. Selective repudiation of odious debts would not only stem further capital losses but also help deter irresponsible lending in the future.<sup>10</sup>



**Table 3: Main components of capital flight (volume and percentage of total capital flight)**

| Country               | Values in millions of 2004 dollars |                    |                                    |                        |                               | As a percentage of total capital flight |                    |                        |                               |  |
|-----------------------|------------------------------------|--------------------|------------------------------------|------------------------|-------------------------------|---|--------------------|------------------------|-------------------------------|--|
|                       | Unadjusted capital flight          | Trade misinvoicing | Trade misinvoicing-adjusted flight | Remittances adjustment | Total adjusted capital flight | Unadjusted capital flight               | Trade misinvoicing | Remittances adjustment | Total adjusted capital flight |  |
| Angola                | 35363.4                            | -1237.8            | 34125.6                            | 8053.2                 | 42178.8                       | 83.8                                    | -2.9               | 19.1                   | 100.0                         |  |
| Botswana              | 1127.9                             | 0.0                | 1127.9                             | 0.0                    | 1127.9                        | 100.0                                   | 0.0                | 0.0                    | 100.0                         |  |
| Burkina Faso          | 1534.4                             | 1361.9             | 2896.3                             | 180.6                  | 3076.9                        | 49.9                                    | 44.3               | 5.9                    | 100.0                         |  |
| Burundi               | 88.5                               | 1346.6             | 1435.2                             | 638.4                  | 2073.6                        | 4.3                                     | 64.9               | 30.8                   | 100.0                         |  |
| Cameroon              | 2415.7                             | 12793.3            | 15209.0                            | 3169.9                 | 18378.9                       | 13.1                                    | 69.6               | 17.2                   | 100.0                         |  |
| Cape Verde            | -198.5                             | -295.8             | -494.2                             | 2685.1                 | 2190.9                        | -9.1                                    | -13.5              | 122.6                  | 100.0                         |  |
| Central African Rep.  | 684.2                              | 663.2              | 1347.4                             | 596.3                  | 1943.8                        | 35.2                                    | 34.1               | 30.7                   | 100.0                         |  |
| Chad                  | 848.1                              | 105.2              | 953.2                              | 384.5                  | 1337.7                        | 63.4                                    | 7.9                | 28.7                   | 100.0                         |  |
| Congo, Dem. Rep.      | 8698.9                             | 5070.7             | 13769.6                            | 5803.0                 | 19572.5                       | 44.4                                    | 25.9               | 29.6                   | 100.0                         |  |
| Congo, Rep.           | 7933.1                             | 3307.3             | 11240.4                            | 3710.0                 | 14950.4                       | 53.1                                    | 22.1               | 24.8                   | 100.0                         |  |
| Côte d'Ivoire         | 24238.9                            | 8888.2             | 33127.1                            | 1222.3                 | 34349.4                       | 70.6                                    | 25.9               | 3.6                    | 100.0                         |  |
| Ethiopia              | 23464.3                            | -10234.0           | 13230.2                            | 3801.3                 | 17031.5                       | 137.8                                   | -60.1              | 22.3                   | 100.0                         |  |
| Gabon                 | 7494.2                             | 547.5              | 8041.7                             | 539.1                  | 8580.8                        | 87.3                                    | 6.4                | 6.3                    | 100.0                         |  |
| Ghana                 | 5358.6                             | -3857.6            | 1501.0                             | 7002.7                 | 8503.7                        | 63.0                                    | -45.4              | 82.3                   | 100.0                         |  |
| Guinea                | 1838.0                             | -1906.0            | -68.0                              | 619.2                  | 551.2                         | 333.5                                   | -345.8             | 112.3                  | 100.0                         |  |
| Kenya                 | -3785.8                            | 3865.5             | 79.7                               | 2585.7                 | 2665.4                        | -142.0                                  | 145.0              | 97.0                   | 100.0                         |  |
| Lesotho               | 407.4                              | 0.0                | 407.4                              | 0.0                    | 407.4                         | 100.0                                   | 0.0                | 0.0                    | 100.0                         |  |
| Madagascar            | 1937.4                             | 1331.4             | 3268.7                             | 4162.2                 | 7430.9                        | 26.1                                    | 17.9               | 56.0                   | 100.0                         |  |
| Malawi                | -589.9                             | 2306.7             | 1716.8                             | 811.1                  | 2527.8                        | -23.3                                   | 91.3               | 32.1                   | 100.0                         |  |
| Mauritania            | 3070.5                             | -1628.8            | 1441.7                             | 877.4                  | 2319.1                        | 132.4                                   | -70.2              | 37.8                   | 100.0                         |  |
| Mozambique            | 6606.2                             | 953.5              | 7559.7                             | 3118.1                 | 10677.7                       | 61.9                                    | 8.9                | 29.2                   | 100.0                         |  |
| Nigeria               | 102959.0                           | 49990.7            | 152949.7                           | 12747.1                | 165696.7                      | 62.1                                    | 30.2               | 7.7                    | 100.0                         |  |
| Rwanda                | -162.3                             | 2753.7             | 2591.4                             | 775.3                  | 3366.8                        | -4.8                                    | 81.8               | 23.0                   | 100.0                         |  |
| Sao Tome and Principe | 149.8                              | -27.0              | 122.7                              | 600.6                  | 723.3                         | 20.7                                    | -3.7               | 83.0                   | 100.0                         |  |
| Seychelles            | 1452.2                             | 1028.6             | 2480.8                             | 220.1                  | 2700.9                        | 53.8                                    | 38.1               | 8.1                    | 100.0                         |  |
| Sierra Leone          | -770.5                             | 3233.4             | 2462.9                             | 2144.7                 | 4607.7                        | -16.7                                   | 70.2               | 46.5                   | 100.0                         |  |
| South Africa          | 4763.7                             | 3587.6             | 8351.3                             | 9914.8                 | 18266.0                       | 26.1                                    | 19.6               | 54.3                   | 100.0                         |  |
| Sudan                 | 18246.6                            | -9027.9            | 9218.7                             | 0.0                    | 9218.7                        | 197.9                                   | -97.9              | 0.0                    | 100.0                         |  |
| Swaziland             | 1263.9                             | 0.0                | 1263.9                             | 0.0                    | 1263.9                        | 100.0                                   | 0.0                | 0.0                    | 100.0                         |  |
| Tanzania              | 3004.0                             | -994.7             | 2009.3                             | 3175.9                 | 5185.2                        | 57.9                                    | -19.2              | 61.2                   | 100.0                         |  |
| Uganda                | 5232.0                             | -250.0             | 4982.0                             | 0.0                    | 4982.0                        | 105.0                                   | -5.0               | 0.0                    | 100.0                         |  |
| Zambia                | 9774.2                             | -1890.0            | 7884.2                             | 1885.3                 | 9769.5                        | 100.0                                   | -19.3              | 19.3                   | 100.0                         |  |
| Zimbabwe              | 1015.6                             | 11076.3            | 12091.9                            | 4070.1                 | 16162.0                       | 6.3                                     | 68.5               | 25.2                   | 100.0                         |  |
| Total                 | 275463.5                           | 82861.4            | 358324.9                           | 85493.9                | 443818.8                      | 62.1                                    | 18.7               | 19.3                   | 100.0                         |  |

Unless and until the financial hemorrhage of capital from Africa is sealed, substantial portions of new external resources and domestic public revenue are likely to suffer the same fate, and ultimately benefit not the majority of the African people but the continent's elite and its accomplices in Western financial centers. The magnitudes of African capital flight are so large, and its developmental consequences so severe, that this problem can no longer be ignored.

## Notes

1. For discussions of the methodology for the computation of capital flight, see Lessard and Williamson (1987), Ajayi (1997) and Boyce and Ndikumana (2001).
2. The seven currencies are the euro (from 2000), French franc and the Deutsche mark (up to 2000), Swiss franc, yen, SDR and British pound.
3. The trade misinvoicing adjustment could not be calculated in the case of South Africa due to lack of consistent data.
4. The series for the c.i.f./f.o.b. factor reported in the IMF's *Direction of Trade Statistics Yearbooks* are in some cases anomalous both in terms of absolute values and year-to-year variations. For example, the reported c.i.f./f.o.b. factor for Congo-Zaire is higher than that of land-locked Burundi. Hence we use the average factor for each year for Africa as a whole in our computations.
5. In some cases, the data reported in the IMF *Direction of Trade Statistics Yearbooks* show occasional wide, unexplained fluctuations in the shares of industrialized countries in some African countries' exports and imports. In our calculations, we use the average shares for each country over the 1970–2004 period. We update the series for the 30 countries contained in the Ndikumana and Boyce (2003) study, using the average shares for the 1997–2004 period (given that capital flight series for 1970–96 are taken from Ndikumana and Boyce, 2003, simply converted into 2004 dollars).
6. Summary BoP measures of remittance inflows and outflows for the years 1970–2006 are available from World Bank (2007). For discussion of the methodology by which these measures were extracted from the BoP accounts, see World Bank (2006, pp. 105–8). The World Bank (2006, p. 91) speculates that the share of formal (recorded) as opposed to informal (unrecorded) remittances rose in response to tightened financial regulations after 11 September 2001. On the other hand, IFAD (2007, p. 7) suggests that by increasing the cost of using formal channels, the same regulatory changes may have led to greater reliance on informal remittance networks. In the absence of direct evidence on this matter, we assume no overall change in the share of unrecorded remittances.
7. We are grateful to Dr Manuel Orozco of the Inter-American Dialogue in Washington DC, for providing us with the African remittance inflow estimates prepared for the IFAD study, disaggregated and cross-tabulated by sending countries.
8. Ndikumana and Boyce (2003) report estimates of capital flight for the period 1970–96 for a sample of 30 countries included in this study. For these countries and this period, we simply convert these series to 2004 dollars, and add the further adjustments for debt write-offs and unrecorded remittances.
9. Note that the GFI estimates cover a longer period (4 years longer, 2005–2008) and the entire continent. However, the large differences in the estimated total outflows is primarily due to the use of a different measure of illicit flows.
10. For further discussion, see Ndikumana and Boyce (2010).

## References

- Ajayi, I. S. (1997), 'An Analysis of External Debt and Capital Flight in the Severely Indebted Low Income Countries in Sub-Saharan Africa', IMF Working Paper WP/97/68.
- Boyce, J. K. and L. Ndikumana (2001), 'Is Africa a Net Creditor? New Estimates of Capital Flight from Severely Indebted Sub-Saharan African Countries, 1970–1996', *Journal of Development Studies*, Vol. 38, No. 2, pp. 27–56.
- Collier, P., A. Hoeffler, and C. Pattillo (2001), 'Flight Capital as a Portfolio Choice', *World Bank Economic Review*, Vol. 15, No. 1, pp. 55–80.

- Erbe, S. (1985), 'The Flight of Capital from Developing Countries', *Intereconometrics*, Nov/Dec, pp. 268–75.
- Fedderke, J. W. and W. Liu (2002), 'Modeling the Determinants of Capital Flows and Capital Flight: With an Application to South African Data from 1960 to 1995', *Economic Modeling*, Vol. 19, pp. 419–44.
- Fofack, H. and L. Ndikumana (2010), 'Capital Flight Repatriation: Investigation of its Potential Gains for Sub-Saharan African Countries', *African Development Review*, Vol. 22, No. 1, pp. 4–22.
- International Finance Corporation (1998), 'Trends in Private Investment in Developing Countries. Statistics for 1970–96', IFC Discussion Paper 34.
- International Fund for Agricultural Development (IFAD) (2007), *Sending Money Home: Worldwide Remittance Flows to Developing and Transition Countries*, IFAD, Rome. Available at <http://www.ifad.org/events/remittances/maps/brochure.pdf>.
- Kar, D. and D. Cartwright-Smith (2010), 'Illicit Financial Flows from Africa: Hidden Resource for Development', Global Financial Integrity, Washington, DC, March.
- Lessard, D. R. and J. Williamson (eds.) (1987), *Capital Flight and Third World Debt*, Institute for International Economics, Washington DC.
- Morgan Guaranty Trust Company (1986), 'LDC Capital Flight', *World Financial Markets*, 13–15 March.
- Ndikumana, L. (2000), 'Financial Determinants of Domestic Investment in Sub-Saharan Africa: Evidence from Panel Data', *World Development*, Vol. 28, No. 2, pp. 381–400.
- Ndikumana, L. and J. K. Boyce (1998), 'Congo's Odious Debt: External Borrowing and Capital Flight in Zaïre', *Development and Change*, Vol. 29, pp. 1995–217.
- Ndikumana, L. and J. K. Boyce (2003), 'Public Debts and Private Assets: Explaining Capital Flight from Sub-Saharan African Countries', *World Development*, Vol. 31, No. 1, pp. 107–30.
- Ndikumana, L. and J. K. Boyce (2010), 'Capital Flight from Sub-Saharan Africa: Linkages with External Borrowing and Policy Options', *International Review of Applied Economics*, forthcoming.
- Nyarko, Y. (2007), 'Theoretical Foundations of Capital Flight', paper presented at the Senior Policy Seminar on Capital Flight in Sub-Saharan Africa: Implications for Macroeconomic Management and Growth, Pretoria, 30 October–2 November.
- UNECA (United Nations Economic Commission for Africa) (2007), *Economic Report on Africa 2007: Accelerating Africa's Development through Diversification*, UNECA, Addis Ababa.
- World Bank (1985), *World Development Report 1985*. World Bank, Washington, DC.
- World Bank (2006), *Global Economic Prospects 2006: Economic Implications of Remittances and Migration*. World Bank, Washington, DC.
- World Bank (2007), *Remittances Data Set*. World Bank, Development Prospects Group, Washington, DC. Available at [http://siteresources.worldbank.org/EXTDECPROSPECTS/Resources/476882-1157133580628/RemittancesData\\_updated2007.xls](http://siteresources.worldbank.org/EXTDECPROSPECTS/Resources/476882-1157133580628/RemittancesData_updated2007.xls)