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Alternative Exchange Rate Strategies and Fiscal Performance in Sub-Saharan Africa

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Abstract

This paper investigates the relationship between fiscal performance in 28 sub-Saharan African countries over the 1980-91 period with movements in the exchange rates, the terms of trade, and other macroeconomic aggregates. It finds that the tax base in most of these countries is heavily dependent on imports and import substitutes. Consequently, an overvaluation of the exchange rate in countries which adopted a fixed exchange rate strategy undermines the tax base and results in a widening of the fiscal deficit when the purpose of the strategy is to restore the real exchange rate to its equilibrium through fiscal contraction. Those countries which pursued a variable exchange rate strategy failed in attaining price stability, but exchange rate adjustment was critical in contributing to other macroeconomic objectives, particularly fiscal balance, competitiveness, and growth.

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Summary

Sub-Saharan African countries emerged from the 1970s with large and unsustainable fiscal deficits, which stemmed from the increase in government spending in the aftermath of the two oil shocks. During the 1980s, the internal imbalance was exacerbated by a protracted decline in terms of trade.

To alleviate internal and external imbalances, these countries pursued two different strategies. Those in the western and central African monetary unions (CFA franc zone) retained the "internal" adjustment path by maintaining a fixed exchange rate parity with the French franc as a nominal anchor to ensure fiscal discipline and low inflation. Most other countries, pursuing an "external" adjustment strategy, relied on the exchange rate to alleviate the effect of external shocks.

This paper investigates a sample of 28 sub-Saharan African countries for which a fiscal data base was generated for the 1980-91 period. It finds that, in those countries where the tax base is highly dependent on imports and import substitutes, exchange rate movements in response to external shocks are critical for sustaining and improving fiscal performance. The paper uses statistical analysis to correlate the ratio of tax revenue to GDP with movements in the real exchange rate and the terms of trade.

The adopted adjustment strategies explain, to a large extent, the fiscal performance of sub-Saharan African countries in the 1980s. Fiscal deficits widened in countries with fixed exchange rates but were reduced in countries with variable exchange rates. Other indicators, such as the current or the primary balance, confirmed that the countries with fixed rates were not able to arrest the deterioration in their fiscal performance, particularly during the second half of the 1980s when a real effective exchange rate appreciation coincided with a deterioration in the terms of trade.

The major difference in the fiscal performance of the two groups of countries lies on the revenue front. The countries with variable exchange rates improved their ratio of tax revenue to GDP, and countries with fixed exchange rates experienced a significant decline. Both groups succeeded in reducing their government spending in relation to GDP. However, in countries with fixed exchange rates the effort was mostly concentrated in capital expenditures; the government wage bill, which should have been targeted for reduction in real terms under the internal adjustment strategy, actually increased in relation to GDP.

The paper finds that to the extent that an overvaluation of the exchange rate undermines the tax base, the internal adjustment strategy leads to a widening of the fiscal deficit when its purpose is to restore the real exchange rate to its equilibrium level through fiscal contraction. Those countries with variable exchange rates failed to achieve price stability, but exchange rate adjustment was critical in contributing to other macroeconomic objectives, particularly fiscal balance, competitiveness, and growth. Hence, presenting internal and external adjustment strategies as policy alternatives in sub-Saharan Africa is not meaningful. Rather, these two strategies must be complementary.

I. Introduction

Sub-Saharan countries in Africa (SSA) emerged from the 1970s with large and unsustainable fiscal deficits, stemming from the increase in government spending in the aftermath of the two oil shocks. The commodity price boom, associated with these shocks, fueled government spending in a broad range of activities, including investment in public enterprises and marketing boards. Because such spending entailed a large expansion in government employment and other recurrent expenditures which are difficult to reverse, it resulted in a structural imbalance between revenue and expenditure which has persisted in most African countries throughout the 1980s. The internal imbalance was exacerbated by a sharp deterioration in the external environment, characterized by a protracted decline in terms of trade, an increase in real interest rates, and a sharp decline in the availability of external bank credit.

To alleviate both the internal and external imbalances, sub-Saharan African countries pursued two different strategies. Countries in the western and central African monetary unions (CFA franc zone) retained the "internal" adjustment path predicated on maintaining a fixed exchange rate parity with the French franc (FER countries) as a nominal anchor to ensure fiscal discipline and low inflation. Most other SSA countries addressed the decline in the terms of trade by a variable exchange rate strategy (VER countries). This "external adjustment" strategy allowed the external current account to adjust directly, albeit at the price of substantially higher inflation.

With a pegged exchange rate, a real devaluation can be attained through deflationary policies, provided price and wage flexibility prevails. On the other hand, when the tax base is highly dependent on international trade, an overvaluation of the real exchange rate would tend to undermine tax revenue and the attainment of fiscal balance (Tanzi, 1989). With a floating or a managed exchange rate, it could be argued that the inflation generated by lack of fiscal and monetary discipline would also undermine government revenue--due to lags in tax collection, and adjustments of public utility prices--causing growing fiscal deficits, an unfavorable investment environment, and slow growth (Tanzi, 1977).

This paper argues that for economies where the tax base is highly dependent on imports and import substitutes, an exchange rate which is adjusted toward its equilibrium level is a critical element in improving fiscal performance. To the extent that an overvaluation of the exchange rate undermines the tax base, internal adjustment results in a widening of the fiscal deficit, when its very purpose is to restore the real exchange rate to its equilibrium level through fiscal contraction. Hence, presenting the internal and external adjustment strategies as policy alternatives is not meaningful. Rather, these two strategies must be complementary.

Having established a fiscal data base for 28 SSA countries for the 1980-91 period, the paper assesses the implementation of the two alternative strategies by comparing the fiscal performance of the two groups of countries during the 1980-91 period. [1] After analyzing the structure of the tax base in SSA, the effect of the real exchange rate, terms of trade, and inflation on the tax base and fiscal performance is described. In the FER countries, it will examine the fiscal implications of maintaining a pegged exchange rate in the face of a sharp deterioration in the terms of trade. In the VER countries, the effects of an active exchange rate policy on the fiscal balance and the costs which it has entailed in terms of inflation are discussed.

The paper is organized as follows: Section II briefly outlines the macroeconomic setting for sub-Saharan African countries at the end of the 1970s and the two strategies pursued. Section III analyzes the fiscal performance of the two groups of countries by decomposing the fiscal aggregates into major tax and expenditure categories. Section IV attempts to assess the major determinants of budgetary revenues under the two strategies, particularly the role of the exchange rate, terms of trade, inflation, and discretionary tax policy. This section also reports the results of some empirical testing of these relationships. Section V analyses the effects of exchange rate policy on public expenditures in the two country groups. Section VI summarizes the overall fiscal and macroeconomic record and draws some policy conclusions.

II. The Initial Macroeconomic Setting

1. The legacy of the 1970s

Government participation and intervention in the sub-Saharan African economies have been substantial since independence, reflecting the prevailing view that the investment necessary for development and long-term growth would not be forthcoming through private investment alone.

The 1973 oil shock, associated with a boom in other commodity prices, resulted in a structural shift in the public expenditure pattern in sub-Saharan Africa, seemingly with little concern about the fiscal consequences of a possible sharp decline in commodity prices in the future. The succession of the two jumps in oil prices in 1973 and in 1979 was associated with record levels for the price of major African agricultural exports (coffee, cocoa, cotton, tea) (Chart 1). While these commodity booms initially strengthened public finance in most SSA countries, they also fueled spending on a rapidly expanding civil service, heavy investment in public enterprises, and a proliferation of government agencies, such as price stabilization funds, marketing boards, and development banks.

Total public expenditure in sub-Saharan Africa grew from 19 percent of GDP in 1970 to 29 percent of GDP in 1980 (Schelizi, 1985). This upward

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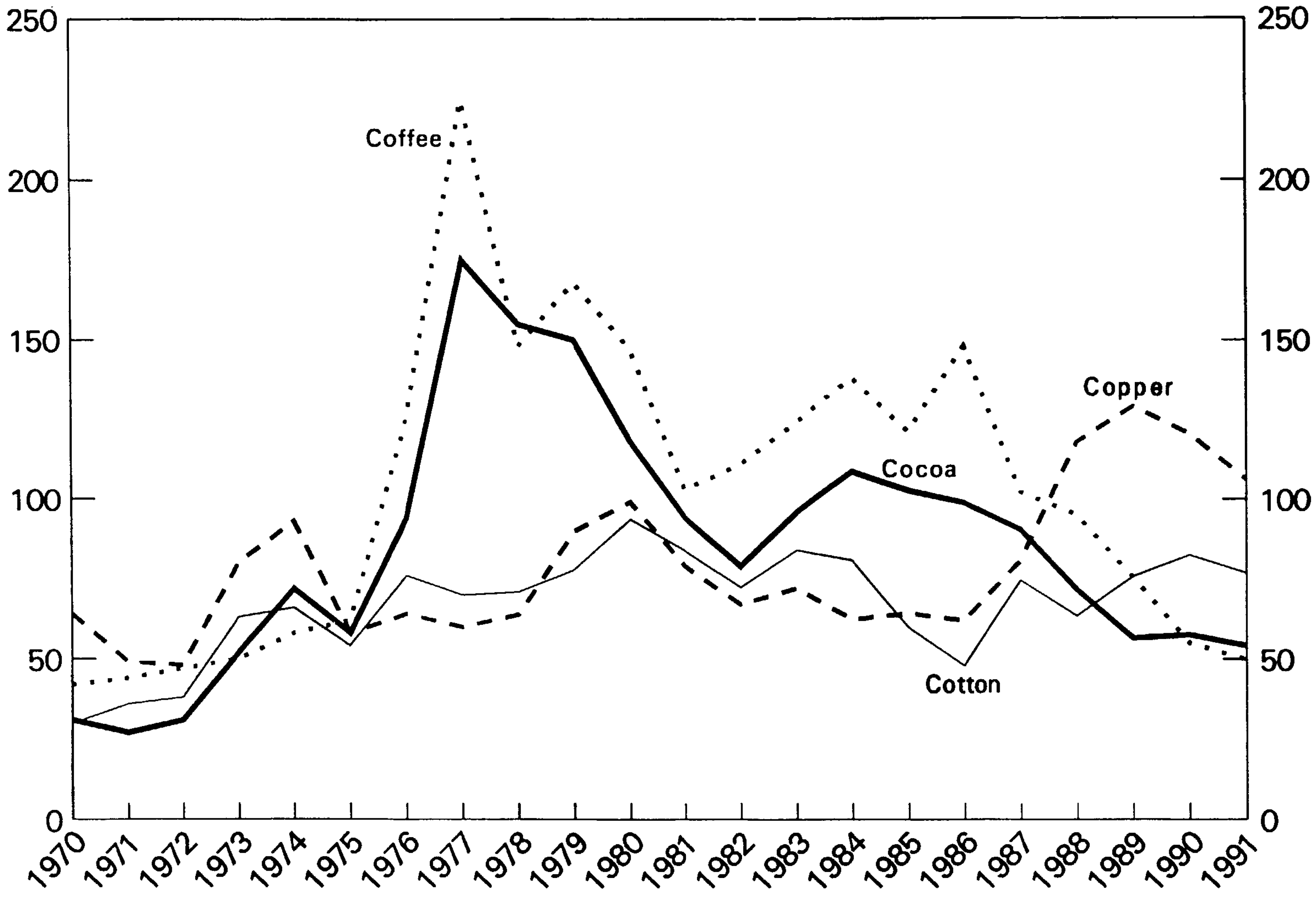
[1] Countries covered by the paper are listed in Appendix Table 1.

CHART 1.

Sub-Saharan Africa: Prices of Commodity Exports, 1970 - 91

(In U.S. cents per pound)



Source: International Financial Statistics.

trend was common to virtually all the countries in the region with the exception of Tanzania and Burkina Faso. Moreover, the capital formation component of government expenditures, which was around 5 percent of GDP, expanded very rapidly after 1974 and, by 1980, it reached 9.3 percent of GDP. 1/ This had the effect of increasing the average investment rate in sub-Saharan Africa, bringing it close to the average prevailing in South Asia. Beyond a noteworthy improvement in infrastructure, public investment focused on capital-intensive manufacturing aimed at import substitution and sheltered from outside competition by protectionist policies. Much of this investment resulted eventually in large losses in public enterprises and banks, and a fall in domestic savings. Measured crudely as the ratio of the growth of output to the rate of investment in a given year, Africa's returns on investment have fallen steadily since the 1960s. By the 1980s they were only about one tenth of the level in south Asia. 2/ Other public investment in areas such as health, education and other social infrastructure, were accompanied by an increase in public employment which introduced a secular upward shift in recurrent government spending which subsequently proved very difficult to reverse.

On the revenue side, sub-Saharan African countries raised their tax ratios mostly through an expansion in the volume of imports. By the late 1970s tax revenues were averaging around 17 percent of GDP and total government revenue was comparable with that of other developing countries (Tanzi, 1981). Despite the improvements in resource mobilization, tax revenue was reaching certain limits imposed by the tax structure and was falling short of government spending needs. The high dependence of revenue on taxes on international trade--reaching over 60 percent of total revenue in 1980 3/--has been shown to be a potential source of instability and to impose significant efficiency costs on the development of the traded goods sector, inhibiting its competitiveness. Taxing international trade even more would raise this dependency further and, in any case, would face serious limitations, not the least of which would be a potential increase in fraud and cross-border smuggling. Yet, attempting to expand the tax net to

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1/ In terms of GDP, the average investment rate in the 1970s was 20.6 percent in sub-Saharan Africa and 21.6 percent in south Asia.

2/ See: World Bank, 1989. Returns of investment (rate of return on equity) in percent:

	SSA	South Asia
61-73	30.7	21.3
73-80	13.1	21.6
80-87	2.5	22.4

3/ This dependence is defined as taxes on imports and exports, nontax revenue on imports and exports, plus excise, sales taxes, and fees levied on imports as a percentage of total tax receipts. See Section IV.1.

domestic transactions, without considerable strengthening of tax administration, was difficult to achieve, in the short term.

The expansion of government spending, coupled with difficulties in raising additional revenue, had the effect of generating growing fiscal imbalances, which were financed primarily by external borrowing at a time when banks were seeking to recycle the oil money and when "sovereign risk" was perceived as minimal. By 1980, the average government deficit, excluding grants, in our sample of 28 countries, was 9 percent of GDP and external debt was ten times higher than in 1970, reaching 35 percent of GDP. Thus, despite the sharp increase in commodity prices in the 1970s, large fiscal imbalances had already appeared as a result of excessive government spending. These imbalances--coupled with the large accumulation of external debt--were inconsistent with a stable macroeconomic environment which would be conducive to the emergence of a strong private sector and sustained growth. Hence, prior to the deterioration in the terms of trade, SSA countries entered the 1980s with a need for lowering fiscal deficits to correct internal and external imbalances and reduce the crowding out of the private sector. There was also a need for improving public finance management to reduce nonproductive expenditures and to alleviate the distortions introduced in protecting the manufacturing base through trade restrictions and high customs tariffs.

2. The initial imbalances

Different adjustment strategies may be justified in the two groups of countries either because of a different starting point at the beginning of the 1980s, or a different intensity in the external shocks. While both groups of countries had a tendency to overspend during the 1970s, the FER countries started the decade with a lower budget deficit to GDP ratio (excluding grants) in 1980 (7.6 percent) than did the VER countries (10.4 percent). The external current account deficit was also more favorable for the FER countries (6 percent of GDP) than for the VER countries (10 percent of GDP). On the other hand, the impact of the increase in the real interest rate and the structure of external debt in the two groups of countries were roughly similar. Between 1980 and 1983 the average ratio of total external debt to GDP was 45 percent for the FER countries and around 47 percent for the VER countries. The proportion of nonconcessional debt out of total outstanding debt in 1980 was 22 percent and 24 percent respectively for the FER and VER countries. These figures suggest that, on average, the sharp increase in real interest rates at the beginning of the 1980s affected the two groups of countries in a similar fashion. However, between 1985 and 1991, FER countries experienced a much sharper deterioration (31 percent) in the terms of trade than VER countries (17 percent). 1/ This difference comes primarily from export price developments, as movements in import unit

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1/ If terms of trade are weighted by the share of trade of each country in the group, the figures are 23 percent for the VER countries and 37 percent for the FER countries.

values for the two groups of countries increased in a similar fashion. Moreover, this deterioration was more broad based in the FER group where only one country--Senegal--experienced an improvement in its terms of trade since 1985, while in the VER group five countries (out of 17) experienced such an improvement (Chart 2).

To summarize, while the FER countries started the decade with a much more favorable fiscal and external current account position, they experienced a sharper decline in terms of trade than the VER countries since the mid-1980s. These factors, coupled with fairly close levels of concessional aid, relative to GDP, would suggest that the overall need for adjustment in the two groups of countries was similar. Thus, an explanation of the divergence in the fiscal (and other macroeconomic) performance between the two groups during the 1980s, would lie more in the policy strategy chosen and its implementation than in differences in the initial imbalances.

3. Two alternative strategies

An adjustment strategy predicated on a nominal exchange rate as an anchor, has been epitomized by the 13 CFA franc zone country members of the West and Central African Monetary Union. 1/ Their common currency--the CFA franc--has been pegged to the French franc since 1948 at the rate of CFAF 50 = FF 1. 2/ For about three decades the monetary union and the peg to the French franc served these countries relatively well. Convertibility of their currency, guaranteed by the French Treasury, and mobility of capital throughout the zone, helped provide these countries with monetary stability, low inflation, and an environment conducive to investment and growth (Boughton, 1991).

One of the main benefits of a fixed exchange rate regime for a small open economy is that it provides a convenient nominal anchor around which a consistent set of macroeconomic policies can be formulated. However, such an anchor can only hold if both fiscal and monetary discipline are achieved. Such discipline was indeed intended by the institutional arrangements of the

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1/ Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal, and Togo are members of the West African Central Bank (BCEAO), and Cameroon, Central African Republic, Congo, Equatorial Guinea, Gabon, and Chad are members of the Central African Central Bank (BEAC). The analysis conducted in this paper excludes Chad and Equatorial Guinea due to data limitations.

2/ Other countries pegged their exchange rate and never devalued during the 1980s. Djibouti pegged its currency to the U.S. dollar, Comoros--a member of the CFA franc zone until 1981--pegged its currency to the French franc at the same rate of the CFA franc, Lesotho and Swaziland pegged their currency to the rand, while Ethiopia officially maintained a fixed exchange rate with respect to the U.S. dollar even though most transaction values reflected a floating black market exchange rate. Aside from data problems in Djibouti, Comoros, and Ethiopia; Lesotho and Swaziland were omitted to have a clearer focus on the economic issues facing the CFA franc zone, a relatively homogenous group of countries.

two monetary unions which provided for the independence of their respective central banks and which limited the extension of credit to member country governments according to well-specified norms.

The cost of adhering to a common external standard is that members of the zone give up the use of the exchange rate as a policy instrument. This cost depends, inter alia, on the nature of the macroeconomic imbalances. Lack of fiscal discipline spills directly into an external imbalance since, beyond the norms governing domestic financing, and in the absence of a domestic financial market, fiscal deficits can only be financed from abroad. In the event of a temporary external shock of a transitory nature, this exchange regime can provide sufficient flexibility through the use of external reserves for efficient stabilization. However, a more protracted external shock, such as the one which has taken place in SSA since 1979, may require a change in relative prices. If a nominal exchange rate adjustment is ruled out, a real exchange rate adjustment has to be brought about through downward flexibility in nominal prices and wages. 1/

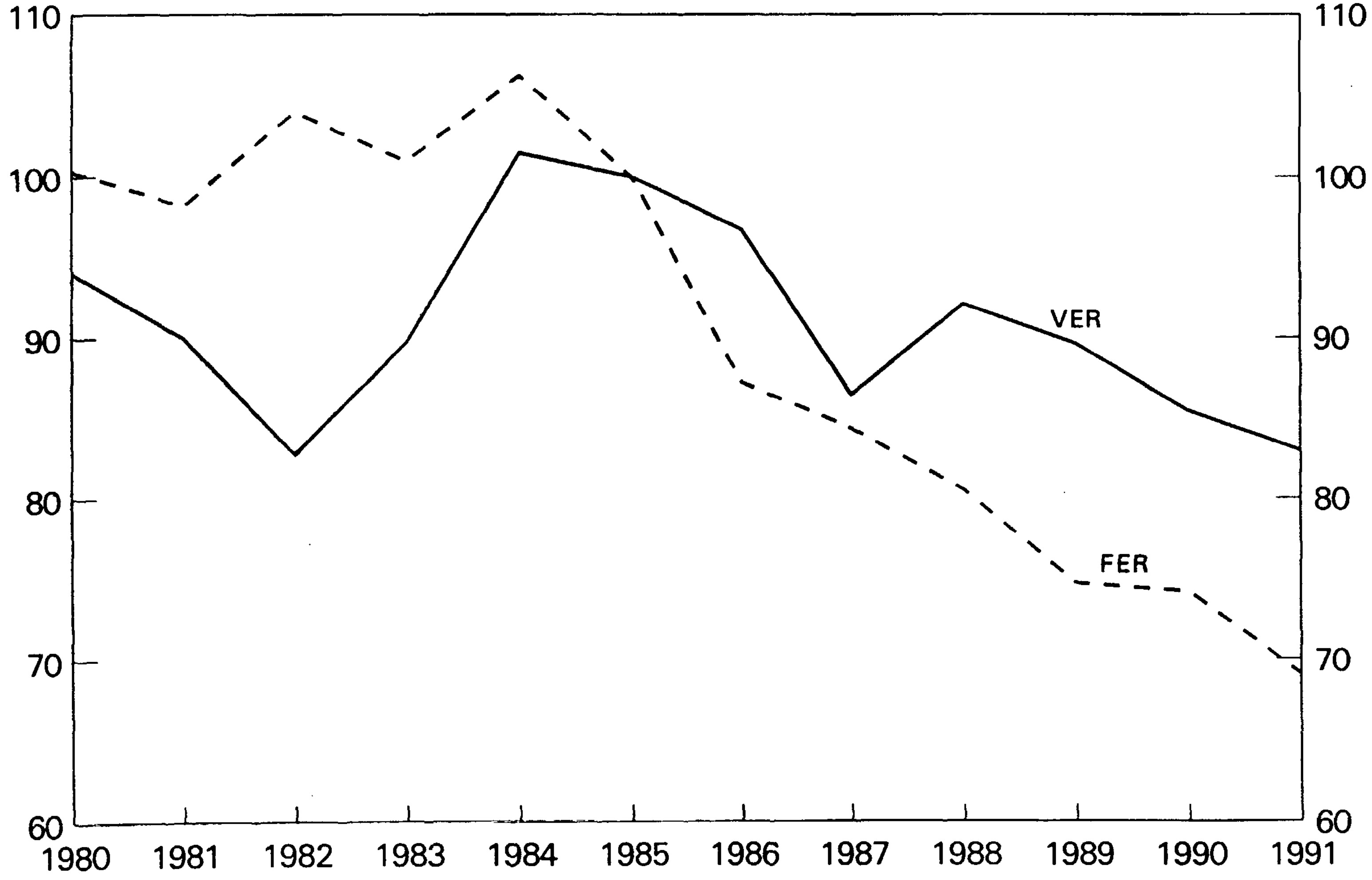
A deterioration of the terms of trade would lower real income and reduce the demand for all goods, including nontradables, creating an excess supply of these goods. Therefore, to balance supply and demand, the relative price of nontraded goods would have to fall, which amounts to a depreciation of the real exchange rate. 2/ But, if some degree of price rigidity exists and, in the absence of strong productivity gains in favor of the traded goods sector, a substantial cost in terms of lost output and unemployment would be incurred which, in turn, would further weaken the fiscal balance through loss of tax revenue. What is interesting in the FER countries is that the nominal exchange rate anchor is not determined with respect to a basket of currencies which reflect their major export destinations or sources of imports, but is pegged to the French franc which is governed by French macroeconomic objectives, including for the last several years the maintenance of a parity with the German mark, anchor of the European Exchange Rate Mechanism. Therefore, as discussed below, since the mid-1980s, the FER countries suffered two external shocks: a major terms of trade deterioration, and an appreciation of the French franc with respect to the FER countries' trading partners' currencies, which was translated into a real appreciation of the CFA franc.

1/ Another adjustment instrument that can and has been used by some SSA countries is commercial policy. Theoretically, a real devaluation can be approximated through a uniform surcharge on imports and a uniform subsidy on exports (see: Devarajan, S. and J. De Melo, 1987). However, this approach is difficult to implement in SSA, partly because of the need to impose subsidies on value-added rather than on gross value of exports and partly because of substantial unrecorded border trade from non-CFA countries, particularly Nigeria.

2/ For a discussion of how a nominal devaluation can be translated into a real devaluation and help the economy to regain equilibrium, see Edwards, 1989.

CHART 2.
Sub-Saharan Africa: Terms of Trade: FER and VER Countries, 1980 - 91

(1985 = 100)



Sources: WEO data base, and International Financial Statistics.

FER: Fixed Exchange Rate.

VER: Variable Exchange Rate.

While the institutional arrangements of the two monetary unions generated a liberal environment with respect to capital movements and currency convertibility in the FER countries, they did not protect them from heavy government intervention in the economy. Indeed, the FER and VER countries shared the common features of ambitious public investment programs, the dominance of public enterprises in manufacturing and banking, consumer and producer subsidies, and a burdensome regulatory environment, particularly with respect to taxation and labor practices. External trade restrictions and high customs tariffs were also utilized to protect their common investment strategy. Such government intervention ultimately undermined the fiscal accounts and the banking system. Saddled with structural fiscal deficits from the outset of the 1980s, the FER countries faced a double objective with a single instrument--fiscal policy--under government control: (a) to bring down the fiscal deficit to a level which was consistent with the targeted inflation and monetary policy set by the two central banks; (b) to engineer a change in relative prices between traded and nontraded goods in response to the decline in terms of trade, so as to restore external competitiveness. Theoretically, a reduction of the fiscal deficit would also reduce the real value of the CFA franc. However, as discussed below, it was not possible to achieve the two objectives with one instrument because of the strong relationship between fiscal revenues and the exchange rate.

In contrast to the FER countries, the 17 VER countries included in this study are a more heterogeneous group. Nigeria and Zaire, the largest countries in this group, have been mostly pursuing expansionary fiscal and monetary policies resulting in high inflation, albeit with occasional attempts at stabilization. Ghana, Madagascar, Tanzania, Uganda and Zambia have undergone successive adjustment programs and, with the assistance of the Fund and the World Bank, have adopted structural reforms to move away from heavy government interference in virtually every aspect of the economy. Other countries, such as The Gambia, Malawi and Zimbabwe, have established a relatively liberal environment stemming from a strong private sector. However, all the VER countries have opted to allow the exchange rate to seek an equilibrium, although a number of countries liberalized their exchange and trade policies only gradually throughout the 1980s. 1/

While this group of countries used restrictive fiscal and monetary policies in varying degrees to reduce the internal imbalances, the fiscal and monetary discipline induced by an independent central bank was lacking, resulting in relatively high inflation and frequent currency depreciation.

1/ For instance, The Gambia dropped the peg to the pound sterling only in 1986.

III. Fiscal Performance in the 1980s

1. Fiscal deficits

As mentioned earlier, the overall budget deficit (excluding grants) for the FER countries in 1980-81 amounted on average to 7.6 percent of GDP, or substantially less than the deficit levels for the VER countries (10.4 percent). 1/ By the end of the decade, the fiscal imbalance in the FER countries widened to 8.2 percent, while the VER countries reduced their fiscal imbalance to 6.2 percent of GDP (Table 1 and Chart 3). Moreover, most of the deterioration for the FER countries occurred between 1985 and 1989, while in the VER countries most of the improvement achieved prior to 1985 became more difficult to sustain. Nevertheless, there was some fiscal retrenchment for both groups of countries during the most recent years (1989-91 period). If major exporters of natural resources (NRE) are excluded from both groups, the initial deficit levels are higher--10.6 percent and 11 percent respectively--as would be expected (Chart 3, lower panel). For the FER countries, excluding Natural Resource Exporters (NREs), the imbalance widens until 1989, followed by a small improvement in 1990-91 to about 9 percent of GDP. This indicates that the fiscal performance of the oil exporters among the FER countries has been worse than average. On the other hand, the VER countries, excluding Nigeria and Botswana, show the same type of sustained deficit reduction--from 11 percent of GDP in 1980-88 to 7.4 percent of GDP by 1990-91--as the average VER sample.

When interest costs are excluded and the focus is shifted to the deficit measure which can be directly affected by domestic policy (primary balance), the difference in performance in favor of the VER countries becomes even more pronounced. Interest costs have been roughly the same for the two groups of countries, doubling on average from 2 percent of GDP to 4 percent of GDP through the decade. In the FER countries, the primary balance shows a steady deficit--instead of deterioration--of around 4.3 percent of GDP, although when NREs are excluded there is some improvement (from 7.2 percent of GDP to 5.3 percent of GDP). Of the 11 FER countries, only two, Gabon and Senegal, succeeded in generating a primary surplus by 1991, although in the case of Gabon, it is mostly the result of higher oil exports and prices. In contrast, the VER countries have experienced a more pronounced and sustained improvement in their primary balance, with a deficit reduction from the equivalent of 9 percent of GDP in 1980-81 to 1.3 percent of GDP in 1990-91 (Chart 4). This improvement is equally striking when NREs are excluded. Of the 17 countries in the VER group, Ghana, Kenya, Nigeria, and Tanzania succeeded in generating a primary surplus by 1991.

1/ For a description of the fiscal data set generated for this paper, see Appendix.

Table 1. Sub-Saharan Africa: Summary of Fiscal Performance

(In percentage of GDP)

	1980-81	1985-86	1990-91	Changes 1980-81/1990-91
1. Overall deficit excluding grants				
SSA	-9.4	-7.8	-8.3	1.1
FER	-7.6	-8.0	-8.2	-0.6
FER*	-10.6	-8.9	-8.9	1.7
VER	-10.4	-6.5	-6.5	3.9
VER*	-11.0	-8.3	-7.4	3.6
2. Total revenue				
SSA	18.9	18.9	18.9	0.0
FER	20.3	21.4	17.1	-3.2
FER*	17.4	18.3	15.3	-2.1
VER	17.9	19.5	20.2	2.4
VER*	16.5	17.7	18.5	1.9
3. Total expenditure				
SSA	28.6	28.1	27.0	-1.6
FER	27.9	29.4	25.3	-2.6
FER*	27.9	27.2	24.1	-3.8
VER	28.2	26.0	26.7	-1.5
VER*	27.6	26.1	25.8	-1.7

Source: SSA fiscal data base.

FER* - Excluding Cameroon, Congo, and Gabon.
VER* - Excluding Botswana and Nigeria.

Looking at the current fiscal balance sheds further light on the government's contribution to domestic savings. 1/ Evidence suggests that after some improvements during the first half of the decade, due to both a depreciation in the real exchange rate and an upturn in commodity prices, FER countries have not been able to generate public sector savings during the second half of the decade or contribute additional resources for the development of the private sector by reducing its indebtedness to the banking system. The current fiscal balance was in substantial surplus in 1980-81 (3.5 percent of GDP) but the surplus declined sharply since 1985 and turned negative in 1987 (Chart 5). The turn-around in the current balance over the decade (about 4.5 percentage points) is much sharper than the deterioration in the overall balance, pointing to the major causes of fiscal imbalance for the FER countries--recurrent revenue and expenditure rather than investment. If NREs are excluded, the same pattern prevails although the initial surplus is smaller and the deterioration less severe. Nevertheless, because of the improvement in their fiscal performance in 1990 and 1991, Burkina Faso, Gabon, Mali, and Senegal managed to generate a current account surplus.

In contrast to FER performance, the current balance was negative in VER countries at the beginning of the 1980s, but has shown a steady improvement since 1982, generating a surplus by the end of the decade for about half of the countries in that group. When NREs are excluded, public savings remain negative for most of the period but with a significant reduction in the deficit to 0.9 percent of GDP in 1990-91. On the whole, the improvement in the current balance in the VER countries was not as pronounced as the improvement in the overall deficit. This suggests a broadly based retrenchment in public expenditures touching both recurrent and investment expenditure, while in the FER countries adjustment since the mid-1980s seems to have been mostly carried out by cutting investment expenditures.

2. Sources of fiscal adjustment

The fiscal performance of the two country groups for the entire decade is shown in Charts 6 and 7. Both groups of countries succeeded in reducing their government expenditures in relation to GDP although the effort was somewhat greater in the FER countries. The major difference in their fiscal performance lies on the revenue front. While the VER countries improved their revenue performance by 2.4 percentage points of GDP, total revenue declined in the FER countries by 3.2 percentage points of GDP, with the result that, by the end of the 1980s, their revenue ratio stood well below that of the VER countries. The differences in revenue performance were

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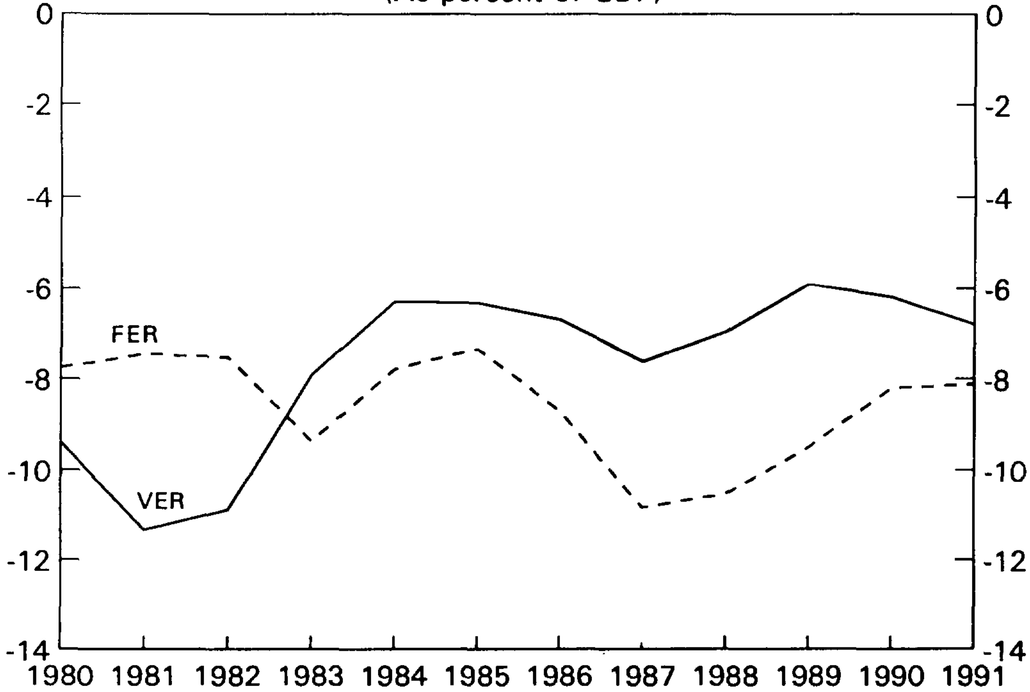
1/ The main limitation of the concept is the implicit assumption that all investment is good and all current expenditure (including health, education, operations, and maintenance) is of a consumption nature and does not contribute to growth.

CHART 3.

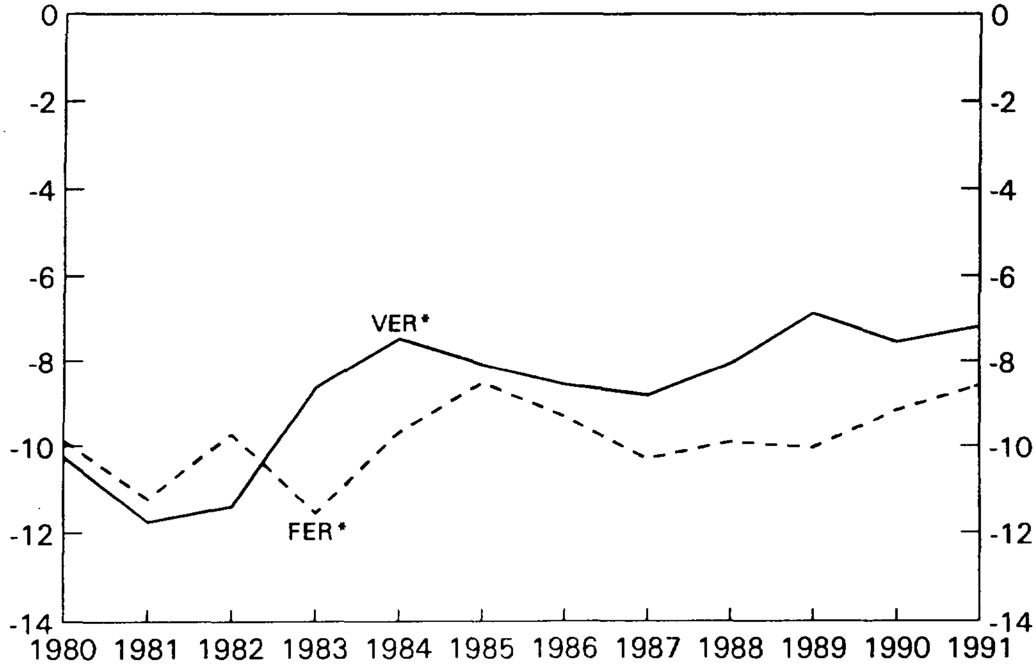
Sub-Saharan Africa: Overall Fiscal Deficit Excluding Grants:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters

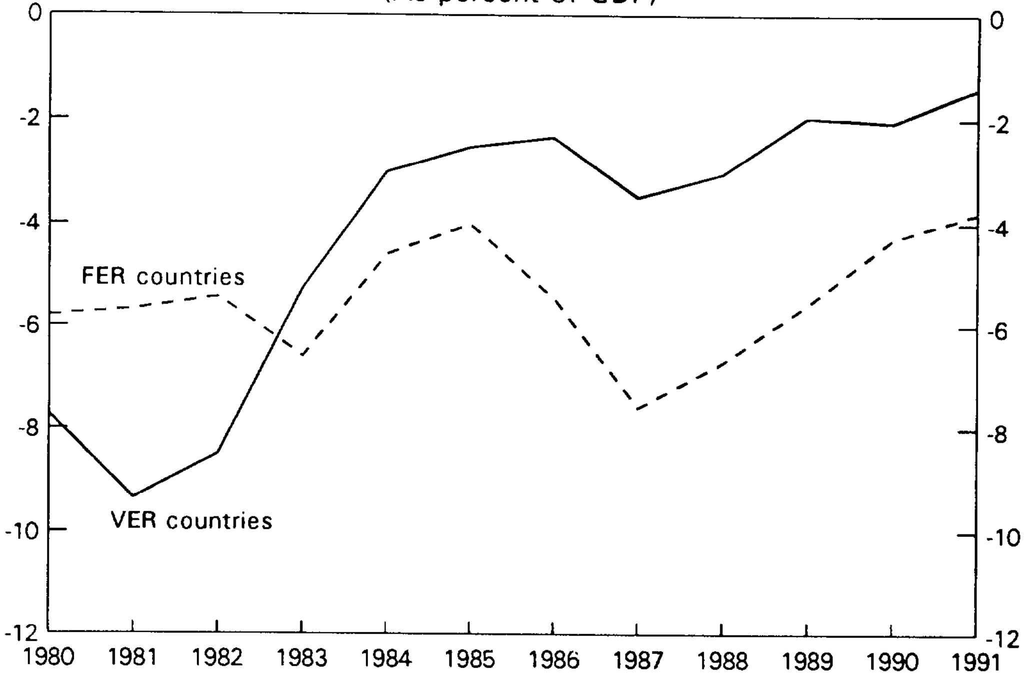


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 4.

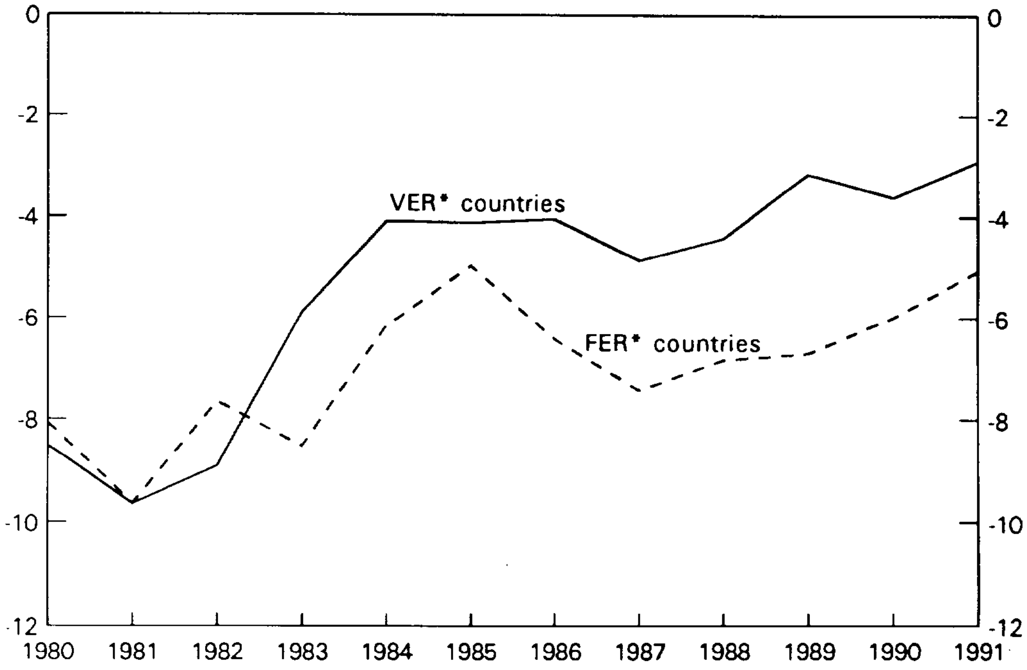
Sub-Saharan Africa: Primary Balance Excluding Grants:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate.
VER: Variable Exchange Rate.

Excluding Natural Resource Exporters

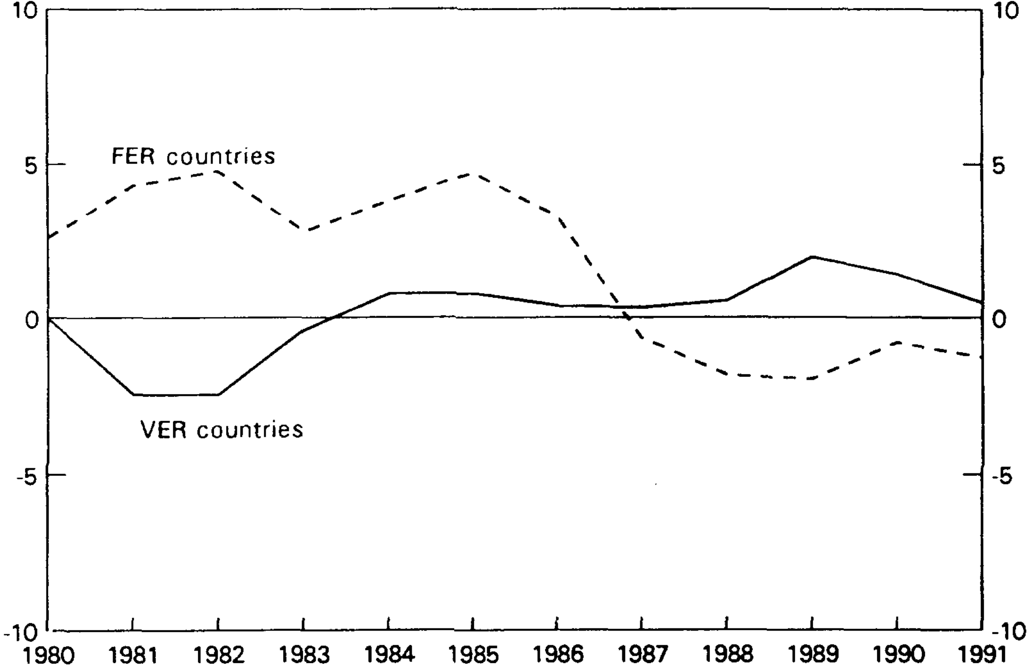


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 5.

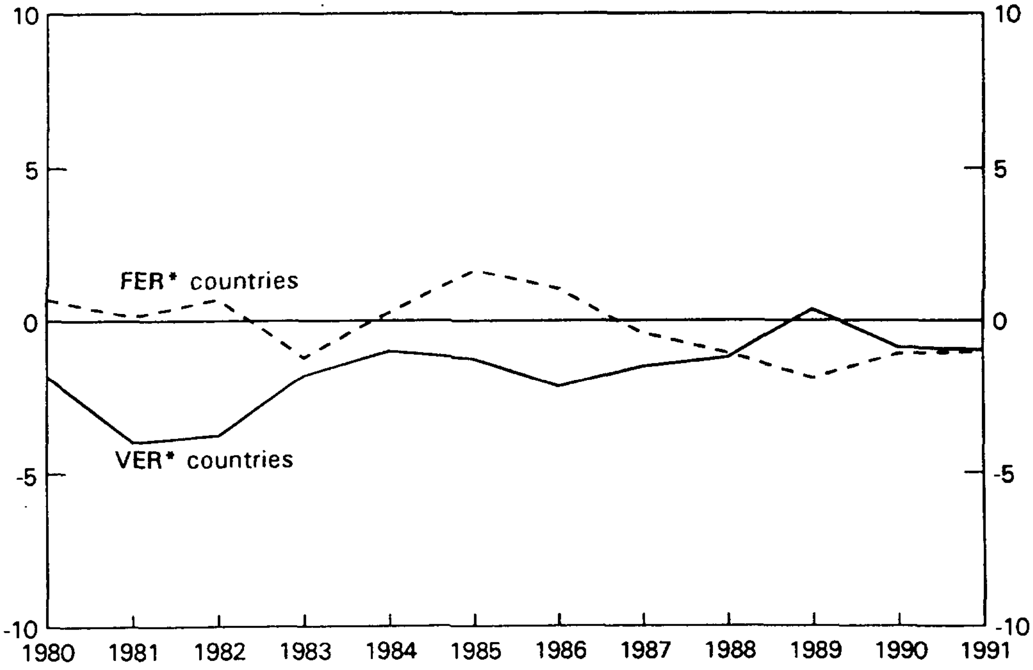
Sub-Saharan Africa: Current Balance Excluding Grants:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate.
VER: Variable Exchange Rate.

Excluding Natural Resource Exporters

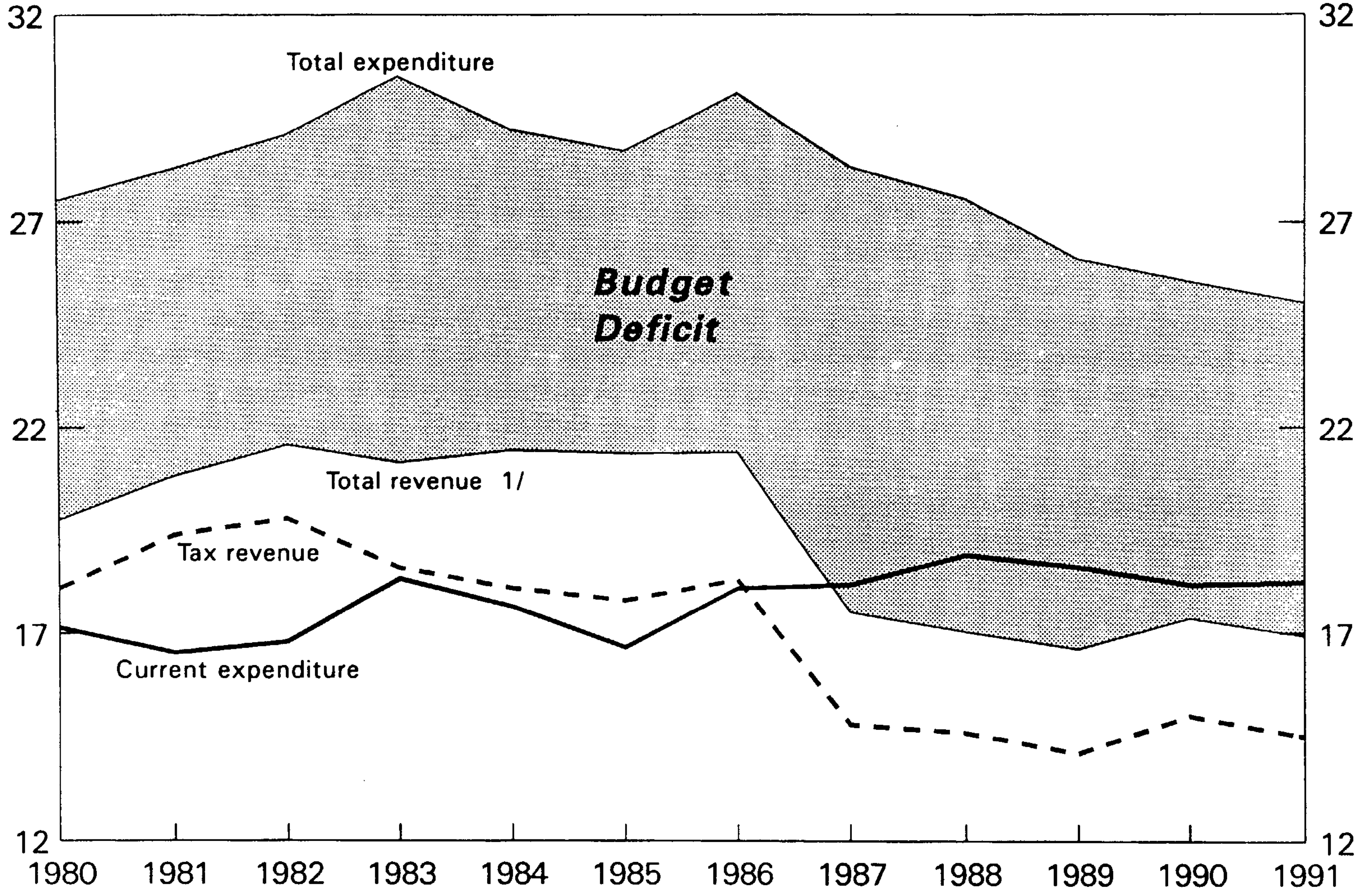


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 6.

Sub-Saharan Africa: Fixed Exchange Rate Countries: Revenue and Expenditure, 1980 - 91

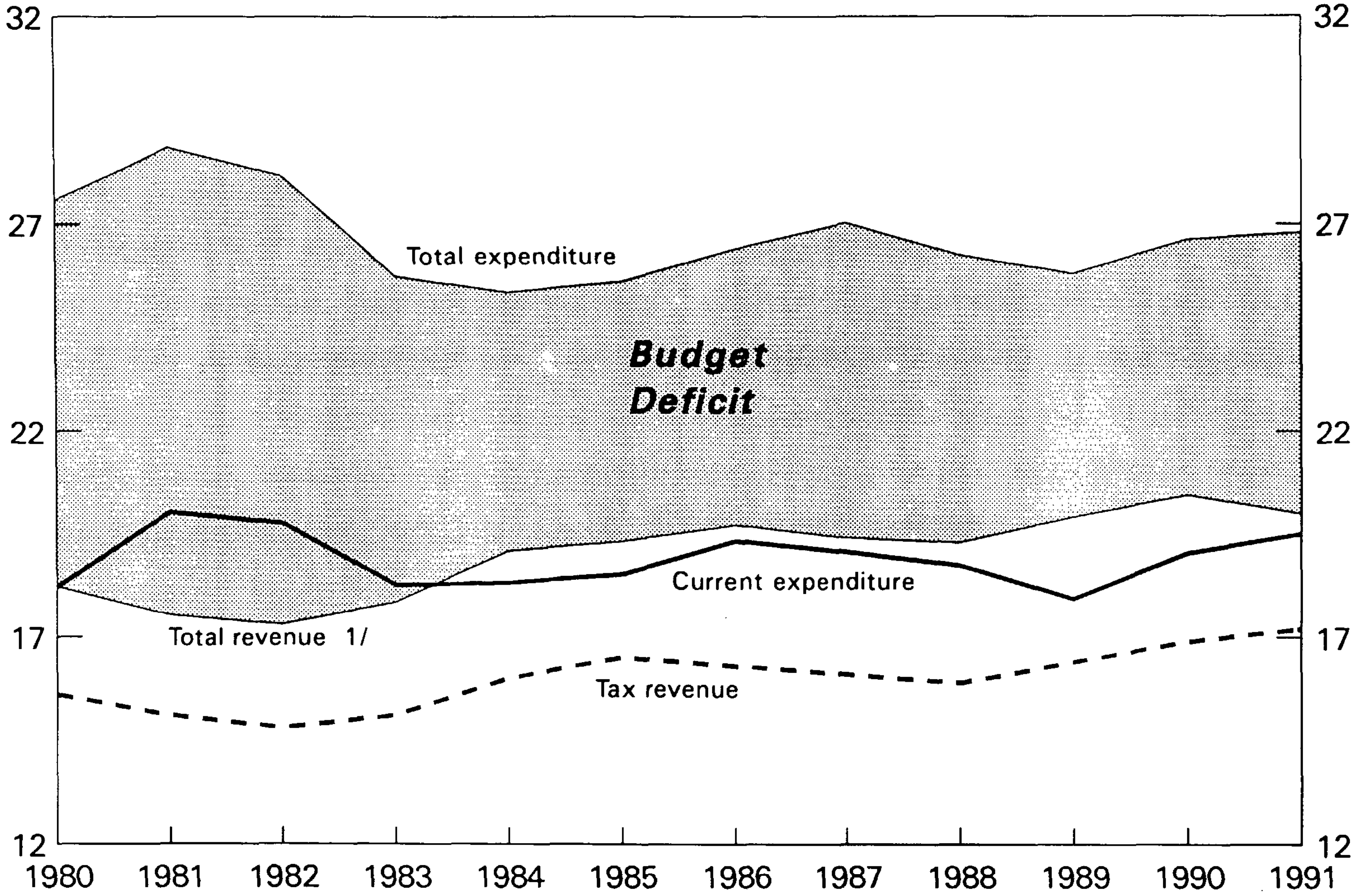
(As percent of GDP)



Source: Sub-Saharan Africa fiscal data base.

1/ Excluding external grants.

CHART 7.
Sub-Saharan Africa: Variable Exchange Rate Countries:
Revenue and Expenditure, 1980 - 91
(As percent of GDP)



Source: Sub-Saharan Africa fiscal data base.
1/ Excluding external grants.

mostly due to tax revenue 1/ which declined in FER countries by 21 percent (from 18.7 percent of GDP to 14.7 percent of GDP), and increased in the VER countries by 11 percent over the decade (from 15.4 percent of GDP to 17.1 percent of GDP) (Table 2). When exporters of mineral resources are excluded, the same trends prevail, albeit with milder slopes.

A breakdown of the various tax categories for both groups of countries is revealing (Table 2). The largest and most broadly-based decline in tax revenue in the FER countries stems from a fall in the ratio for taxes on international trade which fell by 2 percentage points of GDP, or a 40 percent decline from its level in 1980-81 (Chart 8). In the VER countries, this tax ratio fluctuated between 5 percent and 6 percent of GDP during the decade, but with virtually no change by the end of the decade (5.3 percent of GDP). These results, as well as those pertaining to taxes on goods and services, should be interpreted cautiously since tax reforms have tended to lower tariffs and shift taxation to domestic transactions. However, this pattern of tax reform has affected both groups of countries in a similar fashion. When the two tax categories are taken together, the FER countries have lost 2.3 percentage points of GDP while the VER countries have gained 0.8 percentage point. When NREs are excluded, the difference in performance is more striking: FER countries lost 2.7 percent of GDP, while VER countries gained 1.7 percent of GDP.

Taxes on goods and services in FER countries have declined by 20 percent throughout the decade when oil exporters are excluded, and by slightly less when they are included (Chart 9). This decline occurred despite concerted efforts at expanding the taxation of domestic transactions by introducing the VAT and broadening sales taxes to services and the distribution sector. Interestingly, Côte d'Ivoire and Cameroon succeeded in making some gains in this tax category, despite the overall downward trend, by broadening the tax base. In Côte d'Ivoire, taxes on goods and services were maintained at 6.5 percent of GDP over the entire 1987-91 period, despite declines in GDP and in per capita income. This relatively high ratio was achieved thanks to a broadening of the tax base to the informal sector (by a system of withholding at the wholesale level) and by extending the VAT to petroleum products. In the VER countries, this is the tax category where most progress was achieved, with the tax ratio rising from 3.8 percent of GDP in 1980 to 5.4 percent of GDP in 1991. The main reason for this progress is shifting some taxation from international trade to domestic sales, although the main base of indirect taxation remains imports.

Direct taxes declined in FER countries by 2.2 percentage points of GDP over the decade, but this mostly reflects lower taxes from oil-exporting enterprises following the reverse oil shock in 1986-87. If these oil exporters are excluded, the decline is much lower (0.9 percent of GDP). Nevertheless,

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1/ Nontax revenue which accounts for about 2 percent of GDP in both country groups hardly changed in the VER countries, and increased by 0.5 percent of GDP in FER countries.

Table 2. Tax Revenue Performance: FER and VER Countries
(In percentage of GDP)

	1980-81	1985-86	1990-91	Changes 1980-81/1990-91
1. Total revenue				
FER	20.3	21.4	17.1	-3.2
FER*	17.4	18.3	15.3	-2.1
VER	17.9	19.5	20.2	2.4
VER*	16.5	17.7	18.5	1.9
2. Tax revenue				
FER	18.7	18.1	14.7	-4.0
FER*	15.8	14.1	12.7	-3.1
VER	15.4	16.4	17.1	1.7
VER*	14.4	16.1	16.4	2.1
a. Taxes on international trade				
FER	7.0	6.1	5.1	-2.0
FER*	7.6	6.6	5.6	-2.0
VER	5.3	5.7	5.3	0.0
VER*	4.8	5.9	5.2	0.4
b. Taxes on goods and services				
FER	3.1	2.8	2.8	-0.3
FER*	3.4	2.9	2.7	-0.7
VER	4.1	4.2	5.1	1.0
VER*	4.6	4.6	5.8	1.2
c. Direct taxes				
FER	8.1	8.5	5.9	-2.2
FER*	4.3	4.0	3.4	-0.9
VER	5.9	5.7	6.1	0.2
VER*	4.8	4.6	4.8	-0.0
d. Other taxes				
FER	0.4	1.2	1.1	0.7
FER*	0.4	1.2	1.2	0.8
VER	0.4	0.7	0.7	0.3
VER*	0.5	0.8	0.8	0.3
3. Non-tax revenue				
FER	1.7	2.9	2.2	0.5
FER*	1.7	3.6	2.4	0.7
VER	1.9	1.6	1.9	-0.1
VER*	2.0	1.6	1.9	-0.2

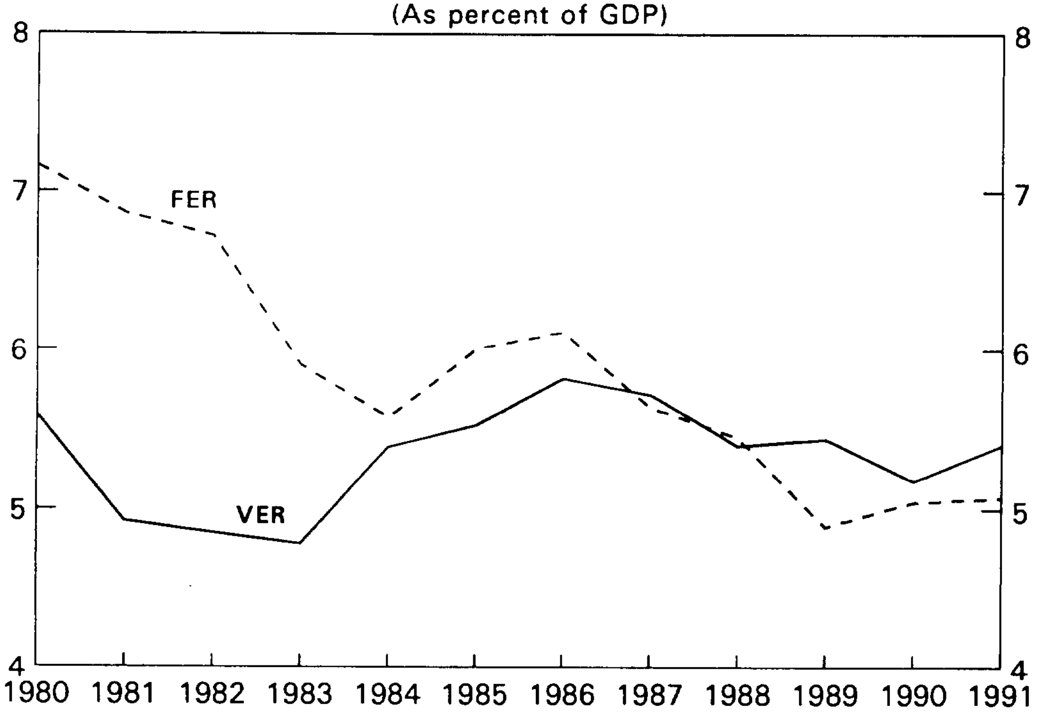
Source: SSA fiscal data base.

FER* - Excluding Cameroon, Congo, and Gabon.
VER* - Excluding Botswana and Nigeria.

CHART 8.

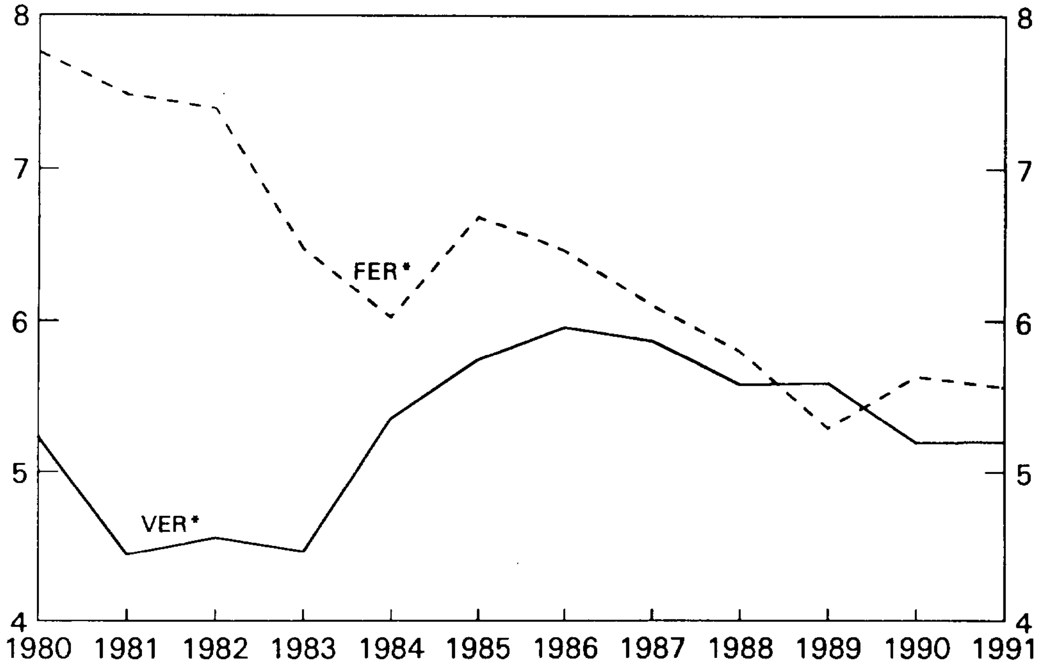
Sub-Saharan Africa: Taxes on International Trade:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters

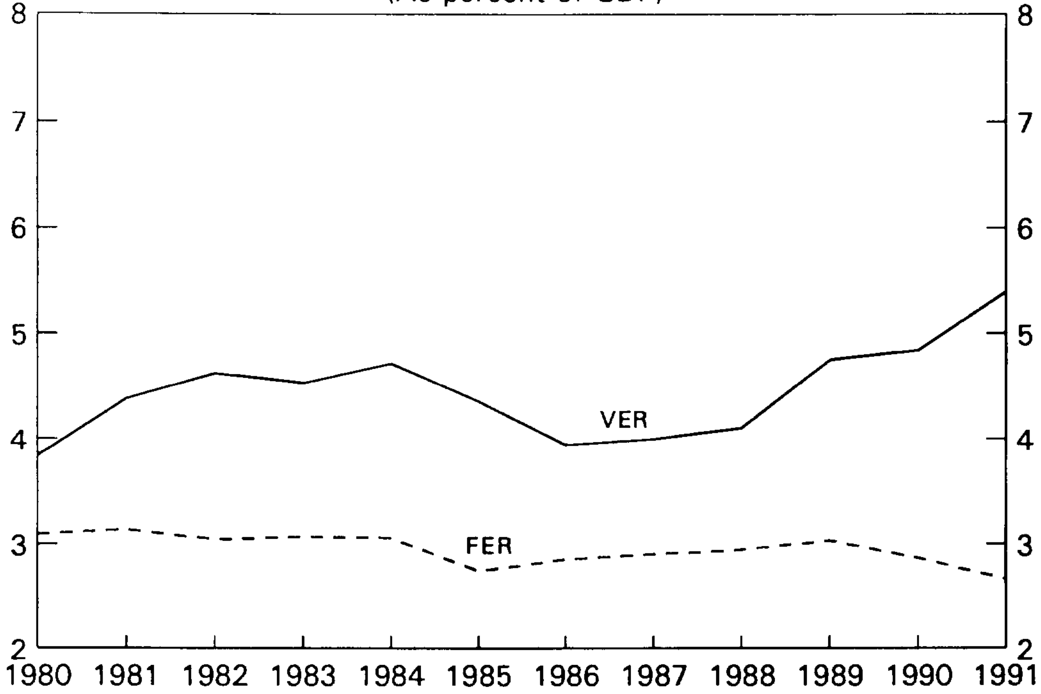


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 9.

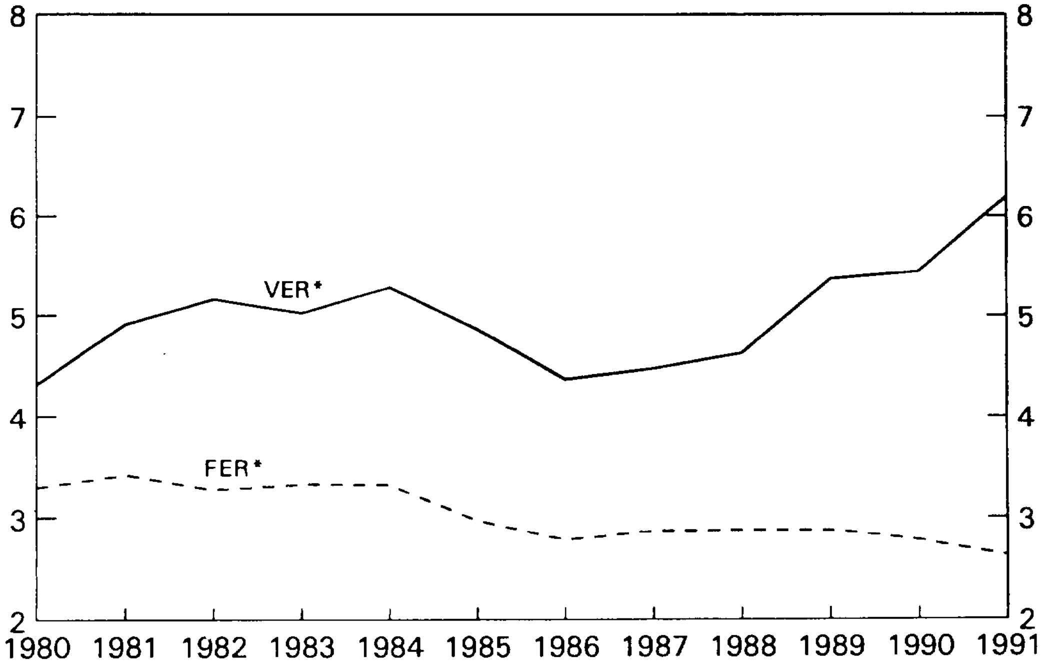
Sub-Saharan Africa: Taxes on Goods and Services:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters



Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

at 3.4 percent of GDP in 1990-91, this ratio for the FER countries is particularly low relative to other countries with similar income levels. In the VER countries, excluding Botswana and Nigeria, direct taxes remained remarkably steady at around 4.8 percent of GDP (Chart 10). However, when these countries are included, there is a gain in direct taxes, reflecting higher oil profits in Nigeria partly stemming from the sharp real depreciation of the naira which more than offset the decline in world oil prices.

IV. Determinants of Tax Revenue in SSA

The stark divergence in fiscal performance between the VER and FER countries in SSA raises a number of questions. What are the major factors contributing to the deterioration in revenue performance in the FER countries and the relative success of the VER countries? Why are the major gains and losses for the two groups concentrated on indirect taxes? To what extent have changes in the real exchange rate affected tax revenue and government expenditures in both groups of countries? Why were the FER countries unable to reduce their expenditures further and conform to the prescriptions of the nominal anchor and monetary policies of their two central banks? Before addressing these questions, it is important to establish the tax base profile in a typical SSA country.

1. The tax base

An analysis of the major components of the tax base in selected African countries--Cameroon, Côte d'Ivoire, Kenya, Mali and Tanzania--reveals that imports and the formal segment of the traded goods sector constitute the overwhelming share of the tax base in SSA (Table 3). In this sample, imports, exports, and the formal import substitution sector would account for 78 percent to 85 percent of tax revenue. As was mentioned earlier, "nontax revenue" mostly reflects implicit taxation of exports (particularly in NREs) and to a lesser extent taxation of imports through price stabilization funds. 1/

Imports constitute the largest segment of the tax base. 2/ These are either taxed directly through customs, or indirectly through sales taxes and excises. Broad-based sales taxes often yield more revenue from imports than from domestic transactions. In Mali, the VAT on imports produced more revenue in 1991 (12 percent of total revenue) than the VAT on domestic

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1/ In some countries, central bank profits constitute a sizeable share of nontax revenues.

2/ Explicit export taxes which were small in the early 1980s have been further reduced through tax reform, which has eliminated them in a number of countries. However, when implicit export taxes included among nontax revenue are counted, export taxes can become significant--between 1 percent and 2 percent of GDP.

Table 3. Tax Base in Sub-Saharan Countries

	Côte d'Ivoire 1990		Cameroon 1989/90		Mali 1990		Kenya 1989/90		Tanzania 1986/87	
	Millions of CFA francs	% of total receipts	Millions of CFA francs	% of total receipts	Millions of CFA francs	% of total receipts	Billions of shillings	% of total receipts	Billions of shillings	% of total receipts
1. Taxes on imports and traded goods sector	508.9	83.2	390.2	78.8	72.1	87.3	33.6	87.7	26.0	85.8
a. International trade	266.7	43.5	73.4	14.8	60.6	66.7	12.3	32.1	7.7	25.4
- Exports	8.0	1.3	4.7	0.1	0.1	--	0.1	--	--	--
- Imports	171.3	28.0	68.7	13.9	37.6	41.5	6.9	18.0	4.3	14.1
- Sales tax on imports	65.8	10.8	--	--	12.0	13.2	5.3	13.8	3.7	12.2
- Stabilization funds	21.6	3.5	--	--	10.9	12.0	--	--	--	--
b. Taxes on domestic transactions	144.7	23.6	95.8	19.4	11.1	12.2	11.0	28.7	12.7	41.9
- Sales taxes	48.2 1/	7.8	45.4	9.2	9.6	10.6	7.6	19.8	12.4	40.9
- Excises	90.0	14.7	35.4	7.1	1.0	1.1	3.0	7.8	0.3	1.0
- Vehicle registration and fees	6.5	1.0	5.0	1.0	0.5	--	0.4	--	--	--
- Other	--	--	10.0	2.0	--	--	--	--	--	--
c. Direct taxes on factors	97.5	15.9	221.0	44.6	7.4	8.2	10.3	26.8	5.6	18.5
- Profits	32.5	5.3	38.5	9.9	5.9	6.5	7.7	20.1	4.3	14.2
- Payroll taxes	65.0	10.6	37.5	9.6	1.5	0.2	2.6	6.8	1.3	4.2
- Mineral receipts	--	--	145.0	37.2	--	--	--	--	--	--
2. Taxes on nontraded goods sector	102.8	16.8	104.7	21.1	11.5	12.6	4.7	12.3	4.3	14.2
a. Domestic trade	46.9	7.7	69.0	13.9	7.3	8.0	2.5	6.5	1.2	4.0
- Licenses and registration	17.3	2.8	16.6	3.3	2.0	2.2	1.0	2.6	0.2	0.1
- Services	29.6 2/	4.8	18.7	3.8	5.3	5.8	1.5	3.9	1.0	3.3
b. Factors	55.9	9.1	35.7	7.2	4.2	4.6	2.2	5.7	3.1	10.2
- Labor	44.2 3/	7.2	9.4	1.9	2.1	2.3	1.7	4.4	2.1	6.9
- Property and capital	11.7	1.9	24.3	4.9	2.1	2.3	0.5	1.3	1.0	3.3
Total receipts	611.7	10.0	494.9	10.0	90.6	100.0	38.3	100.0	30.3	100.0

Source: Data from country authorities and IMF staff estimates.

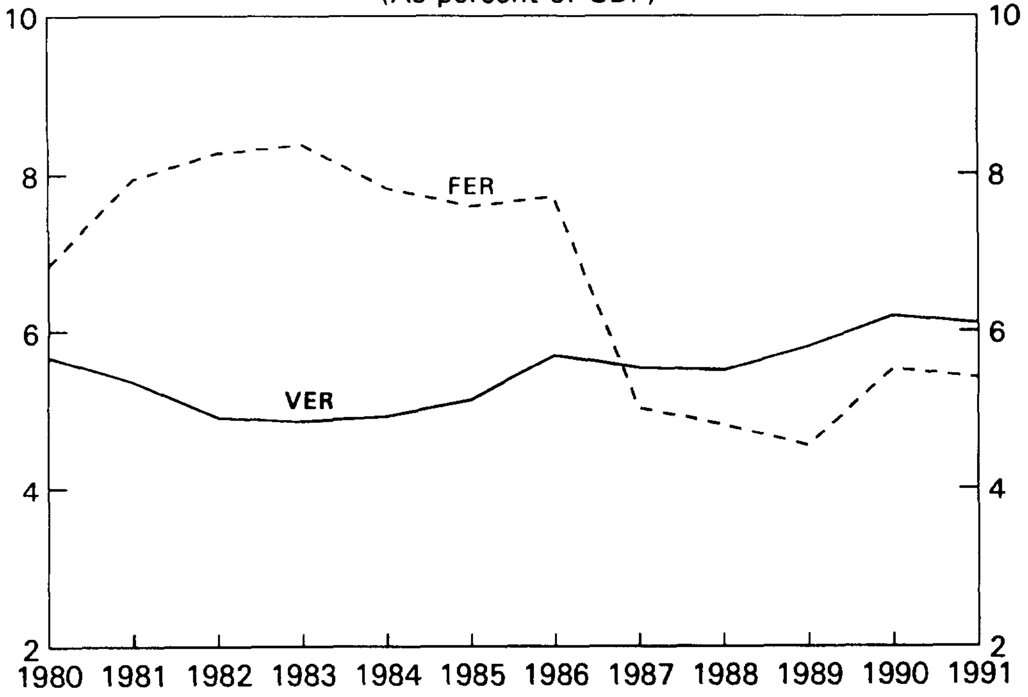
1/ Of total sales tax proceeds of CFAF 58.0 million, CFAF 10 million were collected from the informal sector and excluded.

2/ TPS CFAF 12 million, water charges CFAF 18 million.

3/ Of which CFAF 34.2 million is tax witheld from government employees.

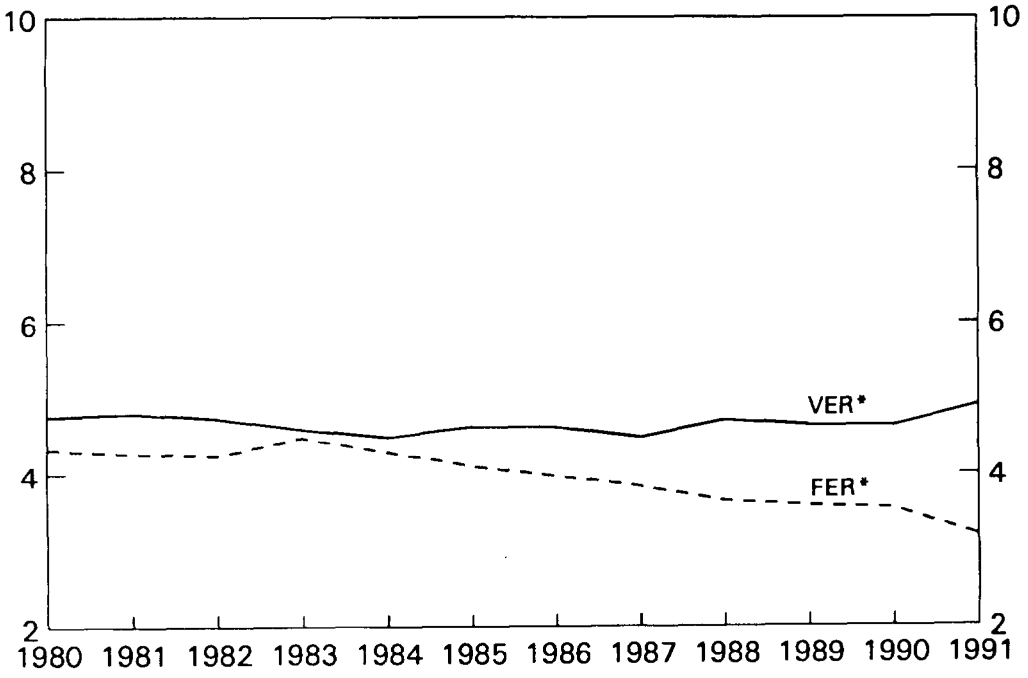
CHART 10.
Sub-Saharan Africa: Direct Taxes:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters



Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Caneroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

transactions (8 percent). In Côte d'Ivoire, it yields 16 percent of tax revenue as opposed to 14 percent on domestic transactions. In The Gambia, the sales tax on imports generates 32 percent of total revenue, while the sales tax on domestic transactions only accounts for 8 percent. Taxes on goods and services which are not imposed on imports are mostly levied on import substitutes manufactured domestically. These are concentrated on large manufacturing enterprises because they offer proper bookkeeping and well defined tax collection points which tax administrations can monitor easily, as opposed to the fragmented and elusive retail level. Among the largest contributors of excise and sales taxes are the manufacturers of mass market goods such as petroleum products, textiles, shoes, beverages, plastics, cigarettes, fertilizers, cement, and processed foods. On the other hand, small-scale manufacturing (furniture, leather products, and cottage industries) tends to escape the tax net.

Direct taxes are also mostly levied on large enterprises in the import substitution sector, either as corporate income tax or as an individual income tax withheld by these enterprises from the salaries and wages of their employees. The largest contributors of direct taxes are the same enterprises mentioned earlier--those producing mass consumption products--which contribute the bulk of tax revenues from excise and sales taxes.

The nontraded goods sector (mostly government, services, domestic trade, subsistence agriculture) contributes only 10 percent to 15 percent of total tax revenue. Government employees, utilities and the banking sector are the major contributors of tax revenue, mostly through direct taxes. However, the commercial banking sector has contributed very little since the mid-1980s in most SSA countries due to major losses sustained by this sector because of its exposure in financing exports and public enterprises. An unexpected result is that income taxes contributed by government employees account for only a small proportion (around 5 percent) of total tax revenue in most SSA countries, partly because defense and security personnel are tax exempt. Sales taxes on domestic services are limited to major utilities, the banking sector, and the largest hotels. Most other services and domestic trade are within the informal sector and escape taxation. Of course, the informal sector contributes tax revenue through its own spending on consumption goods (customs duties, sales taxes, excises) but the tax collection handles are again either imports or import substitutes.

The bulk of the nontraded goods sector, e.g., subsistence agriculture, small-scale manufacturing, and all the services provided by the informal sector, are outside of the tax net. Also virtually excluded because of weak compliance and tax administration are the relatively wealthy self-employed (doctors, lawyers, traders) and property owners. Some registration and license fees are imposed on property owners but, here again, an imported product--motor vehicles--accounts for the bulk of license fees.

Having established that imports, exports, and import substitution in the formal sector constitute the bulk of the tax base in SSA, we proceed to analyze the major factors which can have a major impact on these areas in both country groups: (1) the terms of trade; (2) the exchange rate; (3) demand management policies; and (4) efficiency factors--associated with the trade regime, price policy, and tax structure and administration.

2. Terms of trade

Declines in terms of trade have a direct price effect on the tax base by affecting the value of imports and exports, and an indirect effect by reducing income. While in FER countries the decline in the terms of trade can be attributed equally to a decline in export prices and an increase in import prices, in most VER countries the increase in import prices is the dominant factor. In contrast to a decline in export prices, which has a negative effect on government revenue by reducing nontax revenue and direct taxes, an increase in import prices will have, ceteris paribus, a positive effect on tax revenue by raising the domestic currency value of the major sources of taxation: imports and import substitutes. However, the income and price effects may reduce the volume of imports by shifting some of the demand for imports to cheaper import substitutes, but import value in relation to GDP may still be higher than it was in the base year. Depending on the relative impact of the decline in export prices and the increase in import prices, a deterioration in the terms of trade can have a positive effect on the tax base. If explicit and implicit export taxation tends to be low relative to import taxation, as is the case of most SSA countries--excluding NREs--the positive price effect may clearly dominate.

In FER countries, export unit values fell, on average, by 22 percent over the decade, while in VER countries they fell only by 5 percent, although countries reliant on coffee exports (Burundi, Rwanda, Uganda) experienced a much sharper decline. While these reductions have mostly affected nontax revenues, and indirectly tax revenues through their negative income effect, both FER and VER countries have had virtually the same rate of increase in import unit values--about 20 percent--during the decade. Thus, while the price effect of the terms of trade decline appears to be equally favorable for the tax base in both country groups, the negative income effect was more severe in the FER countries.

A decline in terms of trade also reduces national income, domestic demand, and overall tax revenue. When real GDP is adjusted for the decline in the terms of trade, growth of national income can be substantially weaker than the growth of GDP. Thus, in Côte d'Ivoire, the cumulative growth of real GDP between 1980 and 1991 was 5.3 percent, but when adjusted for terms of trade changes, real national income fell by 20.6 percent. This may be an extreme example since Côte d'Ivoire, with its exports concentrated on cocoa and coffee, has experienced a 56 percent decline in terms of trade between 1980 and 1991. However, other countries, particularly Cameroon, Gabon, Nigeria, Tanzania, and Uganda, have experienced even larger declines, although the incidence of this change on national income will depend on the relative shares of import and exports in GDP. [1] In the past, African countries were able to insulate terms of trade declines by maintaining domestic prices through stabilization funds. By maintaining the purchasing power of the agricultural sector, this mechanism also acted as a stabilizer of tax revenue. The severity of the terms of trade decline, coupled with the lack of resources to finance this stabilization, resulted in much lower producer prices and in some cases government payment arrears toward exporters (e.g., Côte d'Ivoire, Cameroon). Since overall growth in real national income during the second half of the 1980s was lower than growth in real GDP in most SSA countries, tax revenue would tend--ceteris paribus--to fall in relation to GDP.

3. The exchange rate

While terms of trade declines in SSA since the mid-1980s may have had a positive price effect on the tax base but a negative income effect, what really matters is how these terms of trade changes have been transmitted to the domestic economy through changes in the real exchange rate and in other macroeconomic policies. The interplay between terms of trade developments and the exchange rate will determine critical components of the tax base: import unit value, import unit value relative to the GDP deflator, import volume, import composition, the ratio of import duties to imports (the effective import duty rate), and income generated by the traded goods sector.

Changes in the nominal exchange rate will affect both the unit value of imports and the GDP deflator. A real depreciation of the exchange rate would tend to raise import unit values relative to the GDP deflator and vice versa. It will also tend to increase the unit values of import substitutes and exports relative to nontraded goods. Therefore, a real depreciation of the domestic currency would tend, ceteris paribus, to increase tax revenue from the traded goods sector in relation to GDP. This price effect may have a negative impact on the volume of imports but a positive impact on domestic production of import substitutes and on tax revenue--both direct and indirect--which derives from it. As already noted, the tax base is heavily weighted toward both imports and import substitutes. In addition, by raising producer prices of exportables, real depreciation would also moderate the negative impact of a decline in international commodity prices on the income of the export sector, and its demand for tradeables.

a. Import unit value and the GDP deflator

The evolution of the relationship between terms of trade and real exchange rate in FER and VER countries is shown in Charts 11 and 12. In the FER countries, while the terms of trade remained roughly stable in the first half of the decade, the CFA franc depreciated substantially vis-à-vis the

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[1] To obtain national income, real GDP should also be adjusted by net factor income to abroad which, for SSA, further exacerbates the downward adjustment to GDP on account of the sharp increase in debt servicing.

U.S. dollar, bringing down the real effective exchange rate by about 13 percent, with the result that the import unit value in CFA francs actually increased. However, there was a substantial decline in import volume in the FER countries (20 percent), particularly when oil exporters are excluded (44 percent). Consequently, tax revenues for the FER countries remained, on average, roughly stable during that period, but registered a decline when oil producers are excluded (Table 4).

Since 1985, the terms of trade took a turn for the worse, declining by about 30 percent, mostly as a result of a fall in export prices. The 1987 reverse oil shock caused a marked deterioration in the fiscal revenues of Cameroon, the Congo, and Gabon. Yet, the real exchange rate moved in the opposite direction by appreciating sharply in 1986 and 1987 and maintaining much of the appreciation for the remainder of the decade (Chart 11). For the FER countries, this was a second external shock since this appreciation was caused by the strengthening of the French franc vis-à-vis the U.S. dollar, and indirectly by the strengthening of the German mark. By 1990-91, the two largest economies in the franc zone, Côte d'Ivoire and Cameroon, incurred the highest real appreciation (36 percent and 32 percent respectively), followed by Benin (22 percent). This currency appreciation has been a major contributor to a decline in import unit values in the FER countries when measured in CFA francs, and in the difficulties experienced by the import substitution sector, particularly the formal manufacturing sector.

Another factor contributing to a decline in import unit values in both domestic and foreign currencies was a change in the composition of recorded imports, typically induced by recessionary conditions, toward basic necessities and lower value items. For instance, food imports have increased as a share of total recorded imports in FER countries, and there has been a tendency to replace higher priced imports by imports of cheaper substitutes (e.g., used cars instead of new ones). In Cameroon, products bearing high customs duty, 1/ fell from 35 percent of imports in 1985/86 to 28 percent of imports by 1990/91. This may also reflect the tendency since 1985 for a larger proportion of such imports by Benin, Cameroon, and Niger in particular, to have originated unrecorded from Nigeria and other neighboring countries. This drives down the average effective duty rate on imports since basic necessities bear lower customs duties (and sales taxes) than consumer manufactures.

Thus, the combination of the appreciation of the CFA franc and changes in the composition of recorded imports has reduced import unit value in CFA francs by about 15 percent in the FER countries during the second half of the decade. Despite a substantial increase in c.i.f. import prices in foreign currency, the ratio of import unit values to the GDP deflator--which as roughly stable during the 1980-85 period--has also declined by about

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1/ Cigarettes and tobacco, beverages, furniture, textiles, plastics, glass products, aluminum, vehicles, pesticides, lubricants, electrical machinery, and electrical appliances.

Table 4. External Sector Determinents of Tax Revenue on FER and VER Countries
Index numbers (1985 - 100) except where indicated

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Terms of Trade												
FER	100	98	104	101	106	100	87	84	80	75	74	69
VER	94	90	83	90	101	100	97	86	92	90	85	83
Real Exchange Rate												
FER	113	106	101	98	97	100	111	117	113	108	111	107
VER	109	117	130	127	104	100	101	93	98	93	82	81
Import Value in local currency												
FER	58	69	76	88	99	100	84	83	85	86	85	87
VER	52	54	60	64	81	100	154	285	420	727	850	920
Import Volume												
FER	115	113	105	93	87	100	99	91	91	82	84	81
VER	125	120	110	199	98	100	104	102	113	116	124	123
Unit Value/GDP deflator												
FER	100	102	99	104	102	100	94	94	96	99	93	95
VER	118	101	97	86	94	100	133	202	255	365	539	655
Import Value/GDP 1/												
FER	28	30	27	26	25	26	24	21	22	21	19	18
VER	28	28	26	22	25	24	27	28	28	29	31	33
Customs Receipts/import value 1/												
FER	23	22	23	22	21	21	24	24	23	22	21	21
VER	15	16	18	18	17	17	17	17	17	17	18	18

Source: SSA fiscal data base, World Economic Outlook Data.

1/ In percent.

7 percent in the second half of the 1980s (Table 3). However, the GDP deflator understates the price relationship between nontraded goods and imports--as well as import substitutes--to the extent that it also includes export prices. Indeed, a fall in export prices raises the ratio of import unit value to the GDP deflator by depressing the denominator, as was the case in Côte d'Ivoire and Gabon where export prices fell more than import unit values. On the other hand, countries which did not experience a sharp decline in relative export prices--Mali, Senegal and Togo--have had a large decline in the price of imports relative to the GDP deflator, ranging between 20 percent for Togo and 45 percent for Senegal.

In the VER countries, the real exchange rate followed terms of trade developments more closely (Chart 12). During the first half of the decade, it appreciated by 13 percent, in parallel with a similar improvement in the terms of trade, causing import unit values to decline. Since 1985, while the terms of trade deteriorated by 17 percent, the average real depreciation reached 20 percent, and there was no evidence of a change in the composition of imports. Thus, while the ratio of import unit values to the GDP deflator was stable during the first half of the decade, it increased on the average by 70 percent during the second. The largest increases occurred in countries where currencies depreciated rapidly--Madagascar, Nigeria, Uganda, and Tanzania.

b. Import volume and the import to GDP ratio

The divergence in the trajectories of the real exchange rate and terms of trade in the FER countries has severely undermined the competitiveness of the traded goods sector and growth performance. Cocoa and coffee producer prices were reduced by more than half in nominal terms in Cameroon, Côte d'Ivoire and Togo, falling in some cases below production costs. Export proceeds from mineral products (oil in Cameroon, Gabon, and Congo, uranium in Niger, phosphates in Togo) declined sharply with an immediate impact on government revenue from lower royalties and income taxes.

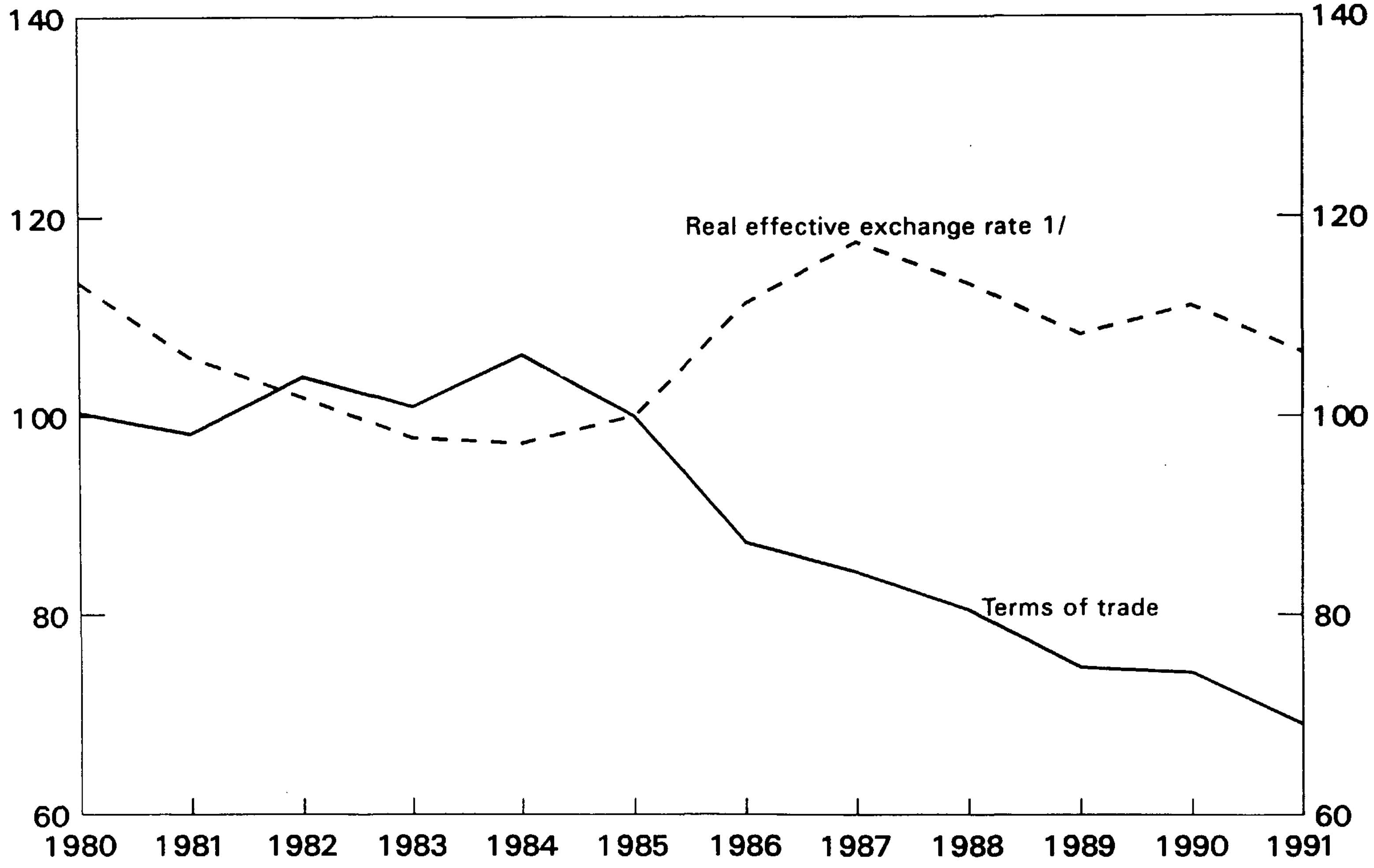
The second half of the 1980s also coincided with import liberalization, which lowered customs tariffs and relaxed quantitative restrictions in FER countries. While more imports may have contributed to customs duties receipts, they nevertheless exposed the import substitution sector to stiffer competition in the wake of a decline in domestic demand at a time when import prices were falling due to exchange rate appreciation. Moreover, both Nigeria and Zaire sharply depreciated their currencies in real terms, which heightened the competitiveness of their traded goods sectors, causing substantial market penetration in the FER countries. Overall, the growth of real GDP in FER countries declined on average from 3 percent during the first half of the decade to 1.2 percent during the second half, with a concomitant decline in per capita income (Table 5). In contrast, the annual growth rate in VER countries rose from 2.1 percent to 3.6 percent during 1986-91.

Finally, the decline in the competitiveness of the traded goods sector in FER countries has resulted in an expansion of the informal sector, further undermining the tax base. The incentives to operate in the informal

CHART 11.

Sub-Saharan Africa: Real Effective Exchange Rates and Terms of Trade: FER Countries, 1980 - 91

(1985 = 100)



Sources: **WEO data base, and staff estimates.**

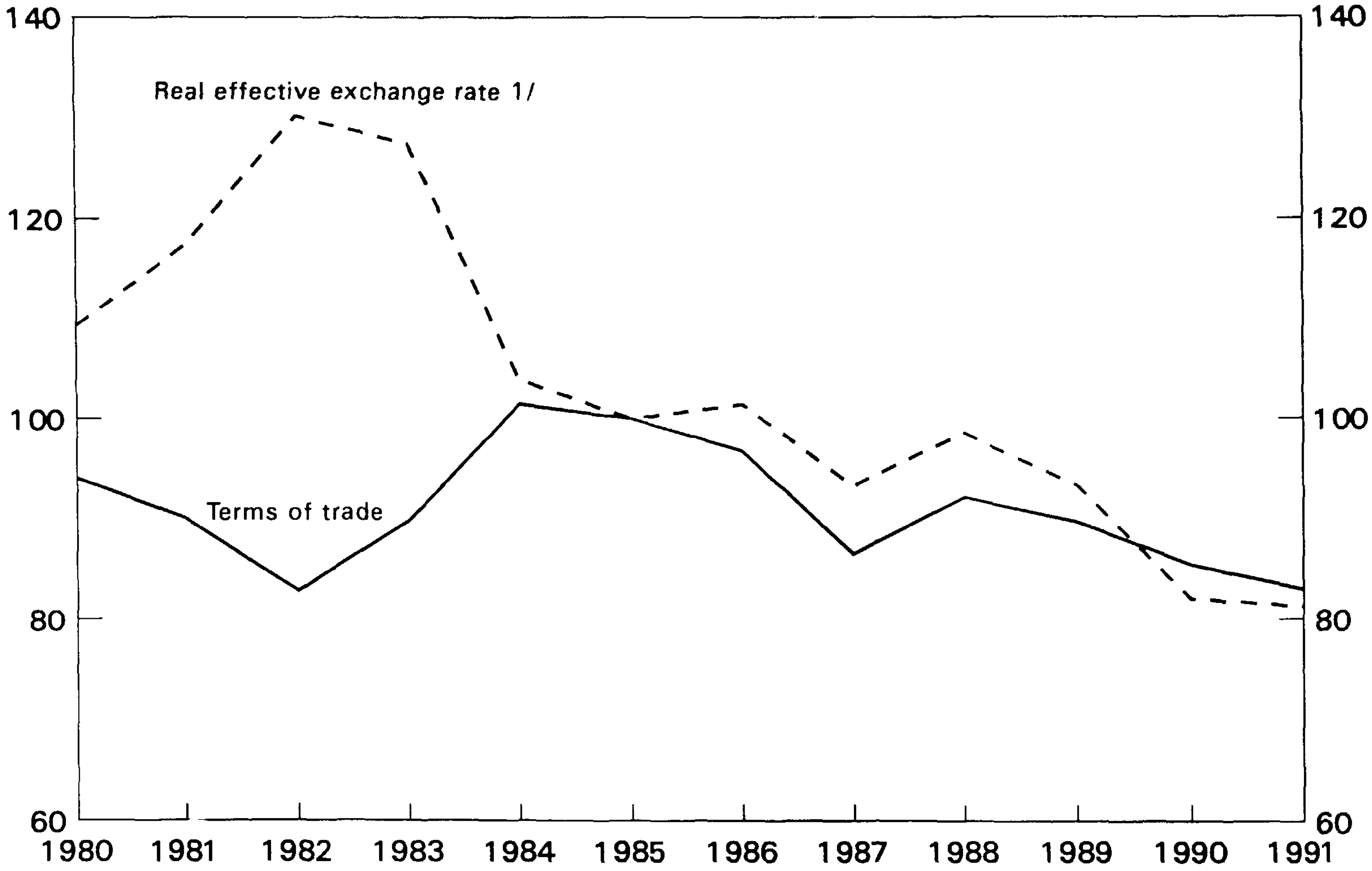
FER: Fixed Exchange Rate.

1/ Foreign currency per unit of domestic currency; trade weights adjusted for informal trade with The Gambia, Ghana, Nigeria, and Zaire.

CHART 12.

Sub-Saharan Africa: Real Effective Exchange Rates and Terms of Trade: VER Countries, 1980 - 91

(1985 = 100)



Sources: WEO data base, and staff estimates.

VER: Variable Exchange Rate.

1/ Foreign currency per unit of domestic currency; trade weights adjusted for informal trade with The Gambia, Ghana, Nigeria, and Zaire.

Table 5. Macroeconomic Indicators

(Average annual rate in percent)

	1980-85	1986-91	1980-91
Real GDP Growth Rate			
FER countries	3.0	1.2	2.1
VER countries	2.1	3.6	2.9
Inflation Rate			
FER countries	9.4	1.6	5.5
VER countries	23.7	33.3	28.5
Monetary Expansion			
FER countries	14.7	2.6	8.7
VER countries	21.4	30.8	26.1
Gross Capital Formation/GDP			
FER countries	22.6	17.6	20.1
VER countries	19.6	18.6	19.1
External Current Account/GDP			
FER countries	-6.1	-5.9	-6.0
VER countries	-6.9	-4.5	-5.7
Imports/GDP			
FER countries	27.2	20.1	23.6
VER countries	25.6	29.2	27.4
Debt/GDP			
FER countries	52.1	74.3	63.2
VER countries	54.2	107.2	80.8
Debt Service/Exports			
FER countries	23.7	25.1	24.4
VER countries	25.4	39.9	32.7

Source: WEO data and staff estimates.

sector under an overvalued exchange rate become particularly strong. On the supply side, moving into the informal sector improves a producer's competitiveness by avoiding the costs associated with the formal sector's regulatory framework, import duties and other taxes, license fees, and labor regulations. On the demand side, the consumption pattern shifts toward cheaper substitutes, mostly unrecorded imports from Nigeria and Zaire, offered by the informal trading sector. One indicator of the expansion of the informal sector is the export of CFA francs to neighboring countries--Nigeria, Zaire, Ghana, and The Gambia--in exchange for goods. These currency notes are then remitted to Europe (mainly through London) and repurchased by the central bank in France. 1/ Such repurchases, which can be interpreted as the net trade balance by the informal sector in favor of the more competitive neighboring countries, increased from less than FF 5 billion in 1985 to a peak of FF 12 billion in 1992. 2/

In the 1970s, import volume was rising steadily in SSA in the wake of the commodity price boom and external borrowing, making up for any occasional decline in import unit values. But with the collapse of export prices and the need to undertake fiscal retrenchment, the demand for imports--both public and private--declined. Recorded imports in the FER countries declined throughout the decade but particularly during the second half, falling--by 1991--to 70 percent of the import volume of 1980. In the VER countries, import volume also declined during the first half of the decade by 23 percent, but increased during the second half by a similar magnitude, with the result that, by 1991, import volume was at about the same level as in 1980. As a percentage of GDP, import volume declined for both groups of countries during the first half of the decade. However, during the second half, VER countries maintained their import levels, while FER countries incurred a 20 percent decline.

The combination of changes in import prices in local currency, import volume, and the composition of imports, determines a critical component of the tax base, namely the value of recorded imports in relation to GDP. In the FER countries, recorded imports declined from 29 percent of GDP in 1980-81 to 19 percent in 1990-91, with the downward trend accelerating after 1985 (Table 3). This shrinkage in the tax base by 10 percentage points of GDP on the import side and a concomitant decline in the production level of the formal import substitute sector--instead of a resurgence in import substitution under adequate exchange rate protection--goes a long way in explaining the weakening of the tax revenue record in the FER countries.

1/ These flows should be distinguished from capital movements which are mostly effected through the banking system.

2/ See: "Secrétariat" (several issues). On August 1 and 2, 1993, in reaction to a sharp increase in the outflow of their currency, the 13 CFA franc zone countries suspended the repurchase of their currency notes, in effect partially suspending the convertibility of the CFA franc.

VER countries also experienced a reduction in their imports in relation to GDP during the first half of the decade, very much in line with FER countries (from 28 percent to 25.5 percent of GDP). However, with the real exchange rate depreciation which took place after 1985, imports increased on average to 32 percent of GDP by 1990-91. Thus, by 1991 VER countries exceeded the imports/GDP ratio which they had at the beginning of the 1980s.

4. Efficiency factors

In addition to the macroeconomic factors outlined above, tax revenue has been affected in SSA by discretionary government policy and the various institutional changes carried out over the past decade under structural adjustment programs supported by the Fund and the World Bank. In most SSA countries, there has been an attempt to improve overall efficiency by allowing the market mechanism to determine prices and dictate most investment decisions, rather than continuing to follow the failed industrial strategy of the 1970s. In the fiscal area, this approach entailed broadening the tax base, deregulating prices, lowering external tariffs, liberalizing imports, shifting the taxation system toward domestic transactions, and reforming the income tax. It is difficult to measure the overall impact of these tax reforms on tax revenue, but they would tend to reduce distortions and create an enabling environment for investment and higher growth.

Governments have also resorted to ad hoc fiscal measures in reaction to the economic pressures they have experienced in the 1980s. Additional taxes (e.g., import surcharge, solidarity tax) or increases in tax rates have frequently been introduced following a widening of the fiscal deficit. Such pressure has been manifest in FER countries which needed to mobilize additional resources to finance their budget deficits. A case in point is Côte d'Ivoire which, in 1987 and 1988, increased its import tariffs by 10 percent, increased excise taxes on tobacco, and increased stamp duties, license fees and vehicle registration fees. Considering that the tax base in Côte d'Ivoire may not exceed half of GDP, an average ratio of taxes to GDP of 20 percent appears to be high for a country within its income category, and allows little room for manoeuver in budgetary policy on the revenue side in the short run. 1/ Indeed, some doubts may be raised on the quality of adjustment in this case, since raising government revenues by increasing tax rates, given the concomitant narrowing of the tax base, cannot be sustained over time and may follow a Laffer curve scenario.

There were also pressures in the opposite direction, mostly in response to financial difficulties experienced by enterprises in import substitution activities, which resulted in lowering average effective rates and further narrowing the tax base. Such tax relief included granting tax exemptions, allowing the buildup of tax arrears, and granting generous tax holidays. FER

1/ Policies which deter migration to the informal sector or, even more so, which reduce the size of the informal sector would, over time, broaden the tax base, however.

countries have been particularly prone to these tendencies, with acute competitive pressures arising from the appreciation of the CFA franc and from the real currency depreciation in some neighboring countries. Thus, it has been estimated that roughly half of imports in FER countries have been exempted from customs duties for various reasons, including generous provisions under investment codes. Thus, the average effective customs tariff, as measured by the ratio of receipts from import duties over total recorded imports, has been estimated at less than half the statutory rate for the West African countries. 1/

Another factor that has contributed to narrowing the import tax base is the growing importance of donor-financed imports which are tax exempt. This has affected both country groups in a similar fashion. After the debt crisis, there has been a significant shift in project financing from commercial sources, which paid full customs duties, to official bilateral and multilateral donors which expected to be fully exempted on transactions associated with providing foreign assistance. Some of the changes in the import tax base can be traced by looking at the average effective tariff. In the early 1980s, the average effective tariff in FER countries was 22 percent, substantially higher than in VER countries (15 percent). Despite efforts at broadening the taxation of imports (through the imposition of a minimum tariff), the effective tariff fell to 20 percent, mostly through tariff reform, changes in the composition of imports, and the broadening of exemptions. In the VER countries, many of which started off with a very low tariff base in the early 1980s (e.g., Tanzania, Zambia, Uganda), the average effective import tariff rose from 15 percent in 1980 to 18 percent in 1990-91.

5. Empirical testing

To test the relationship between tax or total revenue and the terms of trade and the real exchange rate, a panel data set has been used. The sample includes all the FER and VER countries and data covers annual observations over the period 1980-1991. 2/ The following simple model has been postulated:

$$LTX_i = a_i + \alpha LTT_i + \beta LRERW_i \qquad (1)$$

where LTX_i is the log of the ratio of tax revenue to GDP for country i, LTT_i is the log of the terms of trade, and $RERW_i$ the log of real exchange rate weighted by trade shares. 3/

1/ See: Nashashibi et al, 1990.

2/ The sample size is (28 countries x 12 years) = 336.

3/ There is some correlation between the terms of trade and the real exchange rate, to the extent that the latter has been used as a policy variable to alleviate a deterioration of the terms of trade. The correlation coefficient for the full sample is 0.15, which would suggest the existence of some multicolinearity between the independent variables.

As far as the parameters are concerned, the reasonable assumption of homogeneous slope and heterogeneous intercept has been made. To capture this heterogeneity a dummy variable for (n-1) countries has been included in the regression. In doing so we are taking into account the effects of those omitted variables that are specific to individual countries by keeping constant over time, among others, the efficiency factors mentioned above and any discretionary tax policy adopted by these countries. Equation (1) can be rewritten as:

$$LTX_i = C + \Phi_i D_i + \alpha LTT_i + \beta LRERW_i \qquad (1')$$

where $a_i = C + \Phi_i D_i$ is the intercept and D_i is the dummy variable for country i. The coefficient Φ_i measures the deviation of the intercept of country i with respect to the intercept of the nth country, for which a dummy variable was not included.

The results of the regression, summarized below, are quite interesting. The model fits the data exceptionally well for cross-section time series data with particularly high R squared. They indicate that tax revenue in SSA is strongly and negatively correlated with movements in the real value of the domestic currency, i.e., an appreciation of the country's real exchange rate would yield a fall in tax revenue/GDP. It is also negatively correlated with the terms of trade, since tax revenue mostly captures the increase in import price which occurs with terms of trade deterioration. Here the positive price effect on tax revenue clearly dominates the negative income effect of the terms of trade deterioration.

The independent variables are highly significant and for most countries the dummy variable has been found to be significant.

Estimation for tax revenue

Variable	Coefficient	Std.err	T.Stat.
C	4.9	0.22	22.02
LRERW	-0.21	0.03	-6.59
LTT	-0.20	0.04	-4.88
R^2	0.82		

Similar results are obtained when total government revenue (TR) is used as an independent variable. As expected, the coefficient for the terms of trade effect gains in importance and becomes higher than the coefficient for the exchange rate. This reflects the negative impact of a fall in export prices on nontax revenue.

Estimation for total revenue

Variable	Coefficient	Std.err	T.Stat.
C	4.96	0.2	24.4
LRERW	-0.20	0.03	-5.65
LTT	-0.29	0.04	-6.17
R^2	0.85		

If terms of trade are weighted by the trade share of each country in the total external trade of the 28 countries, we obtain a positive correlation of both tax and total revenue with the terms of trade. This is due to the fact that the countries which have the largest trade shares in the group have experienced some of the largest declines in the terms of trade, e.g., Nigeria, Zaire, and Côte d'Ivoire. Hence the income effect of this decline dominates the price effects for tax revenues. With respect to total government revenue, the nontax revenue component, which mostly consists of implicit export taxation on mineral resources, becomes important. When export prices fall, nontax revenue declines sharply and, helped by the negative income effect, offsets the positive price effects on tax revenue stemming from the increase in import prices. Countries such as Côte d'Ivoire, Gabon, Nigeria, and Zaire which have the largest trade shares also have large nontax revenue stemming from mineral royalties and profits, or from cash crops. The coefficient for the exchange rate also rises significantly when terms of trade movements are weighted. This would suggest that for countries which have experienced sharp declines in terms of trade, both tax and total government revenues will depend to a much greater extent on exchange rate adjustment than countries which have experienced much smaller declines (e.g., Senegal). Thus, in the table below, a 100 percent increase in revenue can be explained by a 33 percent depreciation in the real exchange rate and a 27 percent improvement in the terms of trade.

Estimation for total revenue with weighted terms of trade

Variable	Coefficient	Std.err	T.Stat.
C	3.37	0.14	24.4
LRERW	-0.33	0.03	-11.8
LTTW	0.27	0.03	-11.1
R^2	0.88		

To capture the efficiency factors and the effects of discretionary tax policy, dummy variables were included for all countries except Kenya. This country was chosen as a benchmark because it appears to have one of the most stable tax systems and performances in SSA. Indeed, its tax ratio to GDP over the 1980-91 period varied very little within the range of 22-25 percent of GDP despite sharp fluctuations in terms of trade. Excluding producers of mineral resources, the only countries which were able to improve on Kenya's record were Côte d'Ivoire, Mauritius, Togo, and Zimbabwe. All of these countries have undergone significant tax reforms, a broadening of their tax base, and--as in the case of Côte d'Ivoire--have resorted to significant discretionary increases in taxation to offset the decline induced by external shocks. In contrast, among the countries which have had the largest variability in tax revenue are Ghana, Uganda, Nigeria, Sierra Leone, and Niger (Appendix Table 1 and Chart 1). This reflects a weak domestic tax base, and in the case of Ghana and Uganda a steady increase in the tax ratio from a very low base at the beginning of the decade.

A regression analysis undertaken for the VER and FER country groups mirrors the overall results obtained for the full sample, particularly for the VER countries. In both country groups the exchange rate and terms of trade coefficients tend to increase with respect to tax revenue and total revenue, while the country intercepts tend to decline. For instance, the coefficient for the exchange rate in FER countries for total revenue increases to -0.27 (from -0.20 for the full sample) while for the terms of trade it increases from -0.23 to -0.31. On the other hand, when tax revenue is used as the dependent variable, the coefficient for the exchange rate is not found to be significant. This reflects the dominance of the three oil exporting countries (Cameroon, Congo, and Gabon) whose tax revenues mostly fluctuate with oil prices and the volume of oil exports rather than with the effects of the exchange rate. However, when the FER sample excludes the oil exporters, the exchange rate coefficient for tax revenue becomes significant again at the 95% level of confidence.

The results of the empirical analysis suggest the relevance of the terms of trade and real exchange rate as determinants of government revenue. These results also indicate that further research with respect to the determinants of tax and revenue categories and further breakdown of country groupings would be quite revealing.

6. Demand management policies

In addition to the exchange rate, other components of the macroeconomic mix can also have a significant impact on tax revenue. In particular, when inflationary policies are being pursued by government--through expansionary fiscal policies, monetization of the budget deficit, and frequent devaluations--tax revenue can be affected negatively in various ways. Collection lags, and the effects of maintaining specific excise taxes, administered prices for basic commodities and utilities, as well as declines in real interest rates toward negative levels are among the factors mentioned by Tanzi (1977) which erode the real value of the tax base and contribute to widening the fiscal deficit. An empirical overview of the relationship between inflation and tax revenue in SSA confirms that tax revenue has declined in countries where there have been episodes of sharp acceleration of inflation (e.g., Uganda, Zambia, and Zaire). However, for the remainder of the VER countries, the level of inflation--i.e., the persistence of inflation in the 15-20 percent range, as opposed to 2 percent in the FER countries--did not seem to affect tax revenue significantly. This may have to do with the structure of taxation in SSA and efforts at containing inflationary pressures. There were also significant changes in the sources of deficit financing, which have resulted in some deceleration of inflation in most VER countries during the second half of the 1980s.

a. The inflation record

One of the major advantages attributed to the currency and monetary unions of the central and western African countries is the price stability which an independent monetary policy and a nominal exchange rate anchor can achieve. Indeed, the annual inflation for the 11 FER countries considered in this study averaged 5.5 percent annually over the 1980-91 period but was characterized by a steady deceleration throughout the decade. During the first half of the 1980s, it averaged 9.4 percent annually because of the carryover of the inflationary period of the late 1970s--inflation was also higher in France--and the depreciation of the CFA franc (Table 5). At that time, demand for credit was still strong and monetary expansion averaged 15 percent per year, which could be interpreted as a relaxation of financial discipline within the two monetary unions. However, in the second half of the decade, the appreciation of the CFA franc, coupled with a sharp contraction in monetary expansion (averaging 2.6 percent annually), resulted in a decline in inflation to an annual average of 1.6 percent during the 1986-91 period. This price stability and the underlying monetary policy, however, should be seen in the overall macroeconomic context:

(1) With a decline in output and loss of competitiveness, price stability did not achieve its main objective: to encourage external and domestic investment and promote a growth environment. Indeed, the price deflation and concomitant decline in output undermined confidence without being sufficient to restore competitiveness. Private investment fell sharply.

(2) The statutory limits on credit to government by the two regional central banks, equivalent to 20 percent of the previous year's fiscal revenue, were circumvented by exceeding the ceilings and by the emergence of government payment arrears. The sharp decline in government revenue in most FER countries during the 1985-88 period reduced credit to governments, forcing in some cases net repayments to the central banks which could not be met. This financial repression contributed to the liquidity crises which undermined the manufacturing and financial sectors in most FER countries, but particularly in Cameroon and Côte d'Ivoire. The build-up of government payment arrears, the rundown of bank deposits, and the compression of the monetary base, drove many banks into difficulties and some out of business. This further exacerbated the decline in economic activity and in tax revenue collection. Considering that tax revenue is so sensitive to fluctuations in terms of trade and in the exchange rate, and that the export basket is concentrated on a few commodities, a credit rule

based on fiscal revenue seems to have little justification. There may be better grounds to base such a credit rule on trends in "core" public expenditures, determined after an evaluation of their composition and desirability and allowing for a yearly small increase in real terms.

(3) The counterpart of the price stability in the FER countries has been a low seigniorage revenue which declined from 1.4 percent of GDP in 1980-85 to 0.5 percent of GDP in 1986-91. This has exacerbated the fiscal difficulties of the BCEAO and BEAC member countries since they were recipient of substantial dividends from seigniorage revenue during the first half of the 1980s. During the second half of the 1980s, whatever was left of the seigniorage revenue was used up by the two central banks to rehabilitate insolvent commercial banks (Hanohan, 1990).

Average inflation in the VER countries has certainly been higher than in the FER countries. During the first half of the decade, the inflation rate averaged 24 percent and accelerated to 33 percent during the 1986-91 period, as a result of higher monetary expansion and a substantial real depreciation of the exchange rate in a number of countries. Seigniorage revenue was almost double that of the FER countries during the first half of the decade (2.1 percent of GDP) and increased to 3.2 percent of GDP during the second half. 1/ However, within these broad aggregates, one can distinguish two groups of countries. The first group of 11 countries made progress in reducing average inflation from 17 percent during the first half of the decade to 13 percent during the second half (Botswana, Burundi, The Gambia, Ghana, Kenya, Madagascar, Malawi, Mauritania, Mauritius, Rwanda, and Zimbabwe). Their tax revenue increased from 17.8 percent of GDP in 1985-86 to 21.1 percent of GDP in 1990-91. In the remaining six high inflation countries of the VER sample (Nigeria, Sierra Leone, Tanzania, Uganda, Zaire, and Zambia), inflation accelerated from 40 percent in 1980-85 to 75 percent during the 1986-91 period, with most of the deterioration due to the sharp price increases in Uganda, Zaire, and Zambia. During the same period, tax revenue in these countries declined from 15.3 percent of GDP to 13.1 percent of GDP.

In the first group of 11 countries, there have been repeated attempts at reducing inflation through stabilization policies and through major shifts in the composition of deficit financing from monetary expansion to external grants and the development of domestic financial markets (e.g., The Gambia, Ghana, Kenya, Malawi, Mauritius). Indeed, in recent years, most countries in the first group have managed to reduce government indebtedness to the banking system. Yet inflation during the second half of the decade may have become imbedded and little progress has been achieved in reducing it below the two digit level. A case in point is Ghana where, despite successive stabilization programs, inflation fluctuated between 18 percent and 37 percent during the 1986-91 period, with some acceleration in more recent years. The Gambia and Malawi offer additional examples where,

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1/ See: World Bank, 1993. The literature on optimal taxation has made a case for some degree of seigniorage revenue.

despite relatively sound macroeconomic management and substantial structural change, inflation appears to have been protracted at the two digit level. In addition to the effects of real exchange rate depreciation and insufficient monetary and fiscal restraint, the increasing dependence on external grants as a source of deficit financing may also have had some inflationary effects (Nashashibi, 1989). Whether a lower level of inflation would have resulted in higher government revenue is difficult to determine, but there are no prima facie indications that tax revenue in the 11 countries considered has been adversely affected by the higher level of inflation.

b. Impact of inflation on tax revenue

In the VER countries where inflation was relatively high (between 12 percent and 20 percent) but has followed a steady course, several factors, such as the structure of taxation and the broadening of its base through tax reforms and price liberalization, have tended to minimize any negative impact of inflation on tax revenue. First, most of the consumption taxes levied on these import and import substitutes are expressed in ad valorem terms and the remaining specific excises have been gradually converted to an ad valorem basis through tax reforms (e.g., Burundi, The Gambia, Malawi, Mali, Mauritania). Moreover, the liberalization of exchange rate policies has ensured that the market exchange rate is the rate at which imports are valued at customs. 1/ Thus, increases in the prices of traded goods tend to be translated into higher tax revenue with a relatively low collection lags, typically within one or two months. Second, interest income, which is particularly sensitive to erosion under conditions of inflation, and which is a substantial source of taxation in Latin America, does not as yet constitute a significant source of tax revenue in most SSA countries. Moreover, the restructuring of financial policies in several VER countries (e.g., The Gambia, Ghana, Kenya, Malawi, Mauritius, Nigeria, Tanzania, and Uganda) in the 1980s have tended to introduce positive real interest rates (Galbis, 1993).

Third, the corporate income tax, which can be seriously eroded by inflation because of collection lags, has been reformed in a number of countries. Tax rates have been lowered and collection lags have been reduced by levying tax payments monthly or quarterly during the year on expected income in the current year, rather than on the income of the previous year (e.g., Kenya, Malawi). The individual income tax, which is mostly levied on wages in the formal sector is withheld at source and is not eroded by inflation. Lowering marginal tax rates toward the 35-40 percent level, and raising the standard deduction with inflation has also minimized the fiscal drag. These factors have enabled the VER countries to maintain the ratio of direct taxes to GDP over the entire 1980-1991 period (at 4.8 percent of GDP) despite the high inflation environment.

1/ Under dual exchange rate regimes pursued in the past (e.g., Nigeria, Tanzania, Zambia), the official overvalued exchange rate would serve as a basis for customs valuation of imports, resulting in the erosion of this tax base under conditions of inflation.

V. Public Expenditure

Public expenditures in the full sample of countries have remained remarkably steady at around 28 percent of GDP between 1980 and 1988, followed by a small decline to 27 percent in 1991. But, as in the case of the overall deficit, the underlying expenditure pattern of the two groups of countries is quite different.

Despite the need to reduce the large fiscal deficits which emerged at the beginning of the 1980s, public expenditures in the FER countries have actually increased during the first half of the decade from 27.9 percent of GDP in 1980-81 to about 29.4 percent of GDP in 1985-86 (Table 6 and Chart 13). Since tax revenue was declining during that period, it appears that fiscal discipline had been relaxed in many FER countries, with costly consequences for the second half of the decade. During the 1986-91 period, with the further decline in tax revenue, the emergence of payment arrears, and the tightening of monetary policy, government expenditures were reduced to 25.3 percent of GDP in 1990-91. This major expenditure effort, equivalent to almost 4 percentage points of GDP, is particularly noteworthy considering that GDP was also declining and that there is usually little policy flexibility in the short run in reducing current expenditures. However, this decline was mostly attained by cutting capital expenditures. Subsequently, when restoring competitiveness required a reduction in current expenditures (by reducing wages), these actually increased from 17.4 percent of GDP in 1985 to 18.2 percent of GDP in 1990-91.

In the VER countries, total expenditures declined throughout the decade from about 28.3 percent of GDP in 1980-81 to 26.7 percent of GDP in 1990-91. As in the case of the FER countries, most of this adjustment can be attributed to a reduction in capital spending. However, in contrast to the FER countries, current expenditures remained virtually stable throughout the decade at 19.3 percent of GDP. If interest costs are excluded, however, current expenditures fell by 2.5 percent of GDP between 1980-81 and 1990-91.

1. Expenditure policy in FER countries

Major policy requirements for maintaining a pegged exchange rate as a nominal anchor are that governments conduct fiscal policy in such a way that: (a) the budget deficit is reduced to a level which is consistent with the pegged exchange rate; and (b) the relative prices between traded and nontraded goods are able to change in response to protracted external shocks to maintain competitiveness.

It is useful to recall that, since 1985, the double impact of the deterioration of the terms of trade and the appreciation of the CFA franc resulted in a substantial decline in the competitiveness of the traded goods sector. In the face of this external shock, fiscal and monetary policies are called upon to lower real wages--and prices of nontradables--so that

Table 6. Expenditure Performance: FER and VER Countries

(In percentage of GDP)

	1980-81	1985-86	1990-91	Changes 1980-81/1990-91
1. Total expenditure				
FER	27.9	29.4	25.3	-2.6
FER*	27.9	27.2	24.1	-3.8
VER	28.2	26.0	26.7	-1.5
VER*	27.6	26.1	25.8	-1.7
2. Current expenditure				
FER	16.8	17.4	18.2	1.4
FER*	16.9	16.9	16.3	-0.6
VER	19.1	18.9	19.3	0.2
VER*	19.4	19.5	19.4	-0.0
a. Wages				
FER	7.8	7.6	8.7	0.9
FER*	8.4	7.7	8.2	-0.2
VER	6.9	6.1	5.8	-1.1
VER*	7.0	6.2	5.9	-1.1
b. Goods, services, and transfers				
FER	7.1	6.4	5.3	-1.8
FER*	6.8	6.1	4.8	-2.0
VER	10.4	8.8	9.2	-1.2
VER*	10.6	9.0	9.4	-1.2
c. Interest				
FER	1.9	3.3	4.1	2.2
FER*	1.7	3.2	3.3	1.6
VER	1.8	4.1	4.3	2.4
VER*	1.9	4.3	4.1	2.2
3. Capital expenditure				
FER	10.4	11.2	6.3	-4.1
FER*	10.2	9.6	7.0	-3.3
VER	8.5	6.7	7.4	-1.2
VER*	7.4	6.2	6.7	-0.8

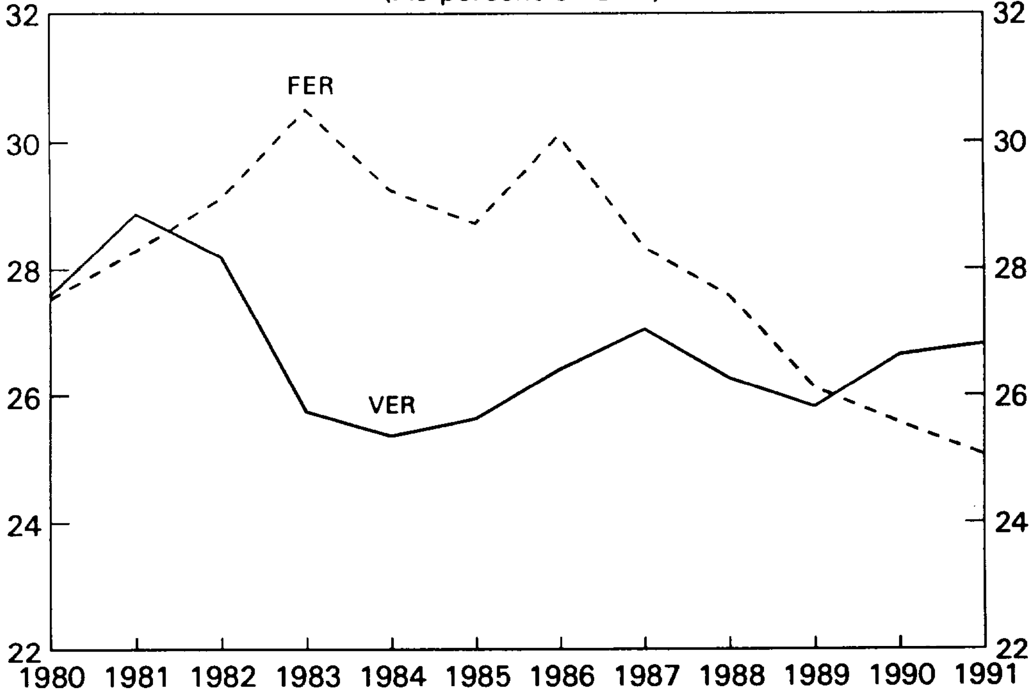
Source: SSA fiscal data base.

FER* - Excluding Cameroon, Congo, and Gabon.
VER* - Excluding Botswana and Nigeria.

CHART 13.

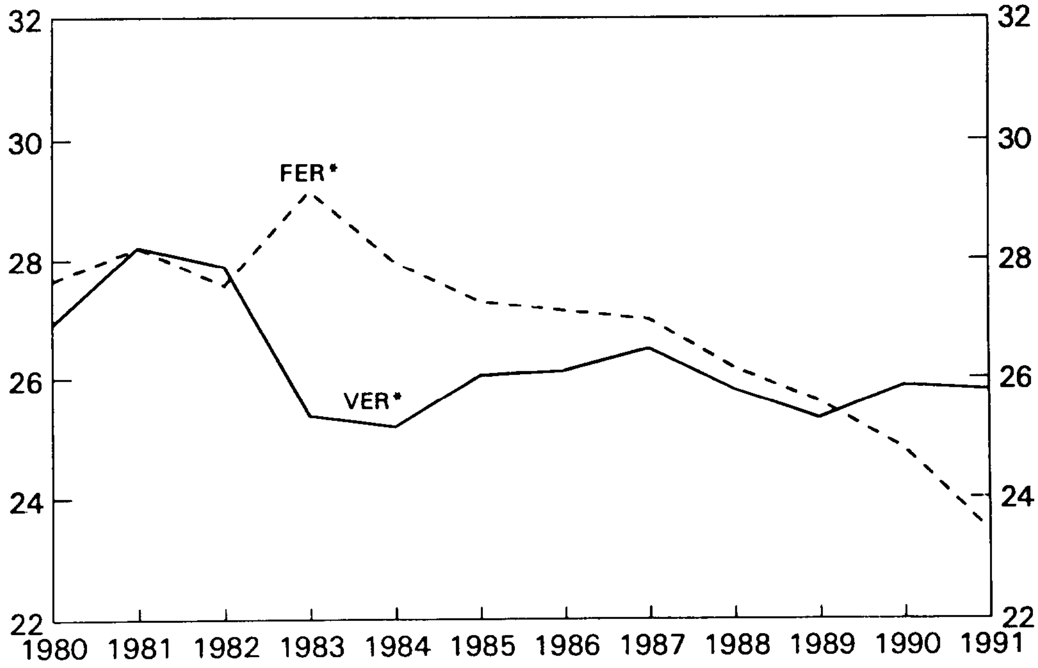
Sub-Saharan Africa: Total Expenditure:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters

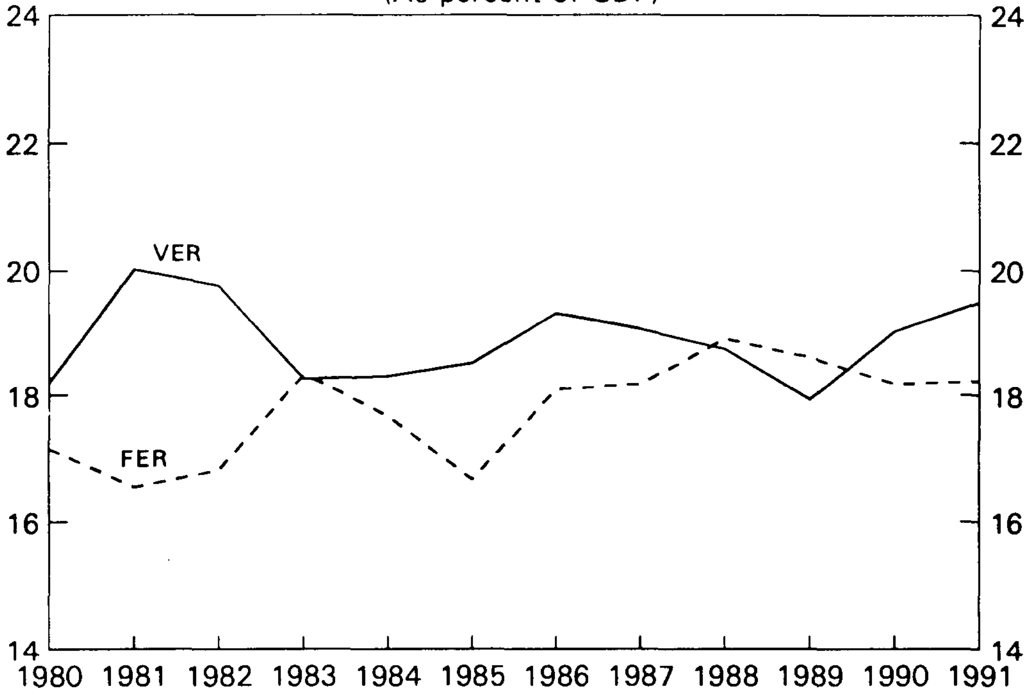


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 14.

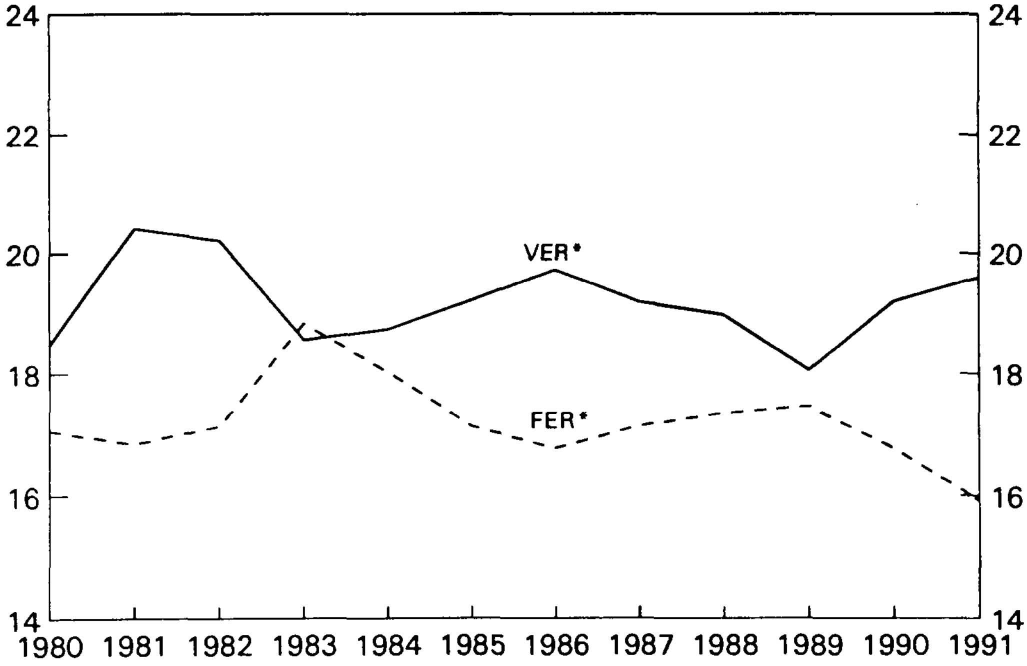
Sub-Saharan Africa: Current Expenditure:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters



Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

costs of production of traded goods decline sufficiently to restore their profitability at the lower prices in domestic currency, of both imports and exports. Since most tax revenue originates from imports and the traded goods sector, the drop in competitiveness has caused the decline in tax revenue and contributed to a widening of the fiscal deficit. Here comes the essential contradiction of the internal adjustment strategy: the real appreciation of the exchange rate, by undermining competitiveness reduces tax revenue, which widens the fiscal deficit. Yet this expansionary fiscal impulse goes against the contractionary fiscal policy that is needed for adjustment. Hence, expenditure policy is called upon not only to contribute its share in reducing the deficit, and in changing relative prices, but also to make up for the decline in tax revenue. As a rough order of magnitude, balancing the budgets of the FER countries (including grants) by the end of the 1980s would have required a fiscal retrenchment of 6 percent of GDP on the average. 1/ At least half of this amount would have had to come from wage reduction to bring them to the average level in VER countries, in an attempt to lower the prices of nontradables. Actually, the budgetary wage bill in FER countries (in relation to GDP) rose on average by 17 percent between 1980 and 1991. In contrast, the VER countries, which started at a lower wage bill level in the early 1980s, succeeded in lowering their wage bill by the end of the decade (Table 6).

The government wage bill in the FER oil-exporting countries (Cameroon, Congo, and Gabon) continued to grow from 6.4 percent of GDP in 1980-81 to 10.3 percent by 1990-91, partly through increases in salaries 2/ and partly through an expansion in the size of civil service, to staff the large infrastructure created in the early 1980s, including various autonomous government agencies. Again, this reflects lax financial discipline relative to arrangements of the two monetary unions since this increase coincided with an accumulation of domestic and external arrears. In contrast, the non-oil countries made early efforts at reducing the wage bill, from 8.4 percent of GDP in 1980-81 to 7.6 percent in 1985-86. These efforts were maintained in the second half of the decade, but the fall in real GDP was larger than nominal reductions in the wage bill, with the result that the share of wages for these countries rose from 7.6 percent of GDP in 1985-86 to 8.3 percent of GDP in 1990-91. 3/ This underscores the political difficulty faced by FER countries in reducing nominal wages and public employment under recessionary conditions.

1/ As the fiscal deficit is reduced, tax revenue would be expected to fall further in relation to GDP so that the actual fiscal effort required may be greater than the initial deficit.

2/ Depending on the import content of government employees' consumption basket, real salaries may have increased for some categories of employees during the second half of the decade, even without nominal salary increases.

3/ Among non-oil countries, Benin, Mali and Senegal were able to reduce their wage bills in relation to GDP even during the second half of the 1980s by about 1 percent of GDP.

When the government wage bill in FER countries is contrasted with some indicators of private sector income, such as producer prices for coffee and cocoa which were reduced by half during the second half of the 1980s, or trends in private consumption as estimated by national accounts during the same period, it appears that government adjustment efforts in improving the fiscal balance have lagged well behind those of the private sector (Secrétariat, 1992).

The difficulties in exercising expenditure restraint in FER countries were exacerbated by a doubling of interest costs, from 2 percent of GDP in the early 1980s to 4 percent of GDP by the end of the decade (Chart 16) (see below). It should be noted, however, that this interest cost understates the full interest cost which would have been incurred by FER governments in the presence of functioning financial markets. Indeed, there are various forms of debt incurred by FER governments--domestic payment arrears, arrears on social security contributions--on which no interest has been paid or budgeted.

The rise in both interest and wages in relation to GDP inevitably squeezed expenditures on goods and services, and transfers. These were reduced from 7.1 percent of GDP at the beginning of the decade to 5.6 percent of GDP in 1990-91. This reduction has partly affected budgetary transfers to enterprises and to consumers, although these have been relatively small in FER countries. But, more seriously, expenditures on government purchases to supply schools, health facilities and government administrations (including vehicles for tax administration) have been sharply cut in some countries and may have led to deterioration of the infrastructure and of the services provided by the government. This type of fiscal adjustment can only be temporary and would require at some point restoring expenditures on goods and services to a more sustainable level. It suggests that the underlying budget deficit in the FER countries in the 1988-91 period may be larger than the measured deficit.

The increase in current expenditures in the FER countries, concurrently with the sharp decline in revenue and the financing difficulties experienced in the 1985-91 period, forced substantial cuts in capital expenditures. After increasing during the first half of the decade, they were reduced almost by half, from 11.5 percent of GDP in 1985-86 to 6.1 percent in 1990-91 (Chart 17). While in some countries this reduction was beneficial as it eliminated unproductive or marginal investments, in other countries (e.g., Congo, Côte d'Ivoire, Senegal) gross capital expenditures were reduced to 2-3 percent of GDP, which may have resulted in a net loss in the capital stock.

2. Expenditure policy in the VER countries

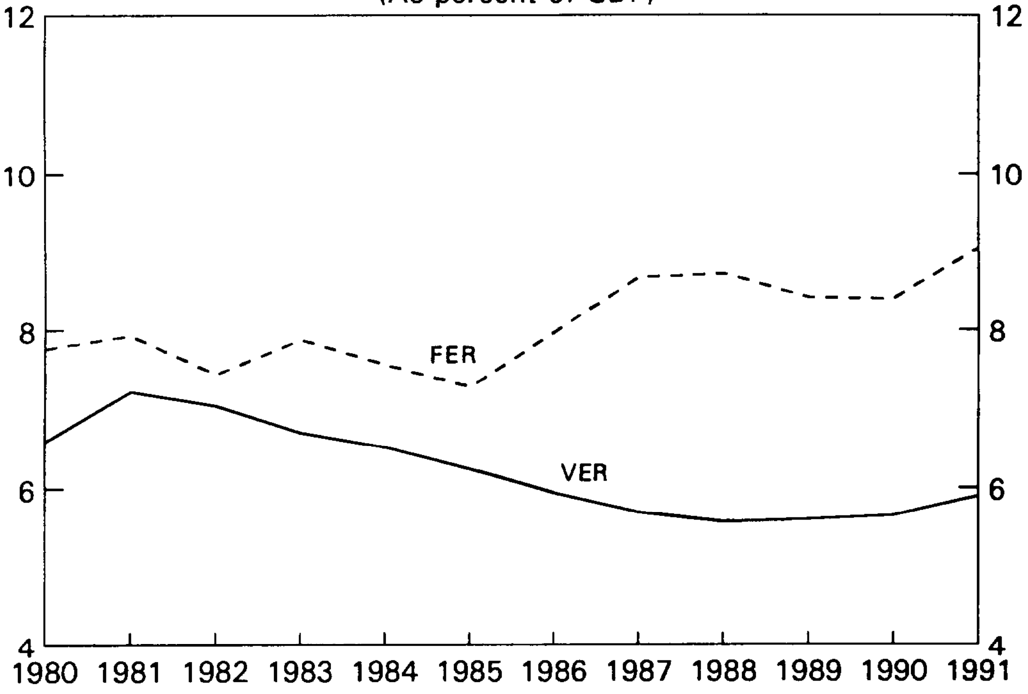
In the VER countries, the wage bill declined from 6.9 percent of GDP in 1980-81 to about 6 percent of GDP in the mid-1980s and only marginally thereafter, ending the decade at 5.8 percent of GDP, or about one third lower than the wages to GDP ratio in the FER countries. Much of this decline resulted from lags in nominal wage adjustments behind increases in

CHART 15.

Sub-Saharan Africa: Expenditure on Wages and Salaries:

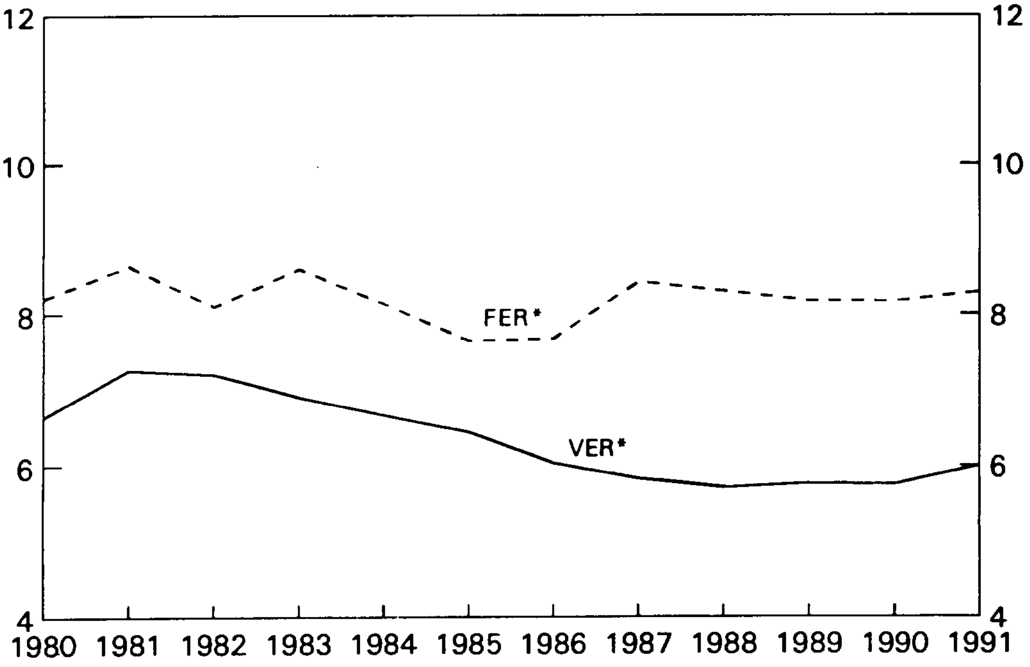
FER and VER Countries, 1980 - 91

(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters

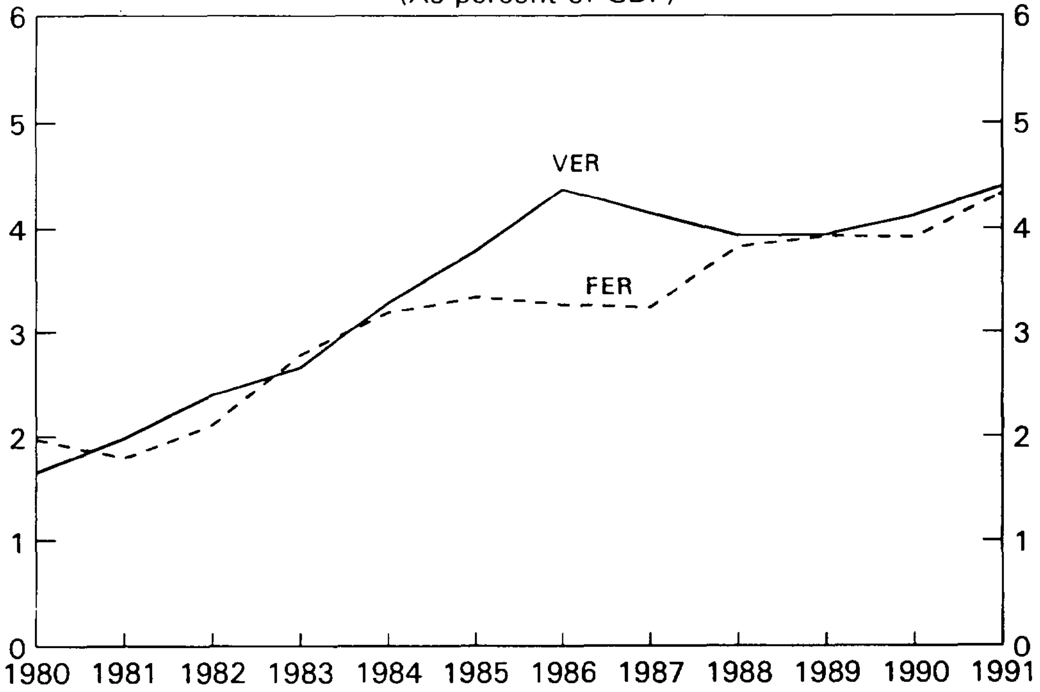


Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

CHART 16.

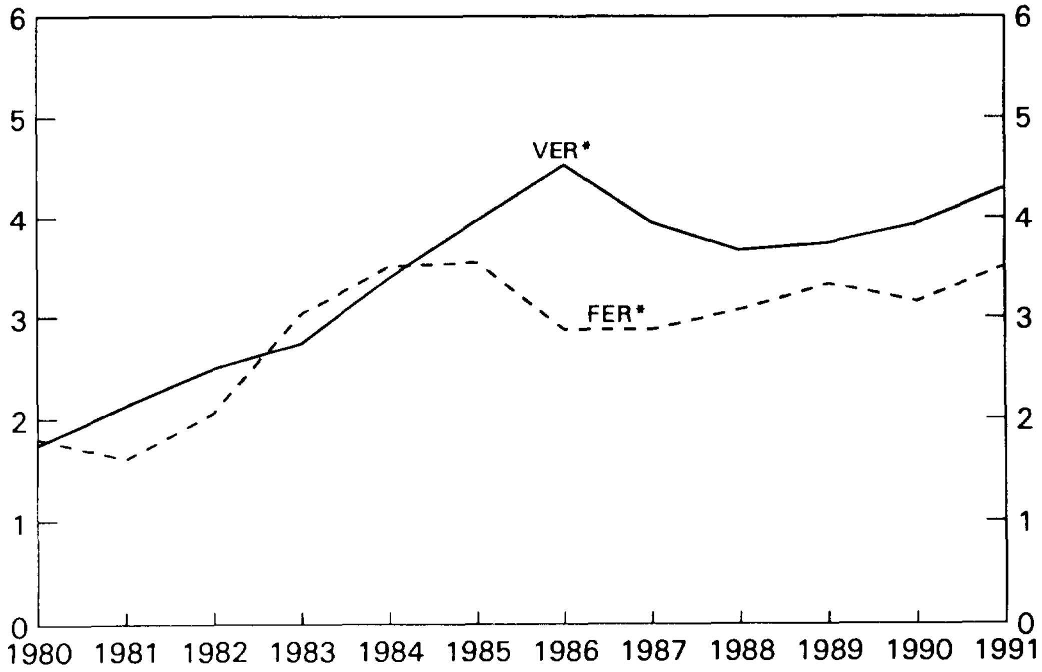
Sub-Saharan Africa: Interest:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters



Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

prices. In some countries (e.g., The Gambia, Ghana, Guinea, Kenya, Senegal), there were efforts at reducing the wage bill by initiating some retrenchment in the size of the civil service.

A reduction in real wages was needed to accommodate the sharp increase in interest costs from 1.8 percent of GDP in 1980-81 to 4.3 percent of GDP in 1990-91. It is interesting to note that, by the end of the decade, despite very substantial real exchange rate depreciation, the interest burden in the VER countries in relation to GDP was only marginally higher than interest expenditures in FER countries (4.3 percent of GDP vs. 4.1 percent of GDP), even though the two groups of countries started off the decade with a similar interest charges. In particular, during the second half of the decade, when the depreciation of the real exchange rate was at its highest, the interest burden hardly changed. Yet it is a common criticism of an active exchange rate policy that public external debt servicing escalates, resulting in a deterioration of the budget balance. Three factors have contributed to this outcome. First, the widening of the fiscal deficits in FER countries over the decade raised interest costs, while the opposite occurred in the VER countries. Second, the poor growth record of the FER countries has reduced the denominator of the ratio of external interest to GDP, while the better growth record of the VER countries has increased the denominator. Third, there was significant capitalization of interest through debt rescheduling and, particularly since 1987, the lengthening of maturities, partial cancellation of debt, and concessions on interest rates. This may have benefited the VER countries to a greater degree than the FER countries. The VER countries on average are poorer than the FER countries and would benefit from more favorable rescheduling terms including debt cancellation. Moreover, the interest burden becomes endogenous to the adjustment process where tangible progress in reducing the fiscal deficit and in undertaking structural changes facilitates debt rescheduling, and may provide greater concessionality in aid flows. 1/ However, a greater degree of debt rescheduling, coupled with an active exchange rate policy, would also result in a larger stock of debt. Indeed, external debt ratio to GDP in the VER countries doubled over the decade to 107 percent of GDP in 1986-91 (Table 5).

There was also some reduction in expenditures on goods and services, which declined in VER countries from 10.5 percent of GDP in 1980-81 to 9.3 percent by 1985-86, remaining stable at that level for the remainder of the decade. By 1990-91, the expenditures on goods and services were some 3 percent of GDP above their level in FER countries.

Capital expenditures were also reduced in the VER countries mostly during the first half of the decade (from 8.7 percent of GDP to 6.4 percent of GDP) and were raised again to a lesser extent during the remainder of the

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1/ The same factors may account for a doubling of grants to 3.6 percent of GDP in VER countries over the 1980s, while in FER countries they declined from 3.2 percent of GDP in 1980-81 to 2.4 percent of GDP in 1990-91.

decade. Hence, during the second half of the decade, when the decline in the terms of trade was at its worst, expenditure reduction in the VER countries was broadly distributed, while in the FER countries it was concentrated in lower spending on goods and services and on capital investment.

VI. Summary and Conclusions

Fiscal adjustment in SSA during the 1980s has been particularly difficult. A protracted decline in terms of trade and falling per capita income have clouded the political climate in most countries, and surrounded any adjustment strategy with substantial risks. Seen in this perspective, the improvement in the fiscal performance of most SSA countries is particularly noteworthy. Nevertheless, opportunities for adjustment and consolidation of stabilization efforts were missed in both country groups.

During the first half of the decade (1980-85), the real exchange rate depreciated in FER countries by about 15 percent in conjunction with a small improvement in the terms of trade. This provided an opportunity for fiscal retrenchment and the FER countries were able to improve their revenue performance from 21 percent to 22 percent of GDP. However, because they were reaching the upper limits of revenue increase, the burden of adjustment fell squarely on expenditures. Yet, the oil producing FER countries continued to increase capital expenditure in relation to GDP, offsetting revenue gains and widening their deficits. And while the other FER countries managed to reduce their fiscal deficit marginally (from 10.5 percent of GDP to 9.5 percent of GDP), this was clearly inadequate to restore domestic balance and consistency between monetary targets and fiscal policy. In the VER countries, while government revenue in relation to GDP hardly changed (at 18.2 percent of GDP), there was a major effort on the expenditure side which reduced the deficit from 11 percent of GDP to 7 percent of GDP, notwithstanding a doubling of interest costs.

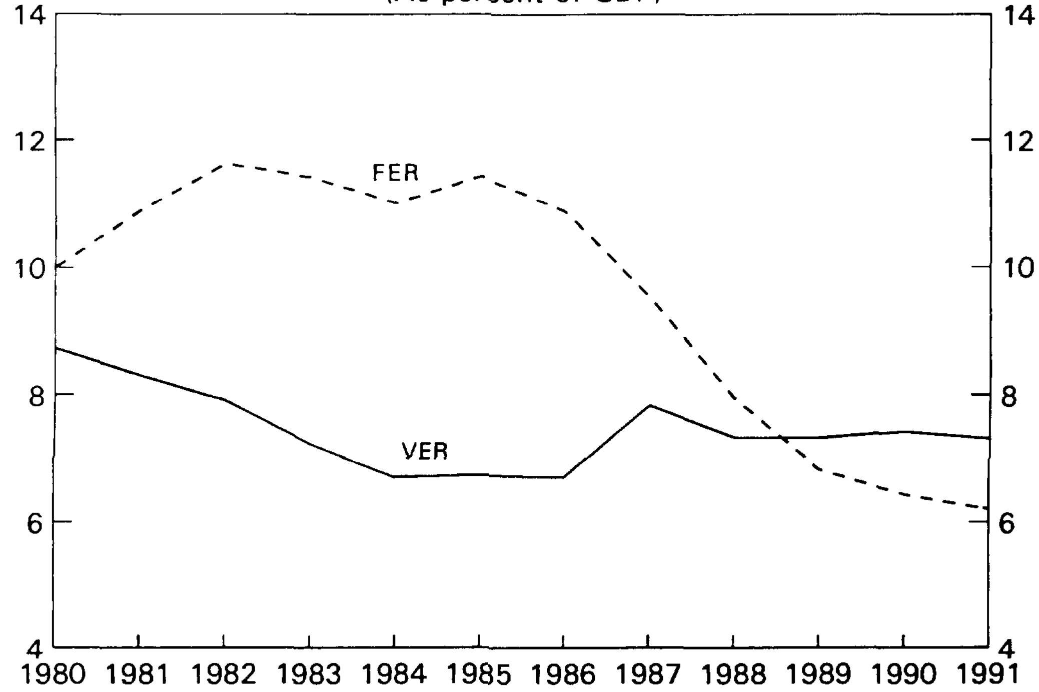
During the second half of the decade, the terms of trade deteriorated sharply in the FER countries (by 30 percent) while the real effective exchange rate appreciated by about 10 percent. The combined impact of these two external shocks, coupled with import liberalization and lower trade tariffs weakened the traded goods sector by reducing the competitiveness of both exports and import substitutes. This has undermined the tax base, as indicated by a fall in the import/GDP ratio from 27 percent to 21 percent. Falling income in the export and manufacturing sectors, cheaper imports, lower volume of recorded imports, and an expansion of the informal sector reduced budgetary revenue in FER countries by 4.3 percentage points of GDP, a major deterioration considering that it occurred over a span of only five years and that GDP was stagnant.

The policy response to the fall in tax revenue and a rising interest burden has been to increase tax rates, reduce public spending on goods and services, cut investment expenditures, and finance the fiscal gap through

CHART 17.

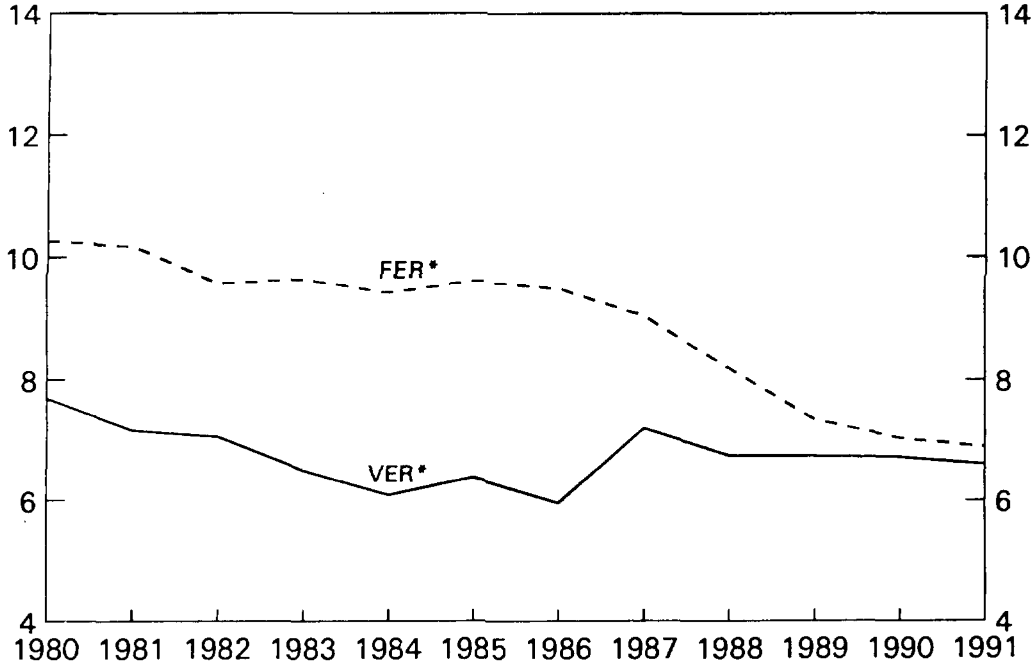
Sub-Saharan Africa: Capital Expenditure:

FER and VER Countries, 1980 - 91
(As percent of GDP)



FER: Fixed Exchange Rate Countries
VER: Variable Exchange Rate Countries

Excluding Natural Resource Exporters



Source: Sub-Saharan Africa fiscal data base.
FER*: Excluding Cameroon, Congo, and Gabon.
VER*: Excluding Botswana and Nigeria.

foreign borrowing, grants, and accumulation of arrears. Increases in tax rates and resorting to domestic payment arrears have weakened the formal traded goods sector and strengthened the informal sector, further contributing to a narrowing of the tax base and to a deterioration of tax compliance. While the burden of adjustment should have fallen on lowering civil service wages and employment, wages actually increased in relation to GDP. Moreover, some of the expenditure cuts, particularly in operations and maintenance and supplies, may have been counterproductive and could not be sustained. Whereas the overall deficit for FER countries did not rise by 1990-91 above the level of 1985-86, the underlying fiscal deficit must have widened. Thus, while monetary policy was pro-cyclical, budgetary policy sustained the rate of growth above the rate which a sharp reduction in the wage bill would have entailed, at least in the short term.

The decline in the terms of trade in the VER countries during 1986-91 was more moderate than in FER countries (20 percent vs. 30 percent) and was fully matched by a reduction in the real effective exchange rate. This helped in increasing import ratio in VER countries (from 26 percent of GDP to 29 percent of GDP), thereby protecting the tax base and raising revenue. However, the momentum of reducing expenditure stalled during the second half of the decade at about 26 percent of GDP. Even in the eleven countries undergoing sustained adjustment efforts and where inflation declined, it remained imbedded at the two digit level because of insufficient fiscal retrenchment and expansionary monetary policy. Nevertheless by the end of the decade the government wage bill in VER countries was one third lower than the wage bill in FER countries, and the primary deficit was further reduced to 1.4 percent of GDP (from 9 percent in 1980-81), which is the most telling indicator of fiscal adjustment in VER countries.

While the major quantitative fiscal indicators point to a better fiscal performance in the VER countries than in the FER countries, both groups of countries made progress with structural reforms. Reforms in public finance have simplified the tax systems, reduced price distortions, and lowered the dependence of the tax system on international trade. Public investment programs have been focused on productive projects, mostly in infrastructure, and a number of countries have begun to scale back the size of their civil service. Extrabudgetary accounts have been brought into the budget and transparency has improved. This progress, together with institutional reforms in other areas (price liberalization, financial sector restructuring, reforms of public enterprises and privatization) establishes a much stronger institutional basis for improving the overall fiscal and macroeconomic performance in the 1990s.

Drawing on the fiscal experience of the two country groups analyzed in this study, a number of policy-oriented findings can be highlighted:

(1) A major factor in the deterioration of fiscal performance in the FER countries during the second half of the 1980s was that the real exchange rate increasingly diverged from its equilibrium path. Conversely, the VER countries were able to improve their fiscal performance, despite their

expansionary monetary policies, because their real exchange rate was converging toward its equilibrium path. Thus, while a fixed exchange rate used as a nominal anchor in sub-Saharan Africa can have major advantages in limiting monetary expansion, and ensuring price stability, it can only contribute to the attainment of the other macroeconomic objectives--particularly fiscal balance, competitiveness and growth--if it is adjusted in response to protracted external shocks.

(2) Because the tax base in SSA is so heavily concentrated on imports and on the import substitute segment of the modern traded goods sector, protecting the competitiveness of that sector is essential for the preservation of the tax base. Under these circumstances, fiscal policy cannot serve as a proxy for exchange rate policy. Rather, exchange rate policy and fiscal policy must be complementary. An inappropriate exchange rate policy undermines the ability of the fiscal authorities to attain fiscal balance, let alone competitiveness. Thus, presenting the internal and external adjustment strategies as two alternatives is not useful for policy purposes.

The strong empirical relationship established between government revenue, the exchange rate, and terms of trade in the SSA context, suggests that attempts at restoring the fiscal balance and competitiveness by wage deflation may be partly self defeating and, given the magnitude of the required adjustment, may have been unrealistic. It is self-defeating in the sense that an overvalued exchange rate, by undermining tax revenue, leads to a widening of the deficit and an expansionary fiscal impulse, when what is required under internal adjustment is a contractionary policy. Such a strategy would require not only a major decline in nominal wages, a politically difficult undertaking under any circumstance, but of such a magnitude as to offset the decline in government revenue triggered by the erosion of the tax base. Even if such a strategy were feasible, the cost in foregone output would be considerable. Although the FER countries were not able to reduce their wage bills during the second half of the decade--it actually increased in relation to GDP--the annual rate of growth of GDP fell to 1 percent by the end of the decade, implying a fall in per capita income. Had the wage bill been reduced by 3 percentage points of GDP to the average level prevailing in the VER countries, the rate of growth would have become negative for most FER countries at least within the 1986-91 period.

(3) The transmission mechanism between the reduction in the budgetary wage bill and an increase in competitiveness--say for export crops--is not clear in the institutional setup of SSA. Non-market clearing wages can persist despite substantial umemployment because of the dual structure of the labor market, one in the formal sector influenced by union and political power, and one in the informal sector where the implicit wage in the agricultural subsistence sector can act as a floor. More work needs to be done on wage determination in African countries before it is suggested to change relative prices through wage deflation.

(4) The VER countries as a group did not reduce their real exchange rate during the second half of the decade beyond the deterioration in their

terms of trade. While some individual countries may have pursued a more active exchange rate policy, the VER countries did not resort--as a group--to "beggar thy neighbor" policies. Indeed, if the VER countries had resorted to targeting the real exchange rate to match the deterioration in the terms of trade during the second half of the 1980s, they would have attained broadly similar results. Nevertheless, there is a need for regional surveillance of macroeconomic policies in Africa, the establishment of a behavioral framework within which outlier countries can be monitored, drawing the implications of their policies on neighboring countries.

(5) Fiscal discipline in the FER countries, as implied by the statutory arrangements of the western and central African monetary unions, was not exercised as required for the smooth operation of this regime. Notwithstanding these spending cuts, when faced with major fiscal gaps, the FER countries found it difficult to reduce current expenditures, particularly wages. Instead, a variety of ways were found to finance these gaps, including the build-up of domestic and external arrears, drawing on social security funds, and circumventing the statutory limits on credit to government by drawing on credit extended to para-fiscal agencies (e.g., stabilization funds) or resources available to public enterprises, particularly those processing mineral deposits (e.g., oil in Cameroon, Gabon, and the Congo, phosphates in Togo).

(6) The credit rules followed by the two regional banks in West Africa (BCEAO and BEAC) in determining credit to government on the basis of the previous year's fiscal revenue, may have exacerbated fluctuations in income. Considering that fiscal revenues are so closely related to terms of trade and exchange rate movements, and depend on a narrow range of exports, other credit rules may need to be considered. In particular, if government expenditure level and composition were appropriate, a credit rule based on a small real yearly increase in "core" expenditures may be more justifiable.

(7) Inflation remains imbedded in most VER countries at the two digit level, mostly because of frequent devaluations without adequate support policies, particularly sufficient monetary and fiscal restraint. Such inflationary pressures persisted, even among those countries which succeeded in reducing their budget deficits and in eliminating bank financing of these deficits. Since external grants have become a major source of deficit financing for most VER countries, there is a need to look into the inflationary pressures which external grants may generate and the fiscal stance which would be consistent with their elimination.

The Data Set

Annual data on major fiscal aggregates have been obtained for 28 SSA countries for the period 1980-91. A number of countries in SSA were excluded from this sample for lack of data or sharp breaks in the series, mostly due to warfare. Among the largest exclusions are Angola, Ethiopia, Mozambique, Sudan, and Chad. Within the FER and VER countries, a further breakdown was found necessary to isolate those natural resource exporters (NREs) where budgetary revenues largely depend on the exports of mineral resources. Thus, in the FER countries, the fiscal averages for the 1980-91 period have been generated with and without the three oil exporters of the region, Cameroon, Congo, and Gabon, while in the VER countries, NREs singled out are Botswana, a large diamond exporter, and Nigeria.

All the data have been expressed in relation to GDP to measure levels and changes in tax revenue and expenditure categories in relation to the size and growth of output, capturing deviations from trend lines. While gross national disposable income (GNP corrected for terms of trade effects and net transfers to abroad) would be a better determinant of tax receipts and government expenditures than GDP, the latter has the advantage of being widely accepted as a common benchmark in cross-country comparisons. In this respect, efforts have been made to ensure that GDP series are consistent so as to obviate the possibility that tax ratios change because of errors in the denominator.

Simple averages across all countries in each group for each year have been derived for the fiscal aggregates. The purpose here is to reflect the fiscal performance of the "average" African country in each group rather than weigh it in terms of the size of the economy and its share in the total GDP for each group. Since the behavior of tax performance has changed significantly for most countries throughout the decade, two-year averages were taken as benchmarks for 1980-81, 1985-86, and 1990-91. In particular, 1985-86 was found to be a meaningful benchmark separating the two halves of the decade during which the behavior of the terms of trade, the exchange rate, and fiscal performance varied considerably.

Fiscal data relate to central government budgetary operations. Thus, for Nigeria, only revenues retained by the federal government (rather than "collected revenues" for federal and state governments) are included in the series. While attempts have been made to obtain consistent country series, some inconsistencies in data classification remain among countries, although these would not significantly affect average performances of country groups or changes in individual country performance through time. For instance, some investment directly financed by external grants in a few countries is either classified as current expenditures (e.g., Burundi) or excluded from the budget (Ghana). Payroll taxes for social security are included in most countries among tax revenue, but excluded in others (e.g., Burkina Faso). Revenue stemming from mineral exports (e.g., oil royalties and profit shares) has been included in "direct taxes" instead of nontax revenue since it is, in effect, taxation of the rent from mineral wealth. Taxation of the domestic consumption of these products (e.g., excises, VAT) was retained among indirect taxes.

On the revenue side, "nontax revenue" is mostly made up of implicit taxes on imports or exports, imposed by marketing boards or price stabilization funds and made up of the wedge between the producer price and export price, or between the import price and the sale price to the consumer (adjusted for transport and trade margins). Similarly, profits from the central bank are often an implicit tax on commercial bank reserves held with the central bank, for which no interest is paid. "Other tax" revenue is mostly a residual item which includes property taxes, special surcharges, fees, and stamp duties, but also in certain countries it may include tax revenue still to be classified (e.g., Cameroon). On the expenditure side, consistent classification was obtained on wages and salaries, interest and capital. Data on "goods and services" include transfers and subsidies, as well as miscellaneous items.

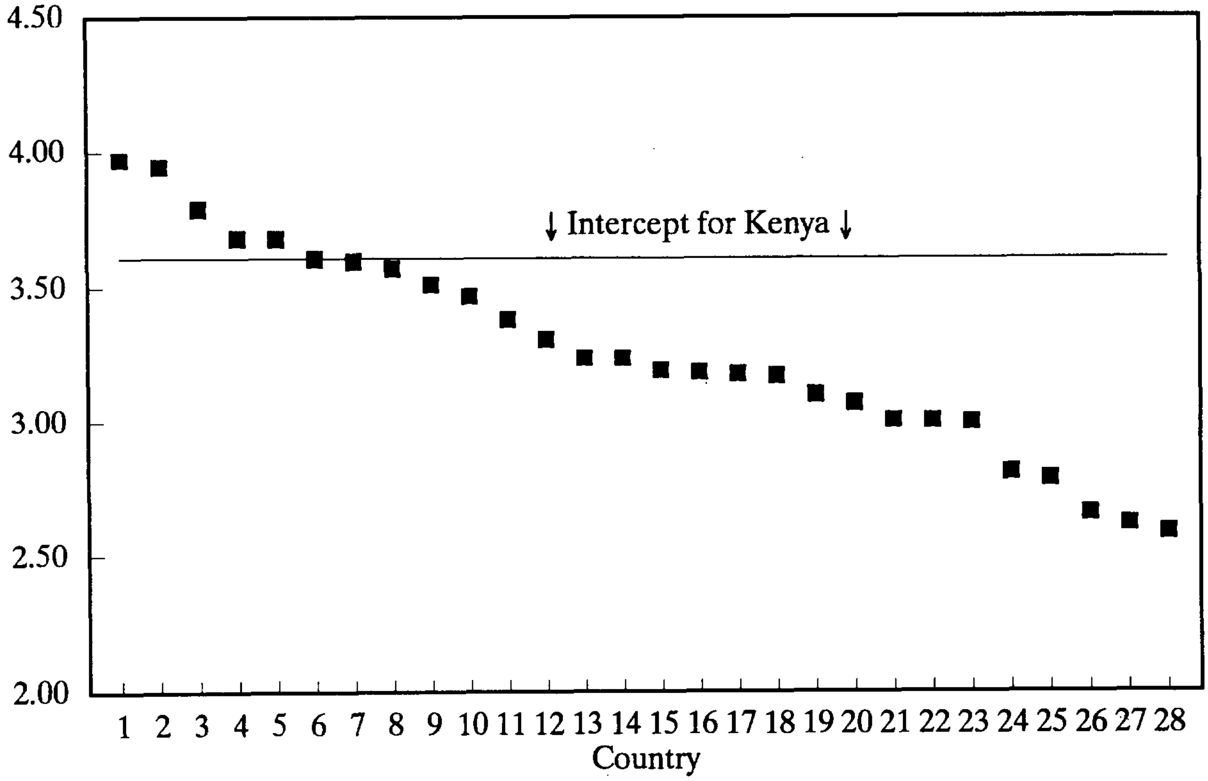
Overall fiscal balance is defined as total revenue--excluding external grants which are treated as external financing--minus total expenditures and net lending measured on the basis of a commitment or of a payment order issued. The choice of a fiscal deficit indicator is a difficult one. In the presence of accumulating arrears, a fiscal deficit measured on a cash basis does not capture the impact of government expenditures (financed by arrears) on the economy. On the other hand, measuring the deficit on a commitment basis will underestimate the adjustment effort when there is a reduction in arrears. Since the focus of this paper is on the fiscal deficit as a measure of macroeconomic imbalance, the budget deficit on a commitment basis is the relevant measure.

Table 1. Sub-Saharan African Panel Data (1980 - 1991)

Estimation for Tax Revenue			
Variable	Coefficient	Standard Error	T-Statistic
Real Exchange Rate	-0.33	0.03	-9.96
Terms of Trade, weighted	0.19	0.03	6.56
Country Dummy Variables			
1. Botswana	3.97	0.17	23.30
2. Zimbabwe	3.94	0.17	23.26
3. Côte d'Ivoire	3.79	0.17	22.83
4. Togo	3.68	0.17	21.66
5. Mauritius	3.68	0.18	20.81
6. Kenya	3.61	0.16	21.99
7. Gambia	3.60	0.16	21.90
8. Zambia	3.57	0.17	21.58
9. Mauritania	3.51	0.16	22.23
10. Malawi	3.47	0.17	20.41
11. Senegal	3.38	0.17	20.38
12. Zaire	3.31	0.17	19.80
13. Tanzania	3.23	0.15	21.09
14. Cameroon	3.24	0.16	19.76
15. Burundi	3.19	0.15	20.79
16. Gabon	3.19	0.16	19.80
17. Benin	3.18	0.16	19.60
18. Congo	3.17	0.16	19.91
19. Centr. Afr. Rep.	3.10	0.16	18.86
20. Burkina Faso	3.07	0.17	18.35
21. Madagascar	3.01	0.16	19.24
22. Rwanda	3.00	0.16	19.15
23. Mali	3.00	0.16	18.25
24. Ghana	2.82	0.17	16.83
25. Niger	2.79	0.17	16.42
26. Sierra Leone	2.66	0.16	17.07
27. Nigeria	2.62	0.14	18.71
28. Uganda	2.58	0.16	16.08
R-squared	0.82		

Source: SSA fiscal data base.

Chart 1



Estimation of Country Intercepts

Dependent Variable: LTX
Independent Variables: LRERW, LTTW

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