Fiscal and Exchange Rate Reforms in Africa

Considering the Impact Upon the Poor

David E. Sahn

CORNELL FOOD AND NUTRITION POLICY PROGRAM

MONOGRAPH 4 • AUGUST 1990

The Cornell Food and Nutrition Policy Program (CFNPP) was created in 1988 within the Division of Nutritional Sciences, Cornell University, to undertake research, training, and technical assistance in food and nutrition policy with emphasis on developing countries. The Nutritional Surveillance Program (CNSP), which was formed in 1980 with support from the Agency for International Development, is part of the CFNPP.

CFNPP is funded by several donors including the Africa Bureau and country missions of the Agency for International Development, UNICEF, the Pew Memorial Trust, the Rockefeller and Ford Foundations, the Government of Indonesia, the Carnegie Corporation and the World Bank.

CFNPP is served by an advisory committee of faculty from the Division of Nutritional Sciences, the departments of Agricultural Economics, Rural Sociology, and Government, and the Program of International Agriculture. Several faculty members and graduate students collaborate with CFNPP on specific projects. The CFNPP professional staff includes nutritionists, economists, and anthropologists.

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FOREWORD

Confronted with declining rates of economic growth, burgeoning budget and current account deficits, and deteriorating living standards, most countries in sub-Saharan Africa began a process of structural adjustment and stabilization in the 1980s. While these efforts were designed to improve macroeconomic performance, understanding the impact of policy reform on poverty is also of great importance. Consequently, the Cornell Food and Nutrition Policy Program (CFNPP) is currently conducting research in nine countries in sub-Saharan Africa. The purpose is to perform the necessary empirical analysis and develop appropriate economic models to understand the macroeconomic and distributional implications of policy changes.

The first phase of the CFNPP research efforts in this area, which is being funded through a Cooperative Agreement with the Africa Bureau of the U.S. Agency for International Development, involved the preparation of a conceptual framework and appropriate methodologies to link household level outcomes to macro and sectoral policy reforms. CFNPP Monographs 1, 3, and 5 report on the results of our efforts at developing methodologies. The nine case studies that we are undertaking form phase 2. They build upon the methodologies from phase 1 and are designed to provide country-specific examples of how changes in the policy environment are affecting poverty and welfare. A third phase of our efforts, however, is to perform appropriate integrative analysis, gleaning generalizable findings from the case studies being performed.

As a prelude to the comparative analysis of case studies, this monograph represents the first effort at integrating the experiences in sub-Saharan Africa by compiling existing data for a broad, cross-section of countries. The intent is not to provide details as to the distributional consequences of economic reform policies, which is the object of the case studies. Rather, this monograph is to provide information and stylized facts about the process and evolution of economic change in the region and, in doing so, generate important insights into how some key variables may have impacted upon the poor during the 1980s.

Ithaca, NY
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David E. Sahn
Deputy Director

EXECUTIVE SUMMARY

This monograph examines trends in the level and pattern of government expenditures in sub-Saharan Africa as well as data on exchange rates, food production, food prices, and real wages.

Reducing the government deficit and improving fiscal policy are central pillars of most macroeconomic adjustment programs. To the extent that low-income households benefit directly (e.g., through jobs or explicit subsidies) or indirectly (e.g., through subsidized health care or education) from government spending, they may be adversely affected by policy changes designed to reduce the budget deficit.

From 1977 to 1982 total government expenditures (including lending minus repayments) as a share of GDP accelerated. Coupled with GDP growth total government expenditures increased dramatically, although the high rate of population growth resulted in only a small rate of growth in per capita levels. After 1982 total government expenditures increased at a slower pace and per capita expenditures stagnated. When discretionary total expenditures were examined (i.e., net of interest payments), per capita spending was actually higher in 1981 and 1982 than in 1985 and 1986. This is a reflection of the increasing fiscal burden of repayment of outstanding loans. Based on a country fixed effects regression model, it can also be concluded that government expenditures will be a larger percent of GDP among countries with higher GDP. No conclusive evidence was found to suggest that countries reduce government expenditures, either in real terms or as a percentage of GDP, as a consequence of receiving adjustment loans. In those countries where there has been a compression in government spending in the 1980s, it generally pre-dates the beginning of donor-financed adjustment programs.

The composition of government expenditures is as important as its aggregate value. Any reduction in the capital budget during a period of austerity has potential long-term implications and may impede future economic growth. On the other hand the consequences of allocating too great a share of the government budget to capital rather than recurrent expenditures may necessitate the use of capital expenditures to replace assets that have deteriorated due to shortages of operating expenses for maintenance. Existing social infrastructure (i.e., health centers, schools) may likewise be underutilized because of a lack of teachers, books, medicines, and so forth. Although only a few countries saw a large increase in recurrent relative to

capital spending in the wake of policy reform (e.g., Côte d'Ivoire, Sudan), data indicated the ratio of recurrent to capital expenditures was higher among 14 of 22 countries during the period 1986-87 than 1978-80.

The evidence indicated that between 1978-80 and 1986-87 wage payments' share of total discretionary government expenditures has remained steady throughout sub-Saharan Africa. In real terms spending on wages and salaries has also not changed since the 16 percent increase noted between 1978-80 and 1981-83.

An examination of the sectoral composition of expenditures revealed that central government social sector spending in general, and health and education in particular, increased in real terms between 1978 and 1982. Thereafter, spending on health has continued to increase, albeit at a slower pace, while education expenditures in 1986 were only slightly higher than in 1982. Health and education spending were found to increase, in percentage terms, at a faster rate than GDP. At the margin a relatively larger share of government expenditures was allocated to health and education in 1985-87 than between 1974-84. Despite the efforts of many governments during the 1980s to increase or maintain health and education expenditures, spending on a per capita basis declined.

Among eight and nine of the 17 countries for which data were available, education and health, respectively, comprised a smaller share of the budget in the three years following the first adjustment loan from the World Bank than in the preceding three years. In real terms, total spending on health and education dropped in nine out of the 16 countries for which data were available, indicating no overall pattern of positive or negative change in the wake of the adjustment program.

Despite the insights the data provided into government behavior in terms of levels and patterns of expenditures, it is emphasized that there is a long and difficult chain of causality between central government expenditures and desired outcomes as measured in terms of living standards. For example, just how a contraction of spending on education will affect enrollments, how enrollment ratios affect literacy, and the subsequent economic and social returns to the ability to read and write represent a complex set of relationships that are not addressed in this monograph. Pending a more complete analysis, one important factor that will condition the impact of spending on health and education and other social services is the intra-sectoral allocation of expenditures, which in part determines the extent to which various population groups receive government services and subsidies. One would expect that the process of adjustment would be accompanied by a rationaliza-

tion of public expenditures and investments, implying greater emphasis on primary health care and primary education and less on hospitals and universities. The data from a limited number of countries did not show any clear pattern of change in the intrasectoral allocation of government expenditures in recent years.

The need for revenue to finance expenditures commends consideration of user charges. Such fees, however, must be selectively applied, recognizing that programs with large externalities (e.g., immunization, condom distribution, vector control) should be free or heavily subsidized. However, given the evidence from sub-Saharan Africa, which showed that a large proportion of health and education budgets serves those in upper income groups, cost-recovery schemes represent an opportunity to expand rather than contract the availability of basic health services and attendance in primary schools.

In most policy reform programs fiscal restraint to reduce budget deficits was accompanied by expenditure switching policies that were designed to alter the relative prices of tradable goods (i.e., exportables and importables) to nontradable goods (i.e., home goods). Although relative prices can be changed through a variety of mechanisms including adjusting tariffs, the major policy instrument employed was the depreciation of the local currency. Evidence from sub-Saharan Africa indicated that many countries have had considerable success in devaluing their currency in real terms, thereby raising competitiveness and the incentive to export.

Few empirical studies address the effect on low-income groups of changes in the real exchange rate. Given the heterogeneity of the poor in terms of their sources of income and consumption patterns, generalizations are not possible without further research. Nevertheless, the related questions of whether devaluation was followed by the expected responses—increased agricultural output, higher prices of cereals, and a fall in real wages—were examined at the aggregate level.

Despite the increase in food production through the 1970s and 1980s the increase was not fast enough to keep up with rapid rate of population growth. The difficulties of controlling for weather-related fluctuations in production and the questions concerning the nature and extent of the short-term supply response in agriculture make any attribution to adjustment difficult. However, the lack of any association between food production and exchange rates illustrates both the importance of domestic marketing and trade policy as well as nonprice factors in determining levels of output; and of course the strains caused by the rapid growth of population are also apparent.

Real consumer prices for cereals in urban markets in many of the adjusting countries revealed no sign of increasing in the period after major reforms were instituted. In some cases, such as in Ghana and Somalia, real prices for the major cereals actually fell substantially after the devaluation of the domestic currency and the movement toward greater market liberalization. It is hypothesized that a combination of factors was responsible. First, weather-induced fluctuations raised supply concurrently with policy reform programs that came on-line after the drought of the early 1980s. Second, prior to adjustment, many cereals were highly protected; and rents and fees were extracted by the parastatals and private entrepreneurs controlling grain trade and issuing import licenses. Third, even without import taxes, goods with official low prices were often rationed and available only at high parallel market prices because the demand far exceeded the supply. Consequently, the observed open market prices before liberalization efforts often equalled or exceeded those that would prevail in a regime of free trade and market-determined exchange rates.

The incidence of reductions in government expenditures on food subsidies was also explored among a few countries. A reduction of explicit consumer subsidies may have had negative nutritional consequences primarily among the urban poor. However, subsidies often did not serve the most nutritionally vulnerable (e.g., smallholders living in rural areas) and were typically accompanied by high-priced parallel markets. Targeted interventions must be considered as an alternative to policies designed to maintain universally low food prices.

Real wage data from sub-Saharan Africa revealed that, during the 1980s, official minimum wages were generally lower in most countries than they were during the 1970s. These data do not support the suggestion that wage rigidities were a major impediment to the adjustment process. When attempting to draw some inferences from this data about the effects of policy-reform programs on the poor, however, a number of important caveats apply. First, firms may deviate from legislated wages, which are only paid to a small segment of the population. Second, the relationship between legislated wages and other wages is not well understood. Third, real wages also fell in nonadjusting countries during the 1980s. Fourth, the decline in wages during the period prior to reforms was even greater than during the period following the adoption of policy reform programs.

This last point implies an important underlying issue that must be considered when examining and comparing aggregate data from periods prior to and after the beginning of the policy-reform process: the variability in

performance and outcomes observed in adjusting countries largely reflects 1) different circumstances that precipitated the need for such changes; 2) the external and domestic circumstances under which reform programs are applied; 3) the characteristics of the policy package; 4) the degree and pace of implementation; and 5) the choice of year as the starting point for *adjustment.*

For example, some nations were on the verge of social and economic disintegration prior to the reform program (e.g., Ghana and Somalia). They were characterized by protracted periods of economic decline because of a combination of gross distortions in prices, disincentives to production, and negative external shocks, including the virtual suspension of foreign investment and aid. In such cases structural adjustment and the related financing are likely to bring about positive GDP growth and distributional outcomes. In contrast, other countries displayed a healthy rate of growth in the years prior to adjustment, and the need to implement policy reforms arose as a result of a combination of bad domestic policies (e.g., overexpansion of investment in Côte d'Ivoire and Madagascar) or unfavorable international events (e.g., the war in Mozambique, which severed Malawi's main transport routes, and the decline in oil revenues in Cameroon). In these cases, where adjustment was preceded by economic expansion that led to unsustainable deficits (either due to unsustainable levels of investment or deteriorating terms of trade), policy reform will likely be accompanied by declines in aggregate incomes whereby households, including the poor, stand to be adversely affected. Thus the conditions prior to adjustment coupled with the choice of policy instruments and the pace and timing of their introduction determined the effects on low-income groups. Further research into the linkages between macroeconomic and sectoral policy reforms and the living standards of the poor must take into account the divergent contexts and prior conditions of the study countries.

Finally, there has been considerable discussion about the need for programs to compensate the poor for short-term losses resulting from policy reforms. Before doing so, greater effort is required to identify how specific population groups have been and will be affected by policy reforms. Caution must thereafter be employed before initiating large-scale and expensive compensatory efforts throughout sub-Saharan Africa, especially given the extensive managerial and financial resources and social infrastructure that would be required. Nonetheless, living standards and welfare must be raised primarily through growth-oriented policies that are broad based to accommodate the poor.

1. INTRODUCTION

Macroeconomic stabilization programs are intended to restore external and closely related internal financial account balances. Addressing disequilibrium in the current account of the balance of payments requires that either more funds be borrowed to finance the disequilibrium or that fiscal and monetary restraint be employed to reduce the imbalance between aggregate income and aggregate expenditures.

Stabilization measures designed to restore financial account balances by reducing consumption, government spending, and investments (which are together referred to as absorption) are often complemented by the process of structural adjustment, which is designed to increase the efficiency of resource allocation and investment (thereby pushing out the full employment equilibrium). The removal of distortions in product and factor markets is the centerpiece of structural adjustment programs. Thus a structural adjustment program that raises output and/or provides financing to lessen the hardships associated with restoring equilibrium can enable the process of stabilization to be orderly, politically palatable, and sustainable.

In most countries stabilization and structural adjustment go hand in hand. That is, structural adjustment is more likely to succeed in a relatively stable environment; and many structural adjustment policies (e.g., improved efficiency of public sector enterprises) promote the objectives of a stabilization program. Nevertheless, policies that fall under the domain of structural adjustment may tend to destabilize internal and external account balances in the short term. For example, trade liberalization may exacerbate trade imbalances in the short term, contributing to the demise of enterprises that are unable to adjust rapidly to a changing environment because of lags in the movement of resources from protected sectors to other activities.[1] Therefore stabilization and structural adjustment efforts necessitate careful consideration of sequence and pace.

Attention must likewise be given to the choice among alternative paths to adjustment. To illustrate, consider the options available to improve a country's balance of payments position. Policymakers can choose between

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[1] If inefficient industries are net foreign exchange users, there may be some foreign exchange savings from liberalization.

a combination of (a) restricting demand through fiscal restraint or (b) exchange rate depreciation. Pursuing a policy that emphasizes the former will likely more adversely affect employment, resulting in greater social consequences; however, stressing devaluation without fiscal restraint will likely contribute to higher rates of inflation. In addition, removing trade restrictions on all imports may be advisable on efficiency grounds. If tariff revenues are an important part of the budget, however, deficits can rise in the short term. There may also be justification for adopting an expansionary fiscal policy to counter a possible reduction of economic activity in the transitional period due to trade liberalization, contributing to an overall worsening of existing imbalances. Thus stabilization and structural adjustment are in practice highly interdependent, and policymakers confront numerous tradeoffs among policies aimed at restoring equilibrium in the account balances and those that are designed to foster greater long-term economic growth.

Of greater importance are the major types of policy instruments used in stabilization and adjustment programs, such as depreciation of the currency, price liberalization, monetary contraction and interest rate reform, trade liberalization, budgetary restraint, and tax adjustments, which will have short- and medium-term consequences for human resource development in general and the health and nutritional status of the poor in particular. These short- and medium-term effects, which arise during the adjustment process, are mediated primarily through measures designed to reduce absorption (i.e., the sum of government spending, consumption, and investment), to remove the pervasiveness of parallel markets, and to induce a short-term supply response. For example, measures to reduce the budget deficit can include reductions in transfer payments and consumer subsidies leading to real wage losses, cutbacks in social sector spending in areas such as health and education, wage restraints, and a loss of public sector employment opportunities. Complementary to these measures are efforts, such as devaluing the exchange rate, to promote a shift in relative prices and the composition and level of output. When such devaluation is accompanied by general trade liberalization, it is an empirical question whether, for example, the expected higher producer prices that raise output and generate employment, coupled with the elimination of low price official markets and high price parallel markets, will benefit or hurt the various groups of households failing below a normative poverty line.

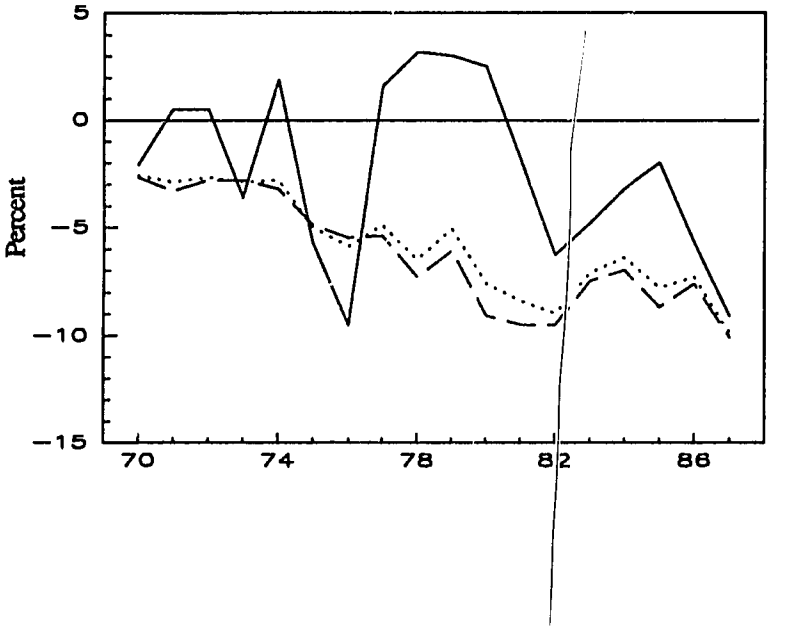
Most of the literature dealing with the consequences of adjustment focuses on middle-income Latin American nations. In contrast the more recent results of adjustment programs in sub-Saharan Africa (SSA) have

been subject to less scrutiny. The remainder of this monograph, using available secondary data, focuses on experiences gained during the process of adjustment in low-income sub-Saharan African countries.

As a point of departure it is recognized that restoring sustainable financial stability is a necessity for many SSA countries that recorded an extraordinarily weak economic performance during the 1970s due to a combination of internal and external factors. In particular, government budget deficits worsened from an average of 2.9 percent of GDP in 1973 to 7.6 percent in 1980 with an average annual rate change of 26.1 percent per year during this period (Figure 1 and Appendix Table 1). This declining trend continued until 1982. There was an improvement for the next few years before things began to get worse again between 1985 and 1987. Overall there was a more rapid rate of decline between 1973 and 1980 for non-oil exporters than for oil producers, as the mean budget deficit for the former group increased from 2.8 to 9.1 percent of GDP, and the oil producers saw their budget deficits of 3.6 percent of GDP in 1973 turn into a surplus by 1980. In contrast the deterioration in the budget deficit during the 1980s accelerated for oil exporters as the rate of deterioration was abating for non-oil exporters.

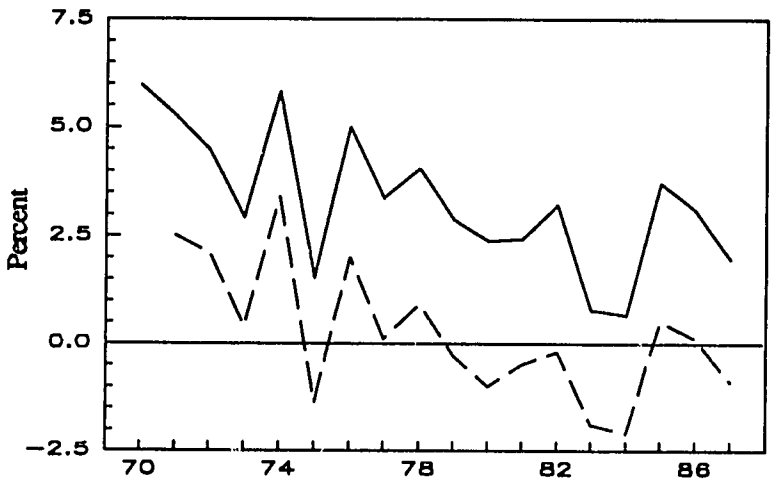
The economic problems in SSA during the 1970s were also reflected in aggregate economic performance. GDP growth rates were generally in decline during the 1970s, a trend that continued until 1984 when there was a large jump in growth rates for one year only to be followed by a steady decline from 1985-87 (Figure 2). The growth rate for low-income countries in SSA was approximately half that recorded for middle-income countries. Countries in southern Africa performed nearly twice as well as those in east Africa during the 1970s. In 11 out of 40 countries the annual GDP growth rate exceeded five percent while in 16 of the countries the annual g. .th rate was less than three percent. On a per capita basis growth rates were much slower. In fact 17 out of 39 countries recorded negative GDP per capita growth rates during the 1970s, and the overall average growth rate of GDP per capita was only 0.5 percent (Appendix Table 2). Between 1981 and 1984 the situation deteriorated. Nearly three-fourths of the countries registered negative growth rates of GDP per capita. Non-oil exporters performed worse, averaging a GDP per capita growth rate equal to -1.2 percent annually. During 1985-87 growth rates turned slightly positive for non-oil exporting nations although the -2.4 percent growth rate for oil exporters is a strong reflection of the decline in oil prices. Interestingly, simple correlation analysis revealed no relationship between GDP growth rates and the level of or changes in the budget deficit either during the period of economic

Figure 1 – Government Budget Surpluses as a Percent of GDP



Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.
Note: Data in this and all following figures are calculated as unweighted averages.
See Appendix Table 1 for a list of countries included in this figure.

Figure 2 – GDP Growth Rates, in Percent per Year



——— GDP

— — GDP per Capita

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: See Appendix Table 2 for a list of countries included in the figure.

decline that predates adjustment or after policy reform programs were initiated.

The poor macroeconomic performance in SSA during the 1970s was likewise reflected in aggregate data on malnutrition. During the decade prior to the beginning of macroeconomic adjustment programs, the proportion of the population below a normative calorie threshold declined only slightly. The number of malnourished children actually increased between 1969-71 and 1979-81 in absolute terms by 13-18 million people because of the rapid increase in the population (Table 1).[2] Of 32 SSA countries for which data were available 11 witnessed a negative average annual rate of change in per capita consumption of dietary energy between 1973 and 1980 (Appendix Table 3).[3] Overall average calorie consumption per capita increased by around five percent between 1973 and 1980. The early 1980s saw a gradual decline in calorie intake. In fact, 23 of 32 countries witnessed a negative annual average change between 1981 and 1983, likely reflecting a combination of economic stagnation and drought throughout much of SSA. However,

Table 1 – Number and Percent of Malnourished in Africa

	Estimate A[a]		Estimate B[b]	
Year	Number of Malnourished (million)	Proportion of Population Malnourished (percent)	Number of Malnourished (million)	Proportion of Population Malnourished (percent)
1969-71	57	20	81	29
1979-81	70	19	99	26

Source: Food and Agriculture Organization of the United Nations, 1985.

[a] This estimate employs a calorie threshold that corresponds to 1.2 times the Basal Metabolic Rate.

[b] This estimate employs a calorie threshold the corresponds to 1.4 times the Basal Metabolic Rate.

2 There are some indications that, in addition to the increased number of people who have fallen below a normative caloric threshold, inter-year instability in calorie intake has risen in Africa since 1980 largely because of the increased yearly fluctuations in cereal production (Sahn and von Braun, 1987).

3 Changes in calorie levels are expected to be considerably less than for incomes, owing to the fact that income elasticities for calories have, on the average, been shown to be low—i.e., between 0.1 and 0.4 (Alderman, 1989).

this trend appears to have bottomed out in 1983 for oil exporters and in 1984 for non-oil exporters (see Figure 3).

It is difficult to ascertain the extent to which misguided economic policies were responsible for the deteriorating economic outlook in SSA during the 1970s and early 1980s. External shocks no doubt were important factors leading to food insecurity and declining nutrition prior to policy reform. Similarly, the circumstances that have constrained or facilitated a turnaround in country aggregate growth are equally difficult to determine without resorting to complex modeling. However, the importance of exogenous factors is evidenced by the decline in the international terms of trade during the 1970s among all but oil-exporting countries (Figure 4 and Appendix Table 4). In fact 24 of 32 countries witnessed their terms of trade decline by more than three percent annually between 1970 and 1980. For non-oil exporting countries the average drop in the terms of trade index numbers was from 138 in 1973 to 100 in 1980. It was also the low-income countries of Africa that faced the greatest level of deterioration.

In the face of external fluctuations in the terms of trade government policies conditioned the economy's ability to respond to (and therefore cope with) changing exogenous circumstances. The relative importance of endogenous decision variables and exogenous shocks to economic performance has been discussed elsewhere (see, for example, Wheeler, 1984; Belassa, 1983; Feder, 1982; Krueger, 1983; Landau, 1986). The one common theme of these studies is the vital role that policymaking played in determining economic outcomes especially in response to exogenous shocks. The need for policies to address the emerging economic stagnation and disequilibria was clear. The question was not whether to adjust but how, when, and over what time frame.

In response to the economic disequilibria the macroeconomic adjustment process began in SSA countries during the 1980s. These adjustment programs were characterized by a variety of objectives and policy reform initiatives, often supported by external financing. Table 2 presents the dates and values of adjustment loans from the World Bank, and Table 3 the dates and values of IMF loans in sub-Saharan African countries.[4] The widespread

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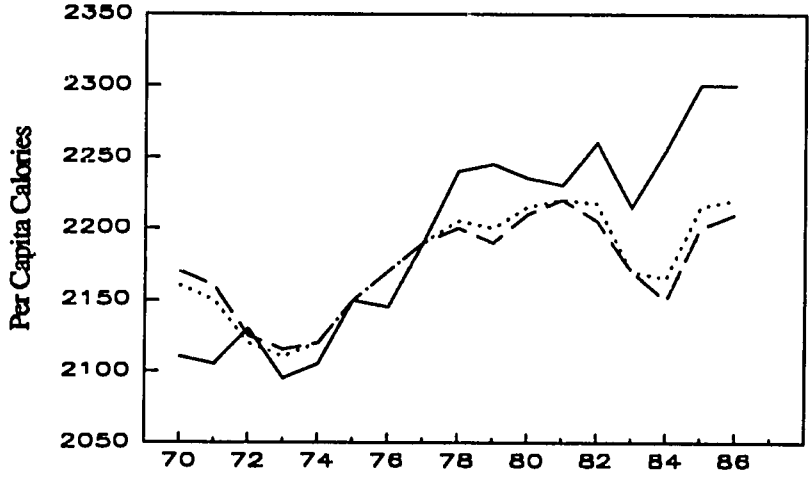
[4] Tables 2 and 3 exclude macroeconomic adjustment and policy reform programs that were initiated and/or supported by the country itself or by the donor community through modalities other than IMF stabilization and World Bank adjustment loans—e.g., the Cereal Reform Policy in Mali.

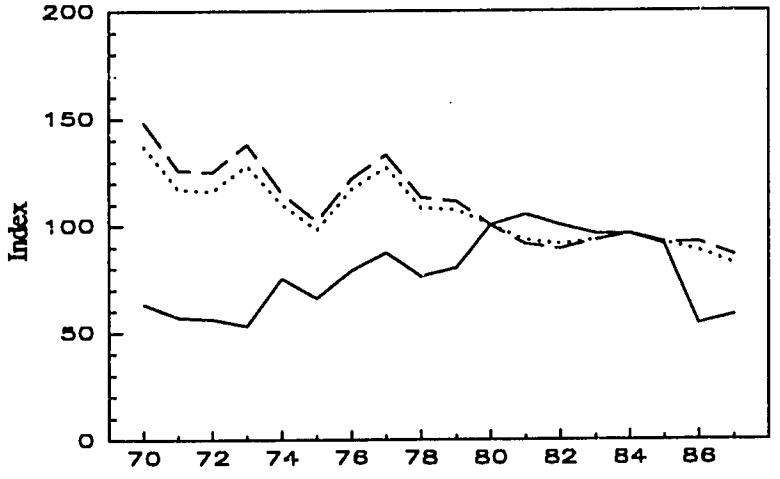
Figure 3 – Average per Capita Calorie Consumption



——— Oil Exporters
— — Non-oil Exporters
..... Average

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.
Note: See Appendix Table 3 for a list of countries included in this figure.

Figure 4 – Real Terms of Trade Expressed as Indices (1980 = 100)



——— Oil Exporters
— — Non-oil Exporters
..... All

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.
Note: See Appendix Table 4 for a list of countries included in this figure.

Table 2 – Dates and Values of World Bank Adjustment Loans in Sub-Saharan Africa

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Total
Benin	–	–	–	–	–	–	–	–	–	50.0[a]	50.0[a]
Burkina Faso	–	–	–	–	–	13.7[c]	–	–	–		13.7
Burundi	–	–	–	–	–	–	54.7[a,b]	–	–	33.1[c]	87.8
Cameroon	–	–	–	–	–	–	–	–	–	75.0[a]	75.0
Chad	–	–	–	–	–	–	–	–	–	76.2[c]	76.2
Central African Republic	–	–	–	–	–	–	30.0[a,b]	–	15.0[c]	–	45.0
Côte d'Ivoire	–	150.0[a]	–	250.7[a]	–	–	250.0[a]	–	–	–	650.7
Gambia	–	–	–	–	–	–	24.3[a,b]	–	–	23.0[a]	47.3
Ghana	–	–	–	40.0[c]	76.0[c]	103.7[c,d]	88.0[c,d]	157.1[a,b]	100.0[c]	126.6[a,c]	691.4
Guinea	–	–	–	–	–	–	90.1[a,b]	–	–	9.0[a]	99.1
Guinea-Bissau	–	–	–	–	15.0[c,d]	–	–	23.5[a,b]	–	23.0[a]	61.5
Kenya	55.0[a]	–	130.9[a]	–	–	–	73.7[c,d]	–	102.0[c]	173.7[c]	535.3
Madagascar	–	–	–	–	–	60.0[c,d]	62.5[c,d]	99.8[c,d]	125.0[c]	1.4[c]	348.7
Malawi	45.0[a]	–	–	60.0[a,c]	–	158.9[a,b]	–	–	70.0[c]	5.2[c]	339.1
Mali	–	–	–	–	–	–	–	–	40.0[c]	25.0[c]	65.0
Mauritania	–	–	–	–	–	16.4[c]	20.0[c]	49.9[a,b]	–	–	86.3
Mauritius	–	15.0[a]	–	40.0[a]	–	–	–	25.0[c]	–	–	80.0
Mozambique	–	–	–	–	–	–	–	–	–	87.0[a]	87.0
Niger	–	–	–	–	–	–	64.8[a,b]	80.0[c,d]	–	–	144.8
Nigeria	–	–	–	250.0[c]	–	–	452.0[c]	–	–	500.0[c]	1,202.0
Sao Tome and Principe	–	–	–	–	–	–	–	7.0[a,b]	–	–	7.0
Senegal	60.0[a]	–	–	–	–	–	72.9[a,b]	93.9[a,b]	–	5.5[a]	232.3

(continued)

Table 2 (continued)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	Total
Sierra Leone	–	–	–	–	21.5[c]	–	–	–	–	–	21.5
Somalia	–	–	–	–	–	–	70.7[c,d]	–	–	70.0[c]	140.7
Sudan	65.0[c]	–	–	50.0[c]	–	–	–	–	–	–	115.0
Tanzania	–	50.0[c]	–	–	–	–	133.2[c,d]	–	30.0[c]	147.5[c]	360.7
Togo	–	–	–	40.0[a]	–	77.1[a,b]	–	–	–	0.1[a]	117.2
Uganda	–	–	–	70.0[c]	–	–	–	–	–	26.7[a]	96.7
Zaire	–	–	–	–	–	–	85.9[c,d]	164.3[a,b]	–	–	250.2
Zambia	–	–	–	–	75.0[c]	117.2[c,d]	50.0[c]	–	–	–	242.2
Zimbabwe	–	–	–	70.6[c]	–	–	–	–	–	–	70.6
Total	225.0	215.0	130.9	871.3	187.5	547.0	1,622.8	700.5	482.0	1,458.0	6,440.0

Note: No SAF/JF data for 1988 and 1989.

[a]Structural adjustment loan, IBRD/IDA.

[b]Structural adjustment loan, SAF/JF.

[c]Sectoral adjustment loan, IBRD/IDA.

[d]Sectoral adjustment loan, SAF/JF.

Table 3 – Dates and Values of IMF Loans in Sub-Saharan Africa

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
					(million SDRs)					
Burundi	–	–	–	–	–	–	48.1[a,c]	–[a]	–	48.1
Chad	–	–	–	–	–	–	–	19.4[c]	–	19.4
CAR	4.0[a]	10.4[a]	–	18.0[a]	15.0[a]	15.0[a]	–[a]	8,0[a,c]	–	70.4
Congo	–	–	–	–	–	–	22.4[a]	–[a]	22.4	
Côte d'Ivoire	–	484.5[b]	–	–	82.8[a]	66.2[a]	100.0[a]	–[a]	94.0	827.5
Equatorial Guinea	5.5[a]	–	–	–	–	9.2[a]	–[a]	–	11.7[c]	26.4
Gabon	34.0[b]	--	–	–	–	–	98.7[a]	–	–	132.7
Gambia	–	–	16.9[a]	–	12.8[a]	–	16.0[a,c]	–[a]	20.5[d]	66.2
Ghana	–	–	–	238.5[a]	180.0[a]	–[a]	81.8[a]	613.5[a,e]	–[d]	1,113.8
Guinea	–	–	25.0[a]	–	–	–	33.0[a]	48.4[a,c]	–	106.4
Guinea-Bissau	–	–	–	–	–	–	–	4.8[c]	4.8	
Kenya	241.5[a]	–	151.5[a]	176.0[a]	–	85.2[a]	–	–	175.2[a,c]	829.3
Liberia	65.0[a]	55.0[a]	55.0[a]	55.0[a]	–[a]	–[a]	–	–	–	230.0
Madagascar	10.0[a]	76.7[a]	51.0[a]	--	33.0[a]	29.5[a]	30.0[a]	42.2[a,c]	13.3[a]	285.7
Malawi	49.9[a]	–	22.0[a]	181.0[b,e]	–[b]	–[b]	–[b]	–	68.8[b,d]	321.7
Mali	–	–	30.4[a]	40.5[a]	–[a]	22.9[a]	–[a]	–[a]	45.0[a,c]	138.7
Mauritania	29.7[a]	26.0[a]	–	–	–	12.0[a]	33.5[a,c]	10.0[a]	–	111.2
Mauritius	35.0[a]	30.0[a]	–	49.5[a]	–	49.0[a]	–[a]	–	–	163.5
Mozambique	–	–	–	–	–	–	–	38.7[c]	–	38.7
Niger	–	–	–,18.0[a]	16.0[a]	13.5[a]	31.5[a,c]	–	50.6[d]	79.0	
Nigeria	–	–	–	–	–	–	–[a]	650.0[a]	–	650.0
Sao Tome and Principe	–	–	–	–	–	–	–[a]	–	–	–

(continued)

Table 3 (continued)

Country	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
					(million SDRs)					
Senegal	184.8[b]	63.0[a]	47.3[a]	63.0[a]	–	76.6[a]	88.0[a,c]	21.3[a]	144.7[d]	688.6
Sierra Leone	–	163.7[b]	–	–	50.2[a]	–	59.9[a,c]	–[a]	–	273.8
Somalia	11.5[a]	43.1[a]	60.0[a]	–	–	22.1[a]	–[a]	61.2[a,c]	–	198.0
Sudan	–	–	198.0[a]	170.0[a]	90.0[a]	–[a]	–	–	–	458.0
Tanzania	179.6[a]	–	–	–	–	–	–	132.2[a,c]	–	311.8
Togo	–	47.5[a]	–	21.4[a]	–[a]	15.4[a]	23.0[a]	–[a]	37.4[a,c]	144.7
Uganda	12.5[a]	112.5[a]	112.5[a]	95.0[a]	–	–	–	63.3[c]	–	395.8
Zaire	–	912.0[b]	–	228.0[a]	–[a]	162.0[a]	214.2[a]	224.8[a,c]	–	1,741.0
Zambia	–	800.0[b]	–	211.5[a]	225.0[a]	–[a]	229.8[a]	–[a]	–	1,466.3
Zimbabwe	–	37.5[a]	–	300.0[a]	–	–	–	–	–	337.5
Total	863.0	2,861.9	769.5	1,865.3	704.8	578.5	1.110.0	1,937.7	661.0	11,301.2

Note: No SAF/JF data for 1988 and 1989.
[a]Structural adjustment loan, IBRD/IDA.
[b]Structural adjustment loan, SAF/JF.
[c]Sectoral adjustment loan, IBRD/IDA.
[d]Sectoral adjustment loan, SAF/JF.

nature of stabilization programs and structural adjustment lending in SSA is evident. The growth of program (i.e., policy-based) lending by the World Bank is also clear, increasing from $220 million in 1980-81 to $1,162 million in 1984-85. By and large the IMF programs were short-term efforts at demand management through controlling the budget deficit and restricting extension of domestic credit. They were designed to restore balances in the external account and to alleviate economic crises that threatened financial solvency. In contrast the World Bank loans were more broadly focused and were intended to aid in restructuring the economy toward the promotion of growth over the medium- and long-term through reforms of exchange rates, liberalization of trade and marketing, privatization of public enterprises, and so forth.

It would be convenient to clearly delineate policy reform measures attributable to the IMF and World Bank (and other bilateral donors as well) and to then measure the response of the economy and consequent changes in household living standards. However, the empirical investigation of the impact of reform programs on aggregate economic performance and indicators of living standards is an ambitious undertaking. One basic problem is that exploring any causal relationship between reform programs and economic and social outcomes requires that a multitude of important dimensions be considered in explaining performance. The data requirements of such a modeling exercise are extremely demanding.

In particular, causally relating policy reform to aggregate economic indicators and living standards requires an analytical model that allows one to explore the counterfactual and takes into account the nature and timing of policy changes as well as a number of other important dimensions. These include (1) the economic and social conditions, structural characteristics, and rules and regulations in the economy; (2) the level of infrastructure development and the quality of human resources prior to undertaking policy reform; (3) the timing and magnitude of policy-based lending and official development assistance (ODA); (4) movements and change in exogenous factors; and (5) some knowledge of the lags between (a) the planning and actual implementation of policy reforms, (b) the initiation of reforms and changes in the structure and level of output, and (c) the effect of changes in output on labor demand, incomes, and consumption.

Taking into account these types of determinants of performance obviously requires developing complex analytic models, which are beyond the scope of this monograph.[5] In a multi-country analysis such as this one, it would be convenient to simply (and subjectively) distinguish between adjusting and nonadjusting countries and compare their performance between two (subjectively) selected time periods. However, implicit in such an exercise is that the types of confounding variables discussed above are controlled for and that the different time periods in which performance is compared represent two different policy regimes, the latter of which is a *consequence* of a policy reform program. Such a set of assumptions is not considered valid.

This leads us to search for compromise that on the one hand does not require an extremely complex model that incorporates all the diversity and instability in SSA and on the other hand does not require making a set of heroic assumptions and subjective decisions that fail to hold under even the most limited scrutiny. This monograph therefore focuses on a preliminary investigation of economic performance and trends in SSA during the last half of the 1970s and first half of the 1980s and how policy has evolved in recent years.

The point of departure is the conceptual framework found in Figure 5. It illustrates the major links between policy reform and household-level outcomes as measured in terms of food security and poverty. Macroeconomic adjustment policies, in concert with the international environment, will affect the functioning of the public sector. Taxes, transfers, and the level and patterns of expenditures will be affected, which will subsequently have an impact on household incomes, the nature and level of services they receive, and the quality of social and physical infrastructure. At the same time the adjustment policies will affect output, employment, factor payments, and prices. These too will result in a level and pattern of household-level incomes that will determine the level of poverty.

To facilitate an understanding of the linkages between policy reform, economic performance, and households' welfare, Sections 2 and 3 of this monograph will be limited to employing aggregate data from secondary sources to examine two policy areas that are generally included in structural adjustment programs—expenditure-reducing and expenditure-switching policies. The former section focuses on fiscal policy. It examines changes

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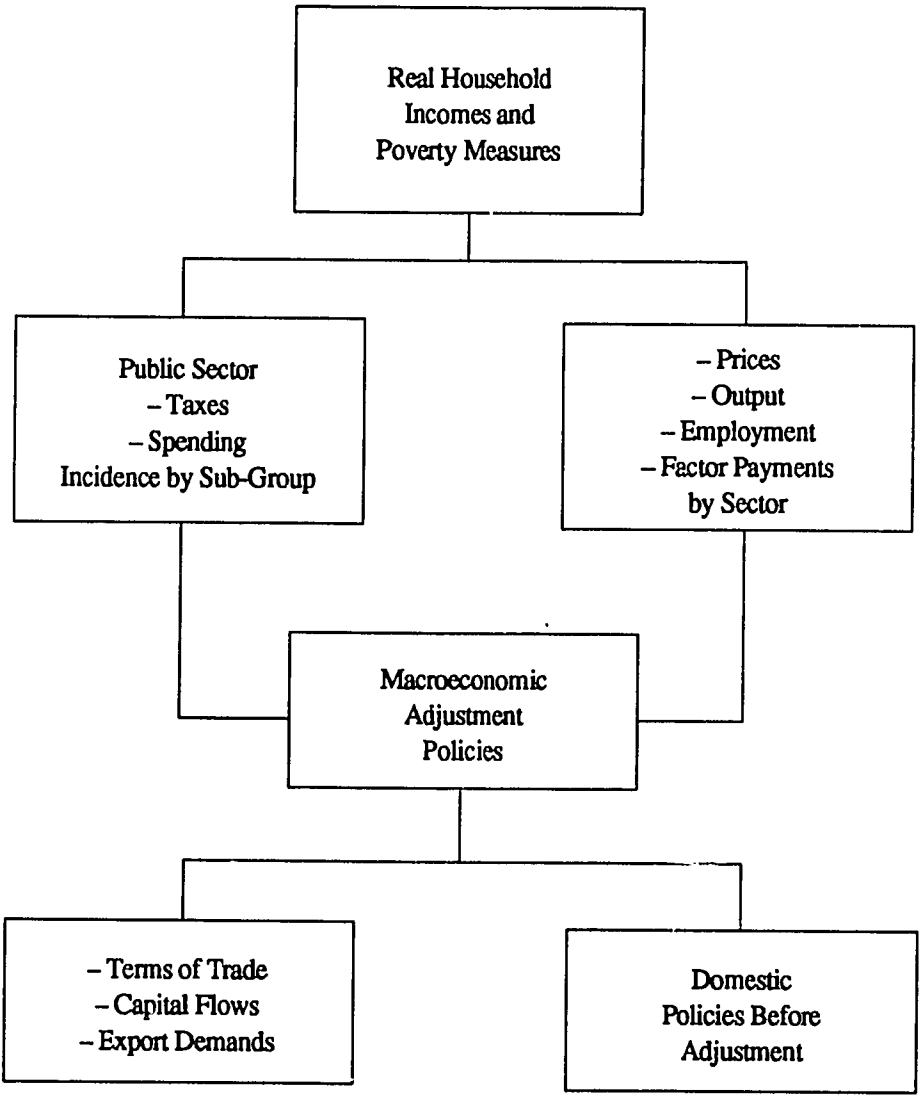
5 Such models of varying complexity are currently being developed for selected countries under a USAID-funded study being directed by the author of this monograph.

Figure 5 – Conceptual Framework of Links Between Macroeconomic Adjustment and Household Outcomes



Source: Adapted from Scobie, 1989

in levels and patterns of government spending in SSA, how those changes relate to aggregate economic performance, and whether countries undertaking structural adjustment programs have displayed any clear discontinuities in patterns or levels of public expenditures. This choice of focus reflects the belief that reducing public expenditures is perhaps the most direct means of bringing aggregate supply and demand into balance, and such restraint is often the first area donors target in the context of adjustment programs. In addition data on central government finances are relatively complete, allowing one to analyze patterns and trends across countries.

Section 3 on expenditure-switching policies is focused on two important questions. First, have countries achieved a real devaluation of their exchange rates? Second, given the expectation that expenditure-switching policies, especially devaluation, will result in changes in relative and real prices, are consumers paying higher prices for staple cereals, and are employees receiving lower wages?

The trend analysis employed in both these sections fails to deal with the counterfactual, which involves delineating what would have taken place in the absence of policy reform. In fact, as intimated above, determining causation requires comparing observed trends with counterfactual values, the differential being the impact of adjustment.[6] Nevertheless, examining trends over many countries provides important insights into the impact of adjustment especially for indicators and data elements where the influence of exogenous variables on the economy do not differ dramatically from year to year or period to period.

In order to relate the discussions of the trends and patterns observed in Sections 2 and 3 to low-income groups, each subsection begins with a conceptual discussion of the likely effect of macroeconomic adjustment programs on the poor and is followed by a presentation of available empirical

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6 One important caveat in measuring impact using counterfactual analysis, which is designed to control for the influence of exogenous events on outcomes, is that policy and exogenous factors may be related. Most important is the possibility that adjustment programs induce a positive response on foreign exchange availability (i.e., adjustment loans) and, consequently, official imports. If one does not characterize the improved flow of foreign exchange as exogenous since it followed from the donor's rewarding a country under adjustment, the potential negative impact on policy changes may be overwhelmed by the positive impact of relaxing the foreign constraint making the net impact positive. On the other hand, if the policy changes undertaken by the government are viewed in isolation, factoring out the flow of foreign exchange, the outcome of the adjustment program may not prove as favorable.

data that either confirm or reject our expectations about the influence policy reform has on the nature and direction of change in key economic variables. An attempt is made to identify patterns across countries. This is admittedly difficult because of the vast differences among countries in the conditions prior to macroeconomic adjustment. This, coupled with the divergence in the policy changes and level of implementation, limits the conclusions that can be reached based on a cross-country analysis of trends in aggregate data.

Finally, Section 4 presents some concluding remarks especially on the issue of providing a greater degree of protection to vulnerable groups during adjustment.

2. FISCAL POLICY REFORMS

Fiscal deficits contribute to disequilibria in both the internal and external account balances. Sub-Saharan African countries generally have limited and erratic sources of revenue such as loans and taxation of primary products with volatile levels of output and prices. These factors, coupled with a lack of discipline on the expenditure side, have contributed to serious fiscal problems leading to inflation, high interest rates, and untenable debts and budget deficits.

The need for fiscal adjustment to correct imbalances is clear. However, policymakers face the dilemma of how to carry out a prudent fiscal policy without jeopardizing the vital public investments and services that contribute to long-term growth and human resource development. In addressing this dilemma it is important to be aware of both the direct and indirect distributional and welfare effects as well as the political ramifications of changes in public expenditures and taxation. The direct results of policy reforms are best measured in terms of the effective fiscal incidence. This measure takes into account not only the statutory incidence of, for example, who pays (e.g., households, corporations) and who is the direct recipient of the taxpayers' money (e.g., government employees, teachers) but actually incorporates secondary effects: the final resting place of taxation (e.g., consumer of a good whose production is taxed) and expenditures (e.g., children attending a subsidized school or health clinic). *Net* fiscal incidence refers to the difference between the combined primary and secondary benefits from expenditures and burdens of taxation (Catsambas, forthcoming).

Determining the changes that result from reform policies in net fiscal incidence among different population groups represents an important research question requiring household surveys. Little empirical research is available, and data on net incidence are not reported in government accounts. Therefore the discussion in this monograph is limited to an examination of aggregate fiscal data on government expenditures and to a consideration of some of the salient conceptual issues pertaining to both spending and revenue collection, which determine the effects of policy changes on living standards.

DIRECT EFFECTS OF EXPENDITURE REDUCTION

Fiscal policy reforms that reduce government expenditures will affect income flows to various economic agents or sectors. For example, wage reductions for government employees and wage laborers working on public works projects may have deleterious consequences if these groups include many poor households. Governmental belt-tightening may also affect the poor because of reductions in transfer payments and services, including expenditures for health and education. While it is known that lowering the wage bill is likely to directly harm the urban middle class relatively more than the poor, determining the secondary effects as mediated through the delivery of health, educational, and economic services is more complex. The measurement of tertiary effects of the changes in wage payments on the demand for goods and services that may be supplied by the poor requires a general equilibrium model, which lies outside the scope of this monograph.

In examining these considerations in the context of adjustment programs, four related issues arise: (1) whether and the extent to which government expenditures are reduced; (2) whether the recurrent budget is reduced more (or increased more slowly) than the capital budget and whether wages and salaries are more likely to be cut; (3) whether the social sector is more vulnerable to fiscal restraint than other categories; and (4) whether changes in intrasectoral allocations made during adjustment favor primary and basic services (e.g., primary health care, primary schools) or secondary and tertiary services.

In considering these issues, data are presented from countries throughout sub-Saharan Africa. It is important, however, to not infer direct causality between a stabilization or adjustment program funded by the World Bank or IMF and observed changes. Quite simply, adjustment lending often occurs in the face of severe economic crises that would precipitate radical changes in public expenditures without the conditionality that accompanies loans from multilateral institutions. Furthermore, it may even be the case that World Bank and IMF funds, not the change in policies, are responsible for

any observed maintenance or restoration of government spending, growth, and stability.[7]

TOTAL GOVERNMENT EXPENDITURES[8]

Economic growth is expected to increase public spending. Conversely, public spending partially finds justification as a means of fostering and directing economic growth. There is, however, a problem of determining the direction of causation between jointly determined variables. Nonetheless, given that the compression of government spending is purported to be a central pillar of many macroeconomic adjustment policies (whether or not they are in conjunction with World Bank and/or IMF financing designed to reduce aggregate demand and absorption), the most salient issue is the ways in which real government expenditures, both their absolute level and as a percentage of real GDP, have changed over time in SSA.

Total real government expenditures, including interest payment, have risen steadily since the mid-1970s (Figure 6). In the early 1980s expenditures generally continued on an upward trend, although between 1982 and 1984 the rate of spending slowed in real terms but accelerated thereafter in the period 1984 to 1986. With the exception of 1978-79 the rapid growth rate between 1977 and 1982 was largely fueled by the rise in government spending relative to GDP (see Figure 7). Thereafter during a period of drought and economic turmoil in SSA from 1982-84 spending as a share of GDP fell. Subsequently, total expenditures as a share of GDP has steadily risen during the mid-1980s when many SSA countries were adopting policy reform programs in response to the economic crisis. Analyzing total real expenditure data on a per capita basis, however, reveals that following a slow but steady increase between 1977 and 1982 was a downturn until 1984, followed by a recovery so that levels in 1986 are back to those observed in 1982.

Information on total government expenditures provides considerable insight into the extent to which economies are undertaking contractionary

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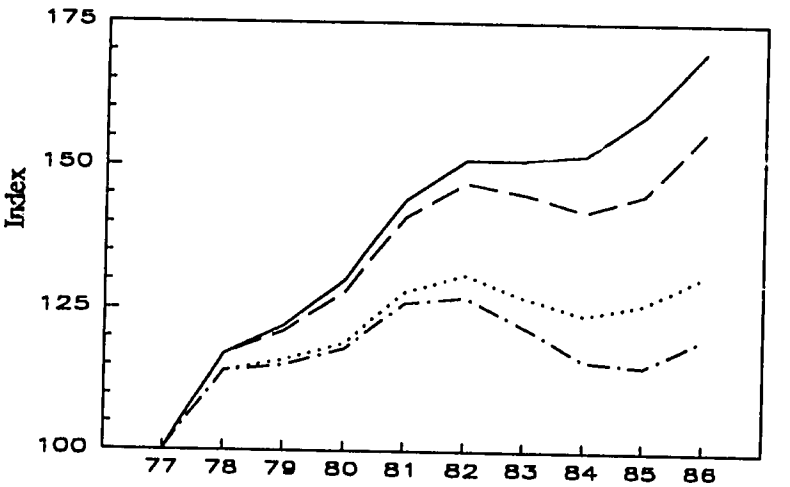
[7] Colclough and Green (1988) argue the importance of resource flows in promoting growth in countries undergoing macroeconomic adjustment.

[8] In this monograph, total government expenditures refer to expenditures plus lending minus repayments. In addition, they do not generally include state-owned enterprises and other agencies that are often found in "off-budget" accounts. Likewise, the data do not include expenditures made by local governments, reflecting the limitations of public finance data.

Figure 6 – Real Government Expenditures Expressed as Indices (1977=100)

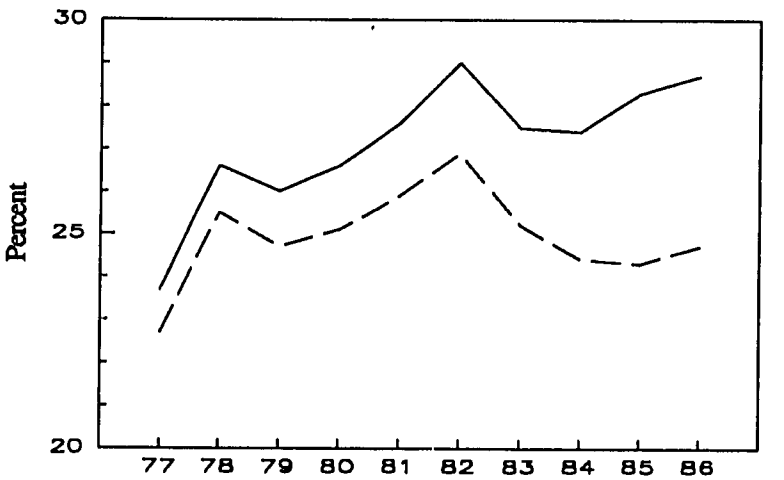


——— Total Expenditures
— — Total Expenditures Net of Interest
····· Per Capita Total Expenditures
—·— Per Capita Total Expenditures Net of Interest

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Notes: In this and the following figures and tables with real indexed values, the local currency values were first deflated into 1980 constant prices, and thereafter indexed as noted in the figure or table. The countries represented in this figure are limited to those for which there was an observation for each of the years 1977 to 1986. These include Botswana, Burkina Faso, Cameroon, Ethiopia, Gambia, Ghana, Kenya, Liberia, Malawi, Mali, Mauritius, Niger, Rwanda, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Zaire, Zambia, and Zimbabwe.

Figure 7 – Government Expenditures as a Percent of GDP



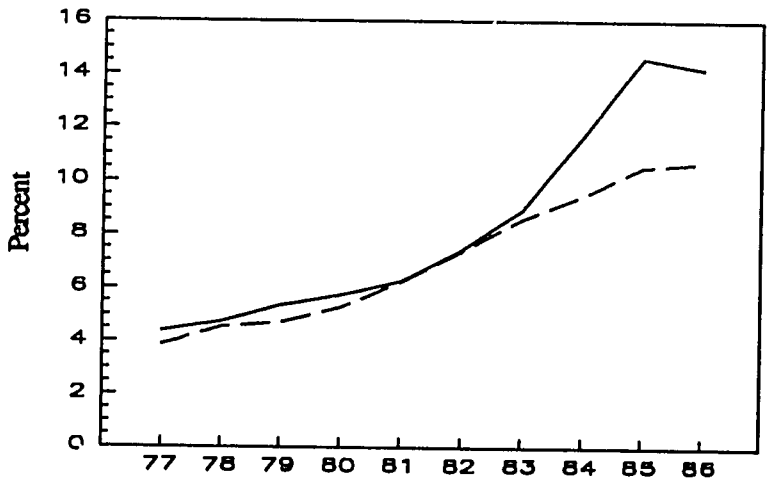
——— Total Expenditures as Percent of GDP

— — Total Expenditures Net of Interest as Percent of GDP

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: The countries represented in this figure are limited to those for which there was an observation for each of the years 1977 to 1986. These include Botswana, Burkina Faso, Cameroon, Ethiopia, Gambia, Ghana, Kenya, Liberia, Malawi, Mali, Mauritius, Niger, Rwanda, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Zaire, Zambia, and Zimbabwe.

Figure 8 – Interest Payments as a Percent of Total Government Expenditures



——— Low Income
— — Middle Income

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: The countries represented in this figure are limited to those for which there was an observation for each of the years 1977 to 1986. These include Botswana, Burkina Faso, Cameroon, Ethiopia, Gambia, Ghana, Kenya, Liberia, Malawi, Mali, Mauritius, Niger, Rwanda, Sierra Leone, Sudan, Swaziland, Tanzania, Togo, Zaire, Zambia, and Zimbabwe.

fiscal policies. However, implicit in the analysis is that maintaining or increasing total expenditures is beneficial to the population either through sustaining recurrent spending and/or promoting investment. This reasoning, however, ignores the issue of the growing fiscal burden of repayment of debt. As shown in Figure 8 the share of total expenditures allocated to repayment of debt has grown dramatically in SSA especially among low-income countries between 1983 and 1985. These debt repayments provide no domestic services, employ no people, develop no infrastructure, and so forth. Therefore, in considering the linkage between public expenditures and human welfare, it is important to examine data net of interest payments.

A reexamination of the data in Figure 6 illustrates how the picture changes when interest payment are netted out. In particular, the level of real total discretionary expenditures (i.e., net of interest) diverges from total expenditures during the 1980s, reflecting the increasing debt burden. In fact, real government expenditures, net of interest payments, actually fell between 1982 and 1984 before recovering thereafter. On a per capita basis the level of real discretionary expenditures was actually lower in 1986 than the peak in 1982. Similarly, when the level of real total discretionary government expenditures is examined as a percentage of GDP (Figure 7), the shares recorded in 1986 were about 1.5 percentage point lower than in 1982.

In exploring changes at a more disaggregated country level, one observes that real government expenditures, net of interest payments, increased in 21 out of 25 countries between 1975-77 and 1978-80; 17 of 32 countries witnessed a higher level of spending, net of interest payments in 1986-87 than in 1978-80. Similarly, real discretionary spending rose between 1984-85 and 1986-87 in 20 of 32 countries (Table 4). If total real expenditures were examined including interest, only 7 countries would have recorded declines in expenditures between 1978-80 and 1986-87, once again showing how the debt burden is affecting the public treasury.

The growth of total discretionary government expenditures in low-income and non-oil exporting countries took place at a much slower pace than in middle-income and oil-exporting countries during the 1980s (Table 4). One also finds that only limited growth in expenditures has occurred during the 1980s in west and east Africa while growth in central and, to a lesser extent, southern Africa has been more rapid throughout the 1980s. Similar figures on discretionary government expenditure expressed as a percentage of GDP indicated that the shares remained quite stable during the past decade in all regions, for low-income and middle-income countries alike (Table 5).

Table 4 – Real Total Government Expenditures (net of interest payments) Expressed as Indices (1978-80=100)

Country	1975-77	1978-80	1981-83	1984-85	1986-87
Benin	118.2	100.0	135.0	110.8	100.6
Botswana	53.4	100.0	135.7	191 6	197.4
Burkina Faso	78.1	100.0	109.3	105.4	130.6
Cameroon	80.5	100.0	183.2	228.4	274.3
Congo	–	100.0	111.2	102.6	87.5
Côte d'Ivoire	–	100.0	103.8	78.5	–
Ethiopia	73.3	100.0	143.6	141.0	164.8
Gabon	–	100.0	114.0	128.1	104.4
Gambia	62.5	100.0	117.1	100.1	149.5
Ghana	138.6	100.0	63.8	84.7	102.7
Guinea-Bissau	–	100.0	89.3	104.7	94.7
Kenya	68.8	100.0	109.6	102.3	125.4
Lesotho	51.2	100.0	83.5	88.5	110.8
Liberia	66.7	100.0	109.5	79.0	79.3
Madagascar	–	100.0	79.7	64.8	65.2
Malawi	56.8	100.0	82.4	81.8	92.8
Mali	74.9	100.0	181.5	212.2	198.5
Mauritania	–	100.0	88.6	105.5	71.0
Mauritius	77.2	100.0	103.5	91.4	97.6
Niger	65.2	100.0	124.0	99.8	99.4
Nigeria	94.2	100.0	88.7	42.1	55.3
Rwanda	70.8	100.0	168.8	158.4	204.9
Senegal	77.4	100.0	125.6	106.9	99.7
Seychelles	–	100.0	99.2	104.7	119.7
Sierra Leone	59.5	100.0	89.3	59.9	58.3
Somalia	66.1	100.0	–	57.3	–
Sudan	101.2	100.0	106.6	120.4	112.9
Swaziland	86.2	100.0	102.4	98.7	93.3
Tanzania	84.2	100.0	93.3	75.0	69.7
Togo	96.7	100.0	82.3	91.5	92.2
Uganda	–	100.0	175.9	178.6	115.5
Zaire	122.9	100.0	112.7	108.9	128.7
Zambia	103.6	100.0	100.8	76.3	91.1
Zimbabwe	79.7	100.0	132.5	142.4	145.9
Average	–	100.0	113.8	112.1	116.7
Oil exporting	–	100.0	126.4	122.4	124.4
Non-oil exporting	–	100.0	111.5	110.0	115.2
CFA	–	100.0	129.6	131.7	131.9
Non-CFA	–	100.0	107.7	104.4	110.7
West	–	100.0	107.9	102.0	104.4
South	–	100.0	106.2	113.2	121.9
East	–	100.0	123.1	116.1	111.3
Central	–	100.0	138.0	145.3	159.9
Islands	–	100.0	94.1	86.9	94.2
Low income	–	100.0	111.4	106.5	110.5
Middle income	–	100.0	121.0	128.9	135.3

Source: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: Group means exclude Côte d'Ivoire and Somalia to ensure comparability across time periods.

Table 5 – Average Annual Total Government Expenditures (net of interest payments) as a Percent of GDP

Country	1975-77	1978-80	1981-83	1984-85	1986-87
Benin	26.87	21.62	23.32	18.12	15.93
Botswana	37.12	43.23	45.22	45.15	40.24
Burkina Faso	12.89	14.92	15.26	14.12	16.09
Burundi	–	–	25.87	24.34	23.22
Cameroon	16.76	14.84	20.03	21.13	22.60
Congo	–	47.21	38.42	32.13	24.72
Cote d'Ivoire	–	31.37	31.01	23.50	–
Ethiopia	18.19	23.06	29.94	30.35	33.27
Gabon	–	31.70	36.88	37.17	33.03
Gambia	20.23	31.62	34.14	29.71	38.97
Ghana	18.37	12.18	8.46	10.69	12.13
Guinea-Bissau	–	72.25	53.28	58.28	50.43
Kenya	21.14	26.05	25.79	22.79	25.08
Lesotho	39.77	54.43	46.41	46.11	54.77
Liberia	19.40	26.60	30.73	22.99	23.56
Madagascar	–	28.69	25.27	19.90	19.36
Malawi	21.32	32.16	26.96	23.97	26.24
Mali	13.43	16.69	27.49	31.95	26.53
Mauritania	–	44.46	37.84	45.19	28.46
Mauritius	23.61	26.57	26.51	21.09	19.01
Niger	13.11	16.18	19.15	18.28	16.98
Nigeria	22.80	20.79	20.25	10.56	13.45
Rwanda	12.15	13.66	19.14	18.26	21.76
Senegal	18.19	22.22	25.29	20.79	18.19
Seychelles	–	49.00	53.72	53.40	57.83
Sierra Leone	17.71	28.05	22.51	15.18	15.66
Somalia	19.33	27.28	–	15.77	–
Sudan	20.06	18.75	18.97	22.88	21.66
Swaziland	35.01	36.44	36.08	32.98	28.26
Tanzania	26.19	29.24	26.60	20.69	18.07
Togo	37.63	34.93	28.65	32.84	30.85
Uganda	–	6.06	8.61	8.96	6.26
Zaire	18.03	15.27	16.71	15.59	17.89
Zambia	35.80	35.48	34.25	26.47	31.22
Zimbabwe	26.05	31.22	33.09	34.25	32.83
Average	–	28.91	28.60	26.94	26.45
Oil exporting	–	27.23	27.78	23.82	22.95
Non-oil exporting	–	29.22	28.75	27.51	27.10
CFA	–	24.48	26.05	25.17	23.32
Non-CFA	–	30.64	29.59	27.63	27.67
West	–	27.94	26.31	25.48	23.64
South	–	38.83	37.00	34.82	35.59
East	–	21.63	23.44	21.44	21.32
Central	–	24.54	26.24	24.86	25.00
Islands	–	34.75	35.17	31.46	32.07
Low income	–	27.52	26.71	25.29	24.90
Middle income	–	33.01	34.27	31.86	31.09

Source: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: Group means exclude Cote d'Ivoire, Somalia, and Burundi to ensure comparability across time periods.

These aggregate figures indicate that there have been no across-the-board reductions in real discretionary government spending in SSA since 1975 and that, for most countries, spending was on the rise or at least steady after 1981-83 despite the proliferation of IMF and World Bank loans that often carry with them conditions involving budgetary austerity. Individual country data can be examined to tell a more detailed story concerning causes and consequences of the evolution of public expenditures. While such an analysis is the objective of the case studies that we are presently conducting, some initial country-specific observations are noteworthy. For example, countries characterized by relatively good economic performance due to combinations of sound policy and a reasonably favorable external environment, such as Botswana and Cameroon until 1987, have displayed consistent increases in real government spending driven primarily by the growth of the GDP rather than consistent increases in total expenditures as a share of GDP.[9]

Other countries like Ghana have shown a dramatic recovery in the level of government spending since the beginning of the adjustment process. This was attributable not only to the growth of GDP but to the higher level of spending relative to GDP as well. Likewise, Malawi's level of expenditures has risen throughout the years following adjustment. In other cases, such as Côte d'Ivoire, Madagascar, Senegal, and Niger, expenditures have declined and/or stagnated since the adjustment process began. In only a few cases, such as Mauritius since 1981-83 and Tanzania and Madagascar since 1978-80, has there been a clear decline in total expenditures as a share of GDP. However, once again such deterioration commenced prior to the donor-financed adjustment programs. It can be reasonably assumed that this simply reflected the economic hardships that precipitated the need for adjustment, and such contraction would have occurred regardless of external financing.

This contention is supported by the expenditure reductions in countries that did not receive donor assistance for macroeconomic adjustment. Swaziland's total expenditures and expenditures as a percent of GDP declined since a peak in 1981-83, despite no Fund or Bank program. The same is true for Benin, which did not receive its first adjustment loan until 1989. Liberia's decline in government expenditures and expenditures as a share of GDP since 1981-83 also took place despite not having received a

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9 Preliminary data from Cameroon show a downturn in government expenditures in 1987 due to the fall in oil revenues.

policy-based loan from the World Bank and having received its last stand-by agreements from the Fund in excess of 0.5 millic.. sDRs in 1983. Similarly, even in Botswana with its robust economy, expenditures were reduced as a share of GDP in 1986-87. These cases suggest that macroeconomic adjustment occurs even in the absence of donor-sponsored programs.

These data provide only limited insights into the nature of changes in public expenditures. Vastly different conditions prior to the initiation of donor-financed economic recovery programs, the marked fluctuations in performance that make trend analysis over short periods precarious, the questionable accuracy of some GDP deflators and the expected lags in the reform process limit the conclusions that can be drawn from the analysis presented above. Nonetheless, the divergent experiences in the countries examined and the changes in expenditure levels not being clearly related to internationally financed adjustment programs are in themselves significant. In fact, an analysis of the discretionary real expenditure levels among 19 countries in the three years preceding and following the date of their first adjustment loan from the World Bank[10] revealed a decline in real expenditures in only 8 of the countries and a growth or negligible change in 11 others (Table 6). Furthermore, expenditures as a share of GDP fell among only 9 of the countries while they rose or remained the same in the remaining 10 countries.[11]

One can attribute only limited meaning to such before/after comparisons. A failure to account for prior conditions and external confounding factors that condition levels of spending suggests caution when interpreting results.[12] In addition, the relatively short time span of the analysis must be considered. Nonetheless, the hypothesis that declines in government expenditures followed on the heels of accepting a structural or sectoral adjustment loan is clearly not supported.

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10 See Table 2 for the dates of the initial adjustment loans. The three years prior to adjustment include the year in which the loan was received.

11 When total expenditures, including interest payments are examined, total expenditures declined in only 6 of the 19 countries, and there was a decline in expenditures as a share of GDP in only 5 countries.

12 Another related reason for not drawing any strong conclusion from the before/after comparisons is the possibility that as a consequence of a prior IMF adjustment loan, declines in expenditure levels had occurred prior to receiving a Bank loan. Analysis of data, however, based on dates of initial IMF loans, indicated that there was no general support for that hypothesis.

Table 6 -- Total Government Expenditures (net of interest payments) Before/after Adjustment

Country	Total Government Expenditure as a Percent of GDP		Total Real Government Expenditure Expressed as Indices (1980 = 100)	
	Before Adjustment	After Adjustment	Before Adjustment	After Adjustment
Burkina Faso	13.9	16.1	96.0	123.9
Côte d'Ivoire	32.1	27.7	105.0	92.0
Gambia	30.5	46.0	108.0	184.0
Ghana	8.5	11.2	83.0	118.0
Kenya	26.0	25.8	96.0	105.0
Madagascar	20.1	19.4	65.0	65.0
Malawi	32.2	27.0	88.0	73.0
Mauritius	27.2	24.3	104.0	99.0
Niger	17.6	17.9	84.0	87.0
Nigeria	20.3	12.0	89.0	49.0
Senegal	22.2	25.3	100.0	126.0
Sierra Leone	19.2	15.4	74.0	56.0
Sudan	18.8	19.0	103.0	109.0
Tanzania	28.3	26.0	104.0	96.0
Togo	28.7	33.6	93.0	107.0
Uganda	8.6	8.1	176.0	158.0
Zaire	15.6	20.1	103.0	138.0
Zambia	31.9	29.5	79.0	74.0
Zimbabwe	33.1	33.2	120.0	127.0

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Notes: Before adjustment is defined as the year in which the first adjustment loan was signed, and the two years previous. After adjustment is defined as the three years after the first adjustment loan was signed. If data were only available for one or two years after adjustment, their average value was used instead.

Three other interesting questions arise concerning the rate of change of expenditures and GDP: (1) what was the relationship between growth in GDP and increased central government budget expenditures; (2) whether that relationship between GDP growth and government spending has changed during the mid-1980s; and (3) whether countries with higher GDP can be expected to have higher/lower levels of expenditures as a share of GDP.

To begin to answer these questions, a simple country fixed effects model was employed whereby the specification of the model results in a parameter estimate that is obtained from within-country variations. The estimator does not utilize the between-country variations. The advantage of this approach is that it removes the potential missing variable bias that might arise due to the exclusion of price, infrastructure, and other variables unknown or unquantifiable that may be correlated with levels of expenditures. It is assumed in this model that the disturbance term is independent across countries and has a value equal to zero.

In algebraic terms, the fixed effects model was employed where variables are expressed in terms of deviation from the country means. TX is the real, indexed (1980=100) total government expenditures net of interest payments, D_1 and D_2 are dummy variables that equal 1 if the years are 1980-84 and 1985-87, respectively, the i subscript represents countries, the t's are the years.[13]

$$\left[\frac{TX_{it}}{GDP_{it}} - \frac{1}{t}\sum\frac{TX_{it}}{GDP_{it}}\right] = \left[\beta_1 + D_1 * \beta_2 + D_2 * \beta_3\right]$$

$$\left[\ln GDP_{it} - \frac{1}{t}\sum \ln GDP_{it}\right] + u_{it}$$

[13] Alternatively, the same model was run where the left-hand side variable is expressed in terms of TX rather than shares. This specification, from which the same elasticities can be derived, yielded nearly identical results, as expected. The use of shares was preferred because it reduces the amount of heteroscedasticity in the model. However, for those concerned with the low R^2 of the share equations, the other specification should be reassuring (see Appendix Table 5).

This model is equivalent to and can be expressed using dummy variables as:

$$\frac{TX_{it}}{GDP_{it}} = \beta_1 * \ln GDP_{it} + \beta_2 * D_1 * \ln GDP_{it}$$

$$+ \beta_3 * D_2 * \ln GDP_{it} + \sum \gamma_i V_i + u_t$$

where V_i represents the vector of variables which take on the value of one if the observation is from the i^{th} country, and is zero otherwise.[14]

The results of the estimation are in Appendix Table 5. They indicate that the beta coefficient, which equals the elasticity of government expenditures with respect to GDP, had a value of 1.39 during the period 1974-79 and 1985-87. This indicates that a 10.0 percent increase in GDP was accompanied by a 13.9 percent increase in total government expenditures. From 1980-84, the elasticity was slightly lower at 0.95. This figure indicates that government expenditures as a share of GDP remained nearly constant during the mid-1980s, regardless of whether GDP was growing or contracting. This is in contrast with the 1970s and 1985-87 when government expenditures as a share of GDP increased with higher GDP and, conversely, fell with lower GDP.

In sum, the data showed that the level of government expenditures continued to increase throughout the period 1980-84, although at a more moderate rate than in the 1970s. This slowing of the rate of growth of total expenditures both in absolute terms and relative to GDP growth in the early 1980s was reversed during the period 1985-87 subsequent to the instigation of donor-financed macroeconomic adjustment programs in many countries. The more than proportionate increase in government expenditures that has accompanied GDP growth during the period 1985-87 is a strong indication that fiscal austerity measures have not occurred in SSA. Whether this reflected a failure to achieve economic targets that called for further fiscal restraints, that conditionality did not include expenditure reductions, or that it is too soon to observe the inevitable adjustments required to address fiscal

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14 The model is limited in not dealing with the joint determination of GDP and government expenditures. While Keynesian growth multipliers from government spending may be quite high, it is likely that a sizeble portion of these effects will be observed in the year subsequent to the initial increase in outlays.

imbalances in many countries, are not clear. It is likely, however, that one does not see a further erosion of spending because this type of policy change was among the most difficult for a government to undertake. In addition, the fact that some countries not receiving adjustment loans have reduced government expenditures in recent years further indicates that economic stagnation, not donor-financed reform programs, will be the main cause of any compression of public sector spending.

CURRENT VERSUS CAPITAL EXPENDITURES AND THE IMPORTANCE OF WAGES AND SALARIES

We next focus on the functional composition of total government expenditure in terms of (1) the relative shares of current and capital expenditures and (2) the allocation to wages and salaries compared with other categories of expenditures. The former is important because, in response to the need for fiscal austerity, choices are made between operations and maintenance on the one hand and investment on the other. The issue of the share of the budget to wages and salaries is highlighted not only because public sector employment is a major source of income for large portions of the urban sector but because those affected are politically powerful, seeking to maintain their jobs and wage levels even at the expense of rationalizing the budget.

Concerning the issue of the relative shares of capital versus recurrent expenditures, favoring the former at the expense of the latter during a period of austerity can have undesirable effects. If recurrent expenditures are cut the likelihood of capital expenditures being used to replace assets that have deteriorated because of shortages of funds for operating expenses is increased. Capital assets, such as schools and health clinics, may be underutilized and undermined because of a lack of recurrent funds for teachers, health workers, books, essential drugs, equipment, and proper maintenance. Underfunding of recurrent expenditures in the health and education sectors may, in fact, represent important long-term disinvestments in human capital.

In practice, however, one would expect capital investments to give way to pressing recurrent expenditures during a period of budget retrenchment. Two reasons in particular are hypothesized. First, countries confront the need to service their debt, an expenditure that primarily shows up on the current account over which they exert little control. Second, as hypothesized above, the pressures to maintain workers on the government payroll may be great, limiting policymakers' options for reducing the wage bill.

The concern with maintaining recurrent expenditures at the expense of capital expenditures has a variety of dimensions. Most important is that reducing public investment, whether in social infrastructure or expenditures on imported capital goods, may impede long-term economic vitality. In order to determine the effects of government cuts in capital expenditures on the economy, however, one must first assess the quality of the investment foregone (i.e., technical and financial feasibility), the level of capacity utilization, and the response of private investment to reduced public investment.

In addition, those who depend on income generated from capital investment expenditures may be adversely affected by declines in the development budget. For example, a decline in construction could create a new class of poor among workers in the building trades. Indirect effects, such as slowing employment creation in small-scale, private enterprises that are dependent on public capital investment in transportation, communication, and related infrastructure could also have adverse affects. Decreases in capital spending, which are often most evident in urban areas, may also have broader implications such as discouraging rural-to-urban migration.

Few studies have empirically examined the choices made by governments. An exception is a study by Hicks and Kubisch (1984). They concluded that when governments are confronted with the need to implement austerity programs, they will cut capital more than recurrent expenditures. These conclusions, however, were based on data from the late 1970s derived from a sample of 32 countries, many of which were not African. It is also not clear whether this study included or excluded foreign-financed investment in total and investment expenditures. This is important, because, if included, foreign investment may represent a significant proportion of total investment, and changes in the level of foreign financing will most likely determine changes in the ratio of recurrent to capital expenditures. Second, governments may be quick to reduce the allocation of domestic budgetary resources to capital expenditures during a period of austerity and expect donors to compensate.

In order to get more recent indications of the ways in which policy reform initiatives affect government behavior, the ratio of recurrent to capital government expenditures (excluding foreign-financed investment) in 26 sub-Saharan countries was examined. Among the most noteworthy findings is the great degree of diversity in the relative shares of government capital versus recurrent spending. Overall, a comparison of data for different time periods reveals a temporary increase in average value of recurrent relative

Table 7 – Average Ratios of Government Recurrent to Capital Expenditures

Country	1975-77	1978-80	1981-83	1984-85	1986-87
Botswana	1.8	2.0	2.4	3.7	3.4
Burkina Faso	4.8	6.0	7.4	13.2	6.8
Burundi	–	0.9	0.9	0.9	1.1
Cameroon	2.0	2.3	1.6	1.5	1.3
CAR	–	3.0	1.6	2.0	1.9
Congo	–	2.8	0.9	1.3	2.9
Côte d'Ivoire	1.4	1.0	1.8	4.3	4.5
Ghana	1.8	5.7	7.9	6.1	6.2
Kenya	3.5	3.5	4.8	6.1	2.9
Madagascar	4.3	2.6	1.9	2.2	2.7
Malawi	1.9	1.5	1.9	2.2	2.7
Mali	9.4	9.0	10.8	16.5	–
Mauritius	–	2.7	4.2	5.5	4.2
Mozambique	–	1.6	1.7	3.3	3.0
Niger	2.1	1.3	0.8	1.0	0.7
Nigeria	1.1	0.9	0.8	1.7	2.0
Senegal	7.7	11.6	6.3	5.7	6.9
Sierra Leone	2.6	5.1	2.8	2.9	–
Somalia	4.2	8.2	8.4	9.6	1.1
Sudan	–	2.3	3.0	5.1	6.6
Tanzania	2.5	1.6	2.4	3.7	3.6
Togo	1.1	1.0	2.8	2.1	2.1
Uganda	4.9	4.7	5.4	6.5	2.7
Zaire	3.6	4.6	3.3	–	–
Zambia	3.5	3.5	4.8	6.1	6.8
Zimbabwe	12.0	17.1	13.2	12.4	–
All Countries	–	–	–	–	–
Excluding Zaire	–	4.1	4.0	5.0	–
Excluding Mali, Sierra Leone, Zaire, and Zimbabwe	–	3.2	3.3	4.3	3.4

Sources: Botswana, Congo, Ghana, Liberia, Malawi, Mali, Mauritius, Senegal, Sierre Leone, Tanzania, Uganda, Zaire, and Zimbabwe (IMF, 1987); Côte d'Ivoire (World Bank 1987g, 1988d); and data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

to capital spending in 1984-85 that was reversed in 1986-87. However, averages obscure the higher ratio in the 1986-87 than in the 1978-80 (Table 7) in 14 of the 22 countries. This lends some support to the generalization that governments have attempted to maintain recurrent expenditures at the expense of investment.

Cuts in capital expenditure relative to recurrent expenditures consequent to an adjustment program were dramatically illustrated by the situation in Côte d'Ivoire. Public investment outlays that grew at 32.5 percent annually between 1975-80 had to be curtailed and subsequently declined by 22.0 percent per year from 1980 to 1985. The escalation of unsustainable investment fueled dramatic growth in GDP, which subsequently contracted following restrictions placed on investment. This pattern of adjustment followed by an increase in the ratio of recurrent to capital spending also occurred, although on a lesser scale, in countries such as Kenya, Malawi, Sudan, and Tanzania. It is also noteworthy that the 1980s saw a decline in the allocation of the budget toward investment relative to recurrent spending in countries not going through donor-financed adjustment programs, such as good performers like Botswana. This decline in investment relative to recurrent spending was also observed in countries that, while receiving numerous loans from the IMF, had not sustained reform efforts, such as Zambia. Adjusting countries such as Somalia and Zimbabwe are exceptions to the general trend of countries witnessing a decline in investment relative to recurrent spending as the need for austerity arises. This likely finds explanation in the high level of recurrent relative to investment spending that was extant prior to policy reform efforts.

Concerning the specific issue of the allocation of current expenditures between wages and other operating expenses, many African countries maintain bloated, unproductive bureaucracies and a patronage system that makes it especially difficult to reduce the number of public sector jobs. This problem is especially acute in countries where the wage bill soared when transitory increases in commodity prices (e.g., oil) contributed to windfalls to the treasury.

In the face of efforts to reduce government budget deficits in general and expenditures in particular, the extent to which wages and salaries fall will affect the achievement of macroeconomic targets as well as the population's welfare. The latter effects occur because of (a) income changes among public sector workers, which are likely to be felt most strongly by urban households, and (b) potential declines in services because of, for example, fewer teachers

and health workers on the payroll or government workers becoming demoralized if their compensation is eroded.

Measuring the distributional implications of these outcomes is extremely difficult. Among the many problems is that one should take into account the fact that public sector wages in many countries (e.g., Ghana and Somalia) fell to such a low level prior to reforms that households had already diversified their income sources. A related issue is the need to determine whether an increase in private sector employment opportunities will occur in either the formal or informal sectors because of the concurrent broader policy reforms and public expenditure restraints.

Another factor that will condition the impact of reducing wage-related spending is whether a combination of overstaffing, inefficient staffing, and/or overpaid civil servants makes it feasible to reduce the wage bill without any serious harm to the delivery of services and routine bureaucratic functions. It is also important, however, to weigh the implications for service delivery of civil servants and other public sector employees losing their jobs against budgetary reductions for nonwage expenditures that may reduce the quality and quantity of services.

In order to determine governments' willingness or ability to reduce salaries and/or public sector employment, the ratio of the wage bill to total discretionary expenditures was examined. The data in Table 8 indicate that the share of expenditures devoted to wage payments among sub-Saharan African countries has not increased since 1978-80. In fact, after an increase in the level of real wage and salary payments between 1978-80 and 1981-83, they have also remained steady in the aggregate. Of the 30 countries for which there are data from 1981-83 and 1986-87, only 14 out of 30 witnessed increases in real wage and salary payments. Given that during the same period the number of government employees was increasing, it is likely that real wages fell, a point that is confirmed later on in the monograph; but perhaps the more interesting point is that wages and salaries have increased dramatically in absolute terms and as a share of total discretionary expenditures in oil-producing and middle-income countries, as juxtaposed with non-oil and low-income countries.

In sum, changes in the mix of recurrent and capital spending once again reflect the evolution of economic crises and the nature of the resulting adjustment programs. While the aggregate data did not indicate a general pattern of increasing recurrent spending at the expense of investment during the mid-1980s, this was observed in a large number of countries, most clearly illustrated when unsustainable levels of public investment resulted in an

Table 8 – Real Wage and Salary Expenditures Expressed as Indices (1978-80=100) and as a Percent of Total Government Expenditures (net of interest payments)

Country	Index of Real Wages and Salaries					As a Percent of Net Expenditures				
	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Benin	118.4	100.0	149.1	128.9	143.1	31.1	30.9	34.3	36.1	44.2
Botswana	70.9	100.0	148.8	195.4	190.7	27.1	24.2	26.6	24.7	23.4
Burkina Faso	–	100.0	90.9	104.5	139.6	–	50.1	44.3	53.3	57.1
Cameroon	86.0	100.0	131.6	165.7	196.2	36.2	34.3	24.7	24.8	24.5
Congo	–	100.0	95.4	102.0	161.4	–	21.7	18.9	21.6	41.2
Côte d'Ivoire	–	100.0	115.0	122.4	–	–	26.9	29.9	42.3	–
Ethiopia	82.0	100.0	109.1	124.8	136.6	40.6	36.4	28.4	32.0	30.1
Gabon	74.0	100.0	90.6	99.5	120.2	–	21.9	17.4	17.0	26.0
Gambia	78.8	100.0	155.7	126.4	129.3	27.3	21.6	28.3	26.9	19.7
Ghana	86.7	100.0	57.4	75.2	123.0	22.1	34.9	31.5	31.2	42.3
Guinea-Bissau	–	100.0	103.2	90.2	74.9	–	23.8	27.5	20.5	19.0
Kenya	76.0	100.0	122.0	122.6	146.8	36.1	32.7	36.5	39.2	38.4
Lesotho	49.2	100.0	88.5	97.8	102.4	32.8	33.9	36.1	37.8	31.3
Liberia	76.5	100.0	167.8	136.3	119.4	29.5	28.4	42.7	48.1	42.0
Madagascar	–	100.0	97.6	80.6	75.1	–	28.9	35.8	36.0	33.6
Malawi	62.5	100.0	97.8	102.7	113.6	19.2	17.4	20.9	21.8	21.3
Mali	96.7	100.0	106.8	125.1	118.8	56.6	45.7	26.0	25.7	26.3
Mauritania	–	100.0	82.8	89.7	73.4	–	32.6	30.6	27.6	33.7
Mauritius	–	100.0	107.4	106.4	108.9	–	33.3	34.6	38.8	37.1
Niger	83.4	100.0	118.0	122.4	124.8	22.5	17.6	17.0	21.6	22.1
Nigeria	150.8	100.0	94.1	78.0	83.0	12.5	7.8	8.4	14.5	11.8
Rwanda	81.7	100.0	167.7	150.9	182.7	35.4	30.3	30.0	28.9	26.9
Senegal	–	100.0	103.8	111.2	104.5	–	47.4	39.4	49.4	49.7
Sierra Leone	82.8	100.0	98.2	77.6	32.5	41.4	28.5	31.5	36.8	15.4

(continued)

Table 8 (continued)

Country	Index of Real Wages and Salaries					As a Percent of Net Expenditures				
	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Swaziland	96.1	100.0	105.3	108.2	112.6	37.1	33.9	34.3	36.5	40.2
Tanzania	105.8	100.0	100.1	91.4	87.2	29.5	22.1	23.3	26.6	27.1
Togo	83.0	100.0	139.0	128.5	139.3	16.8	20.2	33.1	27.4	29.7
Uganda	–	100.0	227.8	285.7	114.6	–	10.3	13.2	17.1	10.2
Zaire	91.1	100.0	78.5	45.7	53.6	39.4	45.9	31.7	19.3	19.5
Zambia	113.0	100.0	123.8	89.0	49.0	29.7	27.8	33.6	31.8	15.1
Zimbabwe	88.8	100.0	116.0	113.4	124.5	37.9	34.0	29.9	27.0	28.9
Average	–	100.0	116.4	116.3	116.1	–	29.7	29.3	30.3	29.9
Oil exporting	–	100.0	112.2	114.8	140.8	–	23.3	20.7	22.8	29.5
Non-oil exporting	–	100.0	117.3	116.6	111.0	–	31.0	31.1	31.8	30.0
CFA	–	100.0	113.9	120.9	138.7	–	32.2	28.3	30.8	35.6
Non-CFA	–	100.0	117.6	114.3	106.0	–	28.6	29.7	30.1	27.3
West	–	100.0	108.2	104.8	107.2	–	30.1	29.3	30.9	30.9
South	–	100.0	116.5	120.7	115.8	–	30.7	32.1	31.6	27.8
East	–	100.0	145.3	152.2	120.9	–	26.0	28.8	32.6	29.6
Central	–	100.0	112.8	112.8	142.8	–	30.8	24.5	22.3	27.6
Islands	–	100.0	102.5	93.5	92.0	–	31.1	35.2	37.4	35.3
Middle income	–	100.0	112.0	122.9	140.7	–	25.3	22.9	24.0	27.6
Low income	–	100.0	117.9	114.2	108.3	–	31.1	31.3	32.3	30.6

Source: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: Group means exclude Côte d'Ivoire.

overheated economy (e.g., Côte d'Ivoire). Conversely, in countries with initially high recurrent expenditures relative to capital expenditure (e.g., Zimbabwe, Senegal), one expected and found expenditure restraint to result in a decline in the ratio even during a period of policy reform. While the wage bill represented an especially important economic and political component of the budget, indication of demand management policies lowering the wage bill as a share of expenditures was limited to a few countries. But, once again, conditions prior to adjustment determined the level and the feasibility of reducing the public sector wage bill, the possible implication of a lower wage bill on the delivery of services, and the direct loss of jobs and income.

SECTORAL COMPOSITION OF EXPENDITURES

The allocation of government expenditures among sectors will have an impact on the welfare of low-income households. Whether to spend money in human resource development or other alternatives, such as defense and infrastructure, will have both important short- and long-term implications for living standards and income distribution. Allocative decisions become more important and more difficult in periods of cutbacks in spending.

It would be an oversimplification to suggest that social sector expenditures especially in the areas of health, education, transfer payments, and related consumer subsidies are more beneficial to the poor than outlays in other sectors. First, the most vulnerable households may have only limited access to social services. Second, the private sector may already be providing services in certain sectors or may respond accordingly to cuts in public spending. If their activities are more efficient than the government's, they may more than compensate for reductions in government expenditures. Third, government expenditures on marketing infrastructure and investments in agricultural research, for example, may have high returns for small farmers and poor urban consumers alike. However, the payoffs on these returns may be less direct and immediate than, for example, expenditures on health services and food subsidies.

The experiences in adjustment programs outside SSA have raised concern that expenditures on human resources are especially vulnerable to cuts during periods of public expenditure restraint. Pinstrup-Andersen (1989) notes that between 1976 and 1983 health care expenditures in developing countries dropped from 4.3 to 4.1 percent of total government expenditures. This decline was more severe in Latin America than Asia, and data were not reported from Africa. Helleiner (1985) argues that reductions in public expenditures in Latin America disproportionately fell on social sector spend-

ing, which was directly related to the decline in the welfare of the poor. Likewise, Musgrove (1987) reported that a "virtual regionwide reduction, often of drastic proportions," in government outlays took place in the health sector in Latin America. Similar reductions in social expenditures during a period of macro-policy changes in Asia have been noted (Sahn, 1987a; Pinstrup-Andersen, Jaramillo, and Stewart, 1987).

Recent experiences with the sectoral composition of recurrent and capital expenditures in Africa have been quite mixed. Meyers (1986) measured relative sectoral cutbacks during periods of fiscal contraction. Results indicated that the percentage cutback in the social sector exceeded average expenditure cuts in only 21 percent of the African countries examined. In contrast, during periods of budgetary contraction, sectoral reductions in transportation and communications exceeded average cutbacks 70 percent of the time. This generally supported the findings of Hicks and Kubisch (1984) that social sectors were not especially vulnerable to recurrent expenditure reductions.

While these studies provide some insights into the budgetary process, the data by and large predate the receipt of structural adjustment loans and the adoption of economic reform policies. Therefore, two related points are analyzed: (1) recent changes in the sectoral allocation of expenditures and (2) the relationship between the share of government expenditures allocated to the social sector and the level of total expenditures and GDP.

Initially data were examined on health and education expenditures in SSA as a share of total expenditures, net of interest payments.[15] Overall, the sectoral allocation appeared to be quite stable from 1978 to 1986 among those countries for which there was a complete data series (Figure 9). In examining the data by country and country grouping for five time periods, few dramatic patterns emerged (Table 9). One exception was the period 1986-87, which marked a noteworthy decline in the share of health and education expenditures for oil producers.

In terms of individual countries 6 of the 27 countries saw lower health and education expenditures as a share of the total discretionary expenditures in 1984-85 than in 1978-80; 11 of the 27 witnessed a decline in the share of

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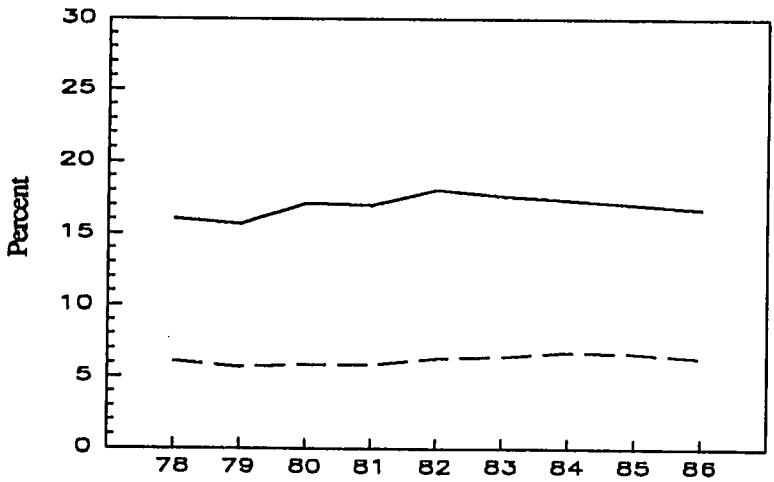
15 Levels of expenditures reported here would not capture changes in revenue collected, for example, from user charges or school fees. It is possible, therefore, that the total health or education expenditures increase, while the net subsidy does not because increasingly these expenditures are financed by user fees.

Figure 9 – Expenditures on Education and Health as a Percent of Total Government Expenditures (net of interest payments)



——— Education

— — Health

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: The countries represented in this figure are limited to those for which there was an observation for each of the years 1977 to 1986. These include Botswana, Burkina Faso, Cameroon, Ethiopia, Gambia, Ghana, Kenya, Liberia, Malawi, Mauritius, Niger, Rwanda, Sierra Leone, Swaziland, Togo, Zaire, Zambia, and Zimbabwe.

Table 9 – Expenditures on Health and Education as a Percent of Total Government Expenditures (net of interest payments)

	Health					Education				
Country	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Botswana	6.4	6.2	5.6	5.1	6.5	19.0	22.0	19.9	18.2	19.5
Burkina Faso	6.4	5.7	6.6	6.4	6.4	16.9	17.2	17.6	18.8	20.3
Cameroon	4.9	4.8	3.4	5.0	3.6	16.5	13.6	10.5	13.4	12.7
Côte d'Ivoire	–	4.3	3.8	5.5	–	–	17.6	22.9	28.2	–
Ethiopia	4.9	3.9	3.7	3.8	3.6	13.7	9.7	10.3	11.8	11.1
Gambia	8.7	7.0	8.1	6.9	–	11.0	9.5	17.1	11.9	–
Ghana	7.8	7.7	7.7	10.4	9.8	20.3	20.2	22.1	21.6	28.3
Kenya	8.0	8.0	8.5	7.8	7.4	22.2	20.0	22.9	23.3	25.7
Lesotho	5.4	3.7	6.6	6.7	–	21.0	11.3	16.6	15.1	–
Liberia	8.5	6.9	8.1	7.4	6.6	14.2	13.9	17.2	19.7	16.4
Madagascar	–	4.6	4.4	6.0	6.3	–	13.3	17.3	19.1	18.3
Malawi	7.5	5.8	6.7	9.0	7.7	12.0	11.5	15.0	14.2	13.0
Mali	6.6	4.6	3.4	1.8	–	23.4	19.8	11.3	9.6	–
Mauritius	8.6	8.7	8.9	10.3	9.8	13.5	19.4	18.6	19.0	16.8
Niger	4.9	4.5	3.5	4.4	4.2	17.0	17.8	13.7	14.8	13.0
Nigeria	2.0	1.8	2.6	2.6	2.5	14.7	5.4	8.6	11.2	5.5
Rwanda	5.5	5.3	3.3	3.4	3.6	17.9	18.9	18.3	17.1	16.7
Senegal	6.1	5.0	4.7	4.0	4.0	19.4	24.6	20.2	19.7	20.0
Sierra Leone	7.1	4.3	7.2	7.4	3.8	19.0	11.1	16.3	17.7	8.0
Somalia	4.9	3.2	–	1.3	–	11.4	8.2	–	3.4	–
Swaziland	–	5.3	6.9	7.5	9.0	–	17.5	20.6	22.4	23.7
Tanzania	7.4	6.6	6.0	6.2	–	14.0	14.1	14.1	11.1	–

(continued)

Table 9 (continued)

Country	Health					Education				
	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Togo	4.8	5.5	6.4	5.3	4.3	8.9	13.2	22.4	15.5	15.1
Uganda	–	5.3	4.9	3.4	3.5	–	15.4	12.7	14.0	14.0
Zaire	3.8	3.5	3.4	5.2	5.3	14.5	20.3	14.0	3.5	2.4
Zambia	7.6	7.6	7.7	8.3	7.1	18.6	15.6	18.0	13.2	–
Zimbabwe	6.8	6.1	7.2	7.0	7.2	14.9	14.3	23.2	23.2	–
Average	–	3.5	5.8	6.2	5.8	–	15.9	17.0	17.0	16.1
Oil exporting	–	3.3	3.0	3.8	3.1	–	9.5	9.5	12.3	9.1
Non-oil exporting	–	5.8	6.1	6.4	6.1	–	16.6	17.8	17.4	16.8
CFA	–	5.1	4.9	5.0	4.5	–	17.3	16.9	16.4	16.2
Non-CFA	–	5.7	6.0	6.5	6.2	–	15.5	17.0	17.1	16.0
West	–	4.9	5.5	5.8	5.0	–	15.6	17.3	17.0	15.7
South	–	6.2	6.8	7.4	7.5	–	16.2	18.8	19.2	18.6
East	–	6.0	6.3	5.6	5.3	–	14.7	15.8	17.2	16.8
Central	–	4.5	3.4	4.5	4.2	–	17.6	14.3	11.3	10.6
Islands	–	6.6	6.6	8.1	8.0	–	16.3	18.0	19.1	17.6
Middle income	–	5.5	5.5	6.0	5.9	–	14.9	16.1	17.0	15.6
Low income	–	5.6	5.8	6.2	5.8	–	16.3	17.2	16.9	16.2

Source: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: Group averages exclude Côte d'Ivoire, Gambia, Lesotho, Mali, Somalia, and Tanzania to ensure comparability across time periods.

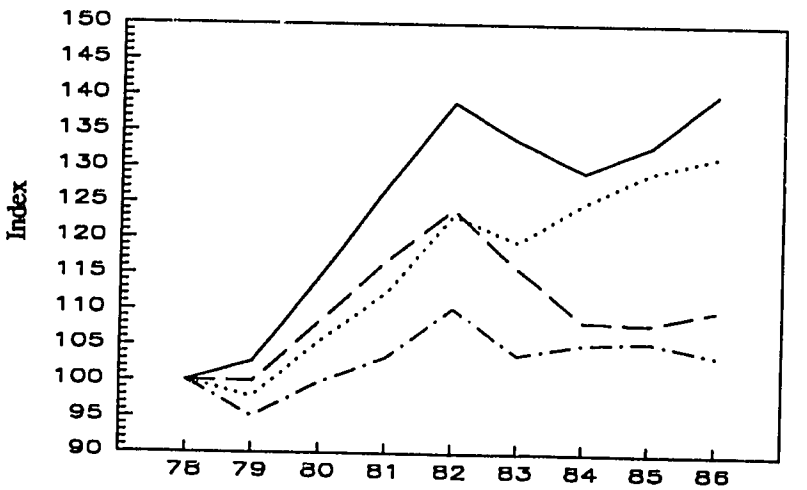
discretionary expenditures allocated to education between those two periods. The other countries saw shares increase or had negligible changes. Between 1984-85 and 1986-87 few countries experienced dramatic shifts. Exceptions included Sierra Leone, where spending on both health and education as a share of total expenditures plummeted in 1986-87 after rising precipitously in the first half of the decade; Cameroon, which experienced a marked decline in health shares; and Nigeria, where education shares dropped. The latter two cases were probably a reflection of the need for restraint as oil prices fell. A large increase in the share of total discretionary government expenditures allocated to health was also noted in Botswana, one of the better economic performers in SSA.

The changes in real levels of health and education expenditures were next examined. They illustrate well the impact of exogenous events on government spending. Education expenditures increased precipitously from 1979 to 1982 and were followed by a slight contraction until 1984, which marked the end of the drought and the global recession that badly hurt SSA. Education expenditures recovered sharply between 1984 and 1986 (Figure 10). Health expenditures also declined in real terms from 1982 to 1983 and thereafter increased markedly through 1986. In contrast, following the decline in per capita figures for education between 1982 and 1984 and health spending between 1982 and 1983, central government spending has barely kept pace with population growth. This problem focuses attention on the need for controlling fertility.

Education expenditures from 1978-1985 increased much more rapidly for oil producers than for non-oil exporters. The case was the same for health. The fall in health expenditures among oil exporters as oil prices fell in 1986-87 was primarily attributable to the situation in Cameroon. Among low-income countries health expenditures barely increased between 1978-80 and 1986-87 (see Table 10). In contrast, real spending on health increased steadily during the 1980s in middle-income countries. By 1986-87 levels were more than 57 percent higher than in 1978-80. The same was true for education expenditures, which jumped dramatically between 1978-80 and 1981-83. Among low-income countries, spending on education showed no sustained growth in real terms during the 1980s.

Regionally one also witnessed some dramatic differences (see Table 10). In particular, the decline in health and education expenditures in west and east Africa during the 1980s contrasts with the marked increases in south and central Africa.

Figure 10 – Real Expenditures on Education and Health Expressed as Indices (1978=100)



——— Education Total
— — Education per Capita
..... Health Total
—·— Health per Capita

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: The countries represented in this figure are limited to those for which there was an observation for each of the years 1977 to 1986. These include Botswana, Burkina Faso, Cameroon, Ethiopia, Ghana, Kenya, Liberia, Malawi, Mauritius, Niger, Rwanda, Sierra Leone, Swaziland, Togo, Zaire, Zambia, and Zimbabwe.

Table 10 – Real Health and Education Sector Expenditures Expressed as Indices (1978-80=100)

Country	Health					Education				
	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Botswana	65.5	100.0	123.9	157.4	208.1	54.6	100.0	121.9	158.3	175.0
Burkina Faso	87.2	100.0	126.9	117.5	146.4	76.5	100.0	111.7	115.5	155.5
Cameroon	84.8	100.0	132.0	238.3	206.9	100.8	100.0	145.9	227.1	258.4
Côte d'Ivoire	–	100.0	92.8	94.2	–	–	100.0	134.5	117.4	–
Ethiopia	92.9	100.0	135.7	139.3	157.0	103.6	100.0	151.8	171.8	189.5
Gambia	78.5	100.0	136.9	99.1	–	72.8	100.0	214.4	127.5	–
Ghana	141.3	100.0	64.0	116.9	132.4	143.5	100.0	71.3	92.2	148.4
Kenya	68.5	100.0	113.3	99.0	115.2	76.3	100.0	125.3	119.2	160.6
Lesotho	75.2	100.0	146.4	157.9	–	92.1	100.0	121.3	117.5	–
Liberia	81.4	100.0	129.6	85.8	76.5	70.1	100.0	138.4	114.3	96.0
Madagascar	–	100.0	73.0	84.1	89.5	–	100.0	101.6	93.6	89.4
Malawi	72.7	100.0	93.5	125.6	122.2	59.9	100.0	107.3	101.3	105.2
Mali	110.8	100.0	132.5	86.3	–	90.7	100.0	105.1	105.7	–
Mauritius	76.3	100.0	105.8	108.3	110.2	54.4	100.0	99.3	89.3	84.1
Niger	71.1	100.0	94.4	97.7	93.6	61.8	100.0	92.6	82.7	71.8
Nigeria	116.6	100.0	139.5	68.6	88.2	304.5	100.0	191.1	119.5	182.3
Rwanda	74.0	100.0	108.8	102.4	143.2	65.7	100.0	163.6	142.2	181.0
Senegal	94.1	100.0	117.2	86.3	78.9	61.1	100.0	102.3	85.4	81.2
Sierra Leone	93.5	100.0	149.0	103.3	52.4	100.0	100.0	131.7	96.5	44.4
Somalia	117.8	100.0	69.9	28.6	–	106.7	100.0	66.0	30.0	–
Swaziland	–	100.0	136.8	144.9	163.6	–	100.0	125.4	131.8	131.5
Tanzania	94.2	100.0	84.3	70.1	–	83.6	100.0	93.5	60.0	–
Togo	85.2	100.0	97.1	88.2	82.2	67.0	100.0	141.7	109.5	120.7
Uganda	161.8	100.0	87.2	63.0	42.8	132.6	100.0	99.6	111.8	73.0
Zaire	132.8	100.0	108.9	161.0	170.6	86.3	100.0	83.7	18.6	12.9

(continued)

Table 10 (continued)

Country	Health					Education				
	1975-77	1978-80	1981-83	1984-85	1986-87	1975-77	1978-80	1981-83	1984-85	1986-87
Zambia	104.1	100.0	104.1	84.7	86.6	124.8	100.0	99.2	89.1	79.0
Zimbabwe	88.2	100.0	156.3	162.8	172.1	81.6	100.0	213.4	228.4	236.2
Average	–	100.0	114.1	115.9	120.9	–	100.0	124.7	118.9	122.5
Oil exporters	–	100.0	135.7	153.4	147.6	–	100.0	168.5	173.3	168.4
Non-oil exporters	–	100.0	111.8	112.0	118.1	–	100.0	120.1	113.2	117.6
CFA	–	100.0	113.5	125.6	121.6	–	100.0	118.8	124.0	137.5
Non-CFA	–	100.0	114.3	112.9	120.1	–	100.0	126.5	117.4	117.7
West	–	100.0	112.6	96.9	96.3	–	100.0	120.3	100.1	100.0
South	–	100.0	122.8	135.1	150.5	–	100.0	133.4	141.8	145.4
East	–	100.0	116.5	96.8	97.9	–	100.0	128.8	129.3	129.8
Central	–	100.0	116.5	167.2	173.6	–	100.0	131.1	129.3	150.8
Islands	–	100.0	89.4	96.2	99.8	–	100.0	100.4	91.4	86.7
Middle Income	–	100.0	131.4	147.1	157.1	–	100.0	154.3	164.5	166.4
Low Income	–	100.0	108.7	106.2	109.6	–	100.0	115.4	104.7	108.7

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Note: Group averages exclude Cote d'Ivoire, Gambia, Lesotho, Madagascar, Mali, Somalia, Swaziland, and Tanzania to ensure comparability across time periods.

Considerable variation among countries was found although 12 and 11 of 21 countries had higher real health and education expenditures, respectively, in 1986-87 than 1978-80 (see Table 10). Noteworthy for their dramatic increases were countries with generally sound economic performances, such as Botswana and Cameroon, as well as other countries whose GDP growth performance was not nearly as impressive, such as Rwanda and Zimbabwe. The data suggest, however, that many countries with adjustment programs witnessed stagnating or falling health and education expenditures.

In 9 of the 17 countries from which data were available health expenditures as a percentage of total discretionary expenditures (i.e., total expenditures minus interest) declined in the three years following adjustment loans from the World Bank while spending on education as a share of discretionary total expenditures fell in 8 of the 17 countries (Tables 11 and 12).[16] The actual level of real health and education expenditures fell in 9 of the 17 countries in the three years following the first adjustment loan.

Once again, however, significant variations occurred among countries (see Table 9). For example, in Ghana, spending on education as a share of GDP increased dramatically after the beginning of the economic recovery program, which commenced following a long period of decline in government expenditures. In Sierra Leone, however, a general decline in the share and level of government spending allocated to health and education is noted after the beginning of adjustment, although this falling off must be placed in the context of the precipitous increase in spending that occurred in the early 1980s. In contrast, the falling level of spending that followed adjustment in Tanzania was a continuation of a trend that began during the economic stagnation that preceded the economic recovery program. Mixed evidence was found in Malawi as spending on education as a share of GDP declined quite steadily during the early years of the adjustment process and then rose somewhat in 1987, resulting in the 1986-87 levels being roughly commensurate with those observed earlier in the decade. During the same period the share of spending allocated to health was generally higher than during the years before adjustment.

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16 When the same calculations were done based on total expenditures including interest, the results are slightly different, indicating that 11 and 9 of the countries witnessed a decline in budget shares for health and education, respectively. Also, it is noteworthy that it was not the same countries in which health expenditures and education expenditures fell.

Table 11 – Health Expenditures Before/after Adjustment

Country	Health Expenditure as Percent of Total Government Expenditure (net of interest payments)		Real Health Expenditure Expressed as Indices 1980=100	
	Before Adjustment	After Adjustment	Before Adjustment	After Adjustment
Burkina Faso	6.6	6.4	104.5	129.0
Côte d'Ivoire	3.9	4.4	96.6	93.2
Ghana	7.7	10.2	76.8	146.5
Kenya	8.0	8.3	91.4	103.3
Madagascar	5.8	6.3	82.4	89.5
Malawi	5.8	6.7	85.2	79.7
Mauritius	8.5	9.7	103.2	113.2
Niger	4.3	4.4	84.3	88.3
Nigeria	2.6	2.7	123.1	74.1
Senegal	5.0	4.7	100.0	117.2
Sierra Leone	7.5	4.7	107.5	32.3
Sudan	1.5	1.4	100.0	102.8
Tanzania	6.3	5.8	101.5	91.5
Togo	6.4	4.9	98.3	87.3
Uganda	4.9	3.2	158.2	96.5
Zambia	8.3	7.5	101.5	84.6
Zimbabwe	7.2	7.0	147.8	154.7

Table 12 – Education Expenditures Before/after Adjustment

Country	Education Expenditure as Percent of Total Government Expenditure (net of interest payments)		Real Education Expenditure Expressed as Indices 1980=100	
	Before	After	Before	After
Burkina Faso	19.4	20.3	115.2	154.6
Côte d'Ivoire	19.4	25.2	116.0	129.6
Ghana	22.1	23.8	69.7	108.5
Kenya	20.0	22.9	91.1	114.1
Madagascar	19.6	18.3	95.9	89.4
Malawi	11.5	15.0	102.8	110.3
Mauritius	19.2	19.4	99.5	94.4
Niger	14.3	12.7	63.1	58.2
Nigeria	8.6	9.6	140.0	83.3
Senegal	24.6	20.2	100.0	102.3
Sierra Leone	17.2	11.1	115.4	57.8
Sudan	10.4	15.0	100.0	76.4
Tanzania	13.9	13.6	99.9	91.5
Togo	22.4	15.3	124.5	99.5
Uganda	12.7	15.0	144.0	151.1
Zambia	17.1	14.6	109.5	87.8
Zimbabwe	23.2	23.6	167.4	180.4

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Notes: Before adjustment is defined as the year in which the first adjustment loan was signed, and the two years previous. After adjustment is defined as the three years after the first adjustment loan was signed. If data were only available for one or two years after adjustment, their average value was used instead.

Changes in health and education expenditures in relationship to changes in total expenditures and GDP were next examined in order to formulate reasonable expectations of how growth in total discretionary government expenditures and aggregate economic performance will affect social sector expenditures.

In order to explore such relationships utilizing all available data from individual countries, simple country fixed effects models were employed. The models were similar to the equations discussed above and are found in Appendix Table 6. The results are summarized in Table 13 in the form of elasticities. The elasticities for education and health expenditures with respect to GDP are slightly above unity, while the elasticities with respect to total expenditures are generally slightly below, although they differ noticeably across time periods. So, for example, the results indicate that a 10.0 percent increase in total expenditures gave rise to a 8.1 percent increase of spending for education, and a 6.7 percent increase for health during 1974-79. At the same time the higher elasticities with respect to GDP reflect the finding reported earlier that an increase in GDP leads to a more than proportionate rise in total expenditures.

The coefficients for the interaction terms that were significant at the 10 percent level were employed in calculating elasticities for the 1980s. The results indicate that the elasticities of spending on health and education with respect to total expenditures were markedly higher in 1985-87, jumping to 0.96 and 1.08, respectively. This indicated that health and education spending received a higher priority from 1985 to 1987 than in the years 1974-84.

The data also indicated that increases in aggregate economic growth have led to a more than proportional increase in government spending on health

Table 13 – Elasticities of Health and Education Expenditures with Respect to Total Expenditures (net of interest payments) and GDP

Item	1974-79	1980-84	1985-87
Elasticity of health expenditures with respect to:			
Total net expenditures	0.67	0.67	0.96
GDP	1.17	1.06	1.17
Elasticity of education expenditures with respect to:			
Total net expenditure	0.81	0.81	1.08
GDP	1.43	1.43	1.08

and education, although the percentage increases in spending on the latter relative to a percentage growth of GDP was slightly less in the period 1985-87. Another implication of these elasticities having values greater than unity is that countries with higher GDP can be expected to spend a relatively higher share of that GDP on health and education, and similarly, as expenditures increase, the percentage change in health and education is expected to be proportionate with spending in other areas.

INTRASECTORAL ALLOCATIONS

Before drawing any conclusions on the welfare implications of changes in the level of social expenditures one must consider the issue of the intrasectoral distribution of services. In the education sector the concern is the competition between primary and higher schooling. In the case of health and related services the most important distinction is between primary health care and more expensive hospital-based curative medicine.

The evidence from sub-Saharan Africa and most developing areas is that secondary education and hospital-based health care received considerably higher levels of subsidies than primary education and primary health care. For example, a recent study (World Bank, 1987b) of 32 SSA countries indicated that primary education received an average of only 43.7 percent of the recurrent expenditures allocated to education in 1983. In only 7 of these countries did the share exceed 50 percent. The study similarly concluded that the cost of primary school per enrolled student was approximately 15 percent of GNP per capita while the cost of sending a student to a university was 800 percent of GNP per capita, some 50 times higher per pupil. No such comprehensive comparative study of the intrasectoral allocation of health expenditures has been performed. Nonetheless, the existing evidence suggests that despite the costs of saving lives using expensive curative services being far in excess of community-based public health services, most countries allocate a majority of their health budgets to hospitals and nonessential drugs, rather than to more basic and cost-effective health services that are required by the poor. For example, in Malawi only 6.8 percent of the total health spending was allocated to preventative services in 1987/88 (World Bank, 1988c);[17] while in Madagascar only 27.1 percent

[17] The fact that some of the other health expenditures, such as immunization programs operated by hospitals, are not included as preventative care implies that this is a low estimate of preventative health expenditures.

of the 1987 health budget was for primary health care and endemic disease control (World Bank, 1987d).

It is in this context that one must consider to what extent reductions and stagnation in social expenditures will directly harm the poor; but more important is the issue of whether policy reform can in fact correct the inequities in the allocation of government social expenditures.

To date the evidence on shifts in the intrasectoral allocation of spending is sparse. However, some tentative figures suggest no major departures in recent years from existing patterns. For example, the adjustment process in Zambia failed to increase the orientation of social expenditures to primary service delivery (World Bank, 1987a). The health and education sectors in Côte d'Ivoire also showed no significant steps toward reform, and spending remains skewed toward tertiary services (World Bank, 1987g).

Malawi spent 34.4 percent of its education budget on higher education between 1984-86, compared with only 24.1 percent during the 1981-83 period. Spending on preventative health services has meanwhile remained small in comparison to curative services with large fluctuations especially in the development budget. No trends were discernable, however, since policy reform began. In Zimbabwe the rate of growth of expenditures as a share of GDP was slower for primary education than for secondary education between 1981-83 and 1984-86. This occurred despite the educational expenditure growth in absolute and relative terms and the budget for primary education being more than double that for secondary education (IMF, 1987).

In Senegal, where the adjustment program included educational reforms, secondary education still gets a disproportionate share of the education budget (World Bank, 1986e). In Mali, a country with no formal adjustment program, little change occurred in intrasectoral spending, and considerable scope still remains to reorient social spending toward primary services (World Bank, 1986c). In Somalia (World Bank, 1987i) and Tanzania (IMF, 1987) primary education's share of expenditures has actually declined in recent years while that of tertiary education has increased.

In contrast, there is some evidence that the World Bank adjustment credit to the education sector in Ghana affected both efficiency and equity in that sector (World Bank, 1987h). A combination of measures was installed such as reducing the number of secondary school years and allocating a greater share of outlays to primary schools, especially in rural areas. In a similar vein the government of Niger increased the share of recurrent expenditures in the education sector allocated to primary education from 33 percent in 1981 to 40 percent in 1986. Nevertheless, education's share remains small,

and primary schooling opportunities are inadequate. This recently prompted the government to undertake a sector adjustment project to address the inequities and inefficiencies in the educational system to support their structural adjustment policies (World Bank, 1986d). In Cameroon, a country without an externally financed adjustment program, the share of education expenditures for tertiary education declined in 1984 and 1985 after rising between 1978 and 1983 (IMF, 1987), and in Madagascar, primary and secondary education received some 94 percent of the total education budget in 1983, up from 74 percent in 1977, while spending on primary schooling alone rose from 43 to 58 percent (World Bank, 1987d).

This limited review of country experiences shows no clear patterns of change in the intrasectoral distribution of expenditures or their relationship to macroeconomic adjustment. Although this is expected, given that restructuring efforts are in their early stages, the data reinforce three points. First is that intrasectoral composition is at least as important—and probably more so—than the overall level of expenditures in the social sector. Second, low-income households have been poorly served by government services, which implies that the magnitude of negative effects resulting from reforms is likely to be less than otherwise expected. Third, the competition for public resources will likely increase in the years ahead. On the one hand the more politically powerful, served by urban hospitals and free secondary schools, may use their influence to maintain these expenditures. On the other a combination of pressure from donors and a sense of social justice may result in greater emphasis on maintaining or increasing primary expenditures at the expense of tertiary services. Paradoxically, in an era of increased scrutiny of the uses of public sector resources, opportunity may exist to reorient expenditures to those in greatest need.

MOBILIZING REVENUE

Service charges and taxation are the two most important options available to governments to raise revenues. They present an alternative to borrowing or deficit financing to maintain social expenditures and other government outlays that directly or indirectly benefit the poor. Reforms in this area are a key element in the budget process and must be viewed as a complement to efforts to improve the efficacy of public spending.

Key elements of sound revenue-enhancing measures include the following: (1) they must do as little as possible to distort the economy as measured through taxation's marginal impact on investment and savings as well as consumption behavior; (2) collection of taxes must not be administratively cumbersome; (3) at the margin the cost of taxation must not exceed benefits

derived from the additional revenue; and (4) they must be levied according to ability to pay and not be burdensome to the poor. These considerations need to be addressed in designing policies to raise revenues and reduce deficits.

Concerning the last point, in general distributional objectives should not be pursued on the revenue rather than on the expenditure side of fiscal policy. At the same time if tax policies result in serious economic distortions and disincentives, they will undoubtedly have a long-term negative impact on low-income households and everyone else. Little empirical evidence is available concerning the distributional impacts of increasing government revenues in Africa through direct or indirect taxation and user charges. Certain generalizations may indeed be applicable. For example, higher direct taxes will primarily be a burden on wage and salary workers in the urban areas as well as corporate enterprises in the modern sector; reductions in indirect taxes will likely have their most immediate positive effect on the incomes of producers and consumers of tradable crops; and those working in the informal sector or as marginal workers will be least affected by changes in direct and indirect taxation.

Impact of Changes on Taxation

There are five principle categories of taxation: (1) personal income taxes, (2) corporate profits taxes, (3) social security or other payroll taxes, (4) commodity taxes, including sales and excise taxes and custom duties, and (5) property taxes. Catsambas (1990) suggests that, although rationalizing the personal and corporate tax structure is often included in policy reforms, excises and import and export duties generally provide the focal point of adjustment programs. Property taxes and social security taxes get little (if any) attention. This is partially a reflection of their importance in the tax structure of SSA.

In practice determining the impact of changes in the tax structure on various groups is likely to be difficult because researchers must go beyond an examination of the statutory incidence of taxation. For example, although direct taxation of corporate profits may be relatively easy to measure, the indirect burdens of taxation will also fall on households in their capacity as shareholders, workers for the corporation, or consumers of the good produced by the corporation.

Similarly, commodity taxes on both domestic production and international trade have long been recognized to have distortionary effects, often reducing producer incentives and lowering rural incomes. However, because

of the relative ease with which they are collected these taxes are usually the main source of revenue in sub-Saharan Africa.

Some broad-based taxes on domestic production, such as the value added tax (VAT), have been commended because they can be passed on to consumers and, hence, do not result in substantial economic distortions. Moreover, it is often possible to collect them. However, VATs can be difficult to apply to the agricultural sector and to small-scale enterprises. As with consumption taxes they can be regressive.

Other types of commodity taxes, such as those on imports and exports, are even easier to collect but in most cases result in inefficiencies due to the manner of their application. For example, import tariffs are often used. In addition to protecting domestic producers, they foster economic inefficiencies by creating price distortions. Sometimes governments raise revenue by licensing the import of specific goods. These types of quantitative restrictions can exert especially distortionary effects because the licensed importer often receives large rents. Generally these should be replaced with tariffs.

Another purpose of import taxes is to meet distributional objectives such as the taxation of luxury goods. This practice finds considerable social and economic justification although, once again, alternatives such as a domestic luxury tax should be explored. Changes in taxation of imports such as food and fuel must be considered in terms of their impact on the poor. Protectionist measures yield clear tradeoffs: potentially higher earnings for producers versus reduced competitiveness and real income losses to consumers.

To analyze these tradeoffs an array of information is required. For example, from the consumer's perspective the maximum direct real income loss from an import tax on a traded good will be the product of the percentage price increase in the commodity multiplied by the share of the household budget expended on that commodity. However, the magnitude of cross-price elasticities of demand indicates the extent to which consumers can and will substitute other similar goods, which are unaffected by the price rise, thereby mitigating the economic consequences of the tax.

A recent examination of the effect of tariff adjustments on the purchase of imported grains in Somalia provides an example of the difficulties in assessing the impact of such measures on food security. The consumption bundle of the rural poor and, to a lesser extent, the urban poor contained only a small share of imported cereals. Consequently these groups would not directly experience large real income losses if tariffs were raised (Sahn and Alderman, 1987). The indirect effect on the price of nontraded food crops

(including maize and sorghum at the prevailing effective exchange rate) as mediated through increased demand caused by substitution away from higher-priced imports was not, however, taken into account. If there was a sizable increase in demand for home goods and their price flexibility was high, large real income losses may have occurred.

On the producer side a variety of factors conditions the consequences of a reduction (or escalation) of import controls on low-income groups. First, the price of imported inputs relative to import substitute outputs is affected by changes in tariffs. Second, the factor intensity of protected sectors and, more specifically, whether or not the poor are employed in such sectors, will condition distributional outcomes. A variety of other factors, such as the value added represented by the protected sector and whether or not it is operating at full capacity, will determine the impact of changes in tariffs both on the economy as a whole and on the poor in particular.

Export taxes, although usually a smaller source of revenue than import taxes, have perhaps received the most attention among those concerned with agriculture and poverty alleviation because of their widespread application in the agricultural sector. Export taxes discourage exports, and this fact has brought these taxes to the foreground of the policy dialogue in adjusting countries with balance of payments crises. Often these taxes are implicit, imposed through the activities of monopsonistic parastatals. However, if the taxation implied in the prices offered by parastatals results in lower output, direct taxation of earnings in an environment of better incentives could yield more revenue.

There is little question, for example, that the extremely high implicit tax rate on cocoa in Ghana in the early 1980s not only contributed to the stagnation of exports but reduced the incomes of the producing farmers as well. Consequently, the potential economic value of foregone income taxes (if these taxes could be collected) may have exceeded the value of the export tax; and this does not even take into account reductions in the living standard of smallholder producers.

Recent reforms in Ghana have considerably increased incentives to producers with positive effects on total farm income.[18] Although a reduction in the distorting tax rate was appropriate, careful analysis is required to determine the consequences on government revenues and the budget deficit. This is especially important given the evidence from neighboring Côte d'Ivoire, which showed that reducing taxation in the coffee and cocoa sector was distributionally neutral (Sahn, forthcoming).

In sum, countries face two important considerations when trying to either limit or relieve the tax burden on the poor. First is the question of whether other sources of revenue can be found to replace the indirect taxation of the agricultural sector where the poor are generally heavily concentrated. Second, a better understanding of short- and long-term supply elasticities is required to estimate the expected output response of reduced taxation and to balance it against the opportunity costs of lost revenues.

User Charges

In many instances the application of user charges will distributionally favor the poor in that generally the users of government services are not the poor. As discussed above, much of the health care and education budgets in African countries are spent in urban areas and often not on the most vulnerable groups. In Mali, for example, 6 percent of the population in Bamako use 65 percent of the government-financed health expenditures (World Bank, 1986c). Likewise, the upper class is frequently the primary beneficiary of subsidies to secondary education. In Senegal 4.5 percent of those completing upper secondary school or attending university absorb 51.0 percent of the public resources for education (World Bank, 1986d), a situation that is similarly skewed in Côte d'Ivoire.

Although administrations must provide vital services to poor women and children (such as health care), the biases in most social sector spending are such that cost recovery, especially for tertiary services, will likely be justified on fiscal and distributional grounds. For example, user fees for higher

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18 Another important element in raising value added and incomes in the agricultural sector in Ghana and thus foreign exchange earnings was the forced return of Ghanaians from Nigeria that occurred in 1983. The rural population increased by approximately 20 percent throughout the year, which resulted in both a marked growth in effective demand for food and nonfood goods and increased availability of labor, which, in combination, contributed to the observed supply response (Tabatabai, 1986).

education in Ghana and Niger could allow funds to be allocated to primary education for the poor.

The effect of user fees depends on households' reaction to price changes. Some studies show that demand for health care is price inelastic (de Ferranti, 1986). If so, income losses resulting from the increased price of health care may be significant despite a negligible fall in use. For the poor any further decline in purchasing power may have serious negative consequences for household food security. In contrast, others have reported rather large price elasticities for health services (Dor and van der Gaag, 1981; Gertler and van der Gaag, 1988). In this case cost recovery may be a serious deterrent to the use of vital health services. In either scenario it is imperative that fees be kept low for the poor. In the domain of primary education keeping fees to a minimum will help to limit the disincentives to attending school, such as the time lost from working on the farm or at some other market activity.

In sum, despite the lack of experience in sub-Saharan Africa cost recovery can still entail a progressive form of revenue enhancement. User fees may even expand the availability and quality of services delivered to the poor while facilitating the reform of distorted and inefficient patterns of government spending. Even at the highest levels quality of service may improve. For example, students at universities will be less likely to confront laboratories without equipment, and hospital patients will be less likely to be injected with a used syringe.

In addition, local revenues will facilitate increased community control over expenditures and encourage decentralized decisionmaking, an approach long advocated by community development specialists. It can also promote differential pricing and fee structures that reflect the actual cost of the service. As a result central government officials will not have to make impossible decisions on the rational allocation of revenue to different regions and services with which they are not familiar.

Such measures, however, must be implemented with care and selectivity in order to protect those groups, especially women and children, at greatest nutritional and health risk. In addition, the application of user charges is generally inappropriate for some preventive public health measures. This is especially true for services with considerable externalities such as immunizations against communicable diseases and research on the control of AIDS.

3. EXPENDITURE SWITCHING POLICIES AND CONSUMER PRICE MOVEMENTS

Expenditure-switching policies that involve changing relative prices of home goods versus tradable goods are a key component of adjustment programs designed to increase the efficiency of productive resources. A variety of policies discussed in the previous section, including those governing import taxes and export subsidies, price administration, and revenue mobilization, contribute to relative price movements and are thus, by definition, expenditure switching.[19] These policies, coupled with depreciation of the local currency—which is the centerpiece of many reform programs—are designed to alter the real exchange rate (RER), defined as a trade-weighted value of the domestic currency relative to foreign currencies and adjusted for relative inflation.

A number of studies have argued the difficulties of affecting the real exchange rate with nominal devaluation (Godfrey, 1985; World Bank, 1986a; World Bank, 1986b).[20] Figure 11 and Appendix Table 7, however, provide some evidence that countries in SSA have realigned relative prices. Specifically, following appreciating real exchange rates between 1970 and 1982, the trend reversed itself in the mid-1980s. This pattern was relevant to non-CFA countries where the average index of the real exchange rate increased from 87.9 in 1970-72 to 97.0 in 1978-80 and then to 113.4 in 1981-83 before the beginning of widespread efforts at policy reform. By 1988-89, the mean index for non-CFA countries had fallen by around one-third to 77.6.

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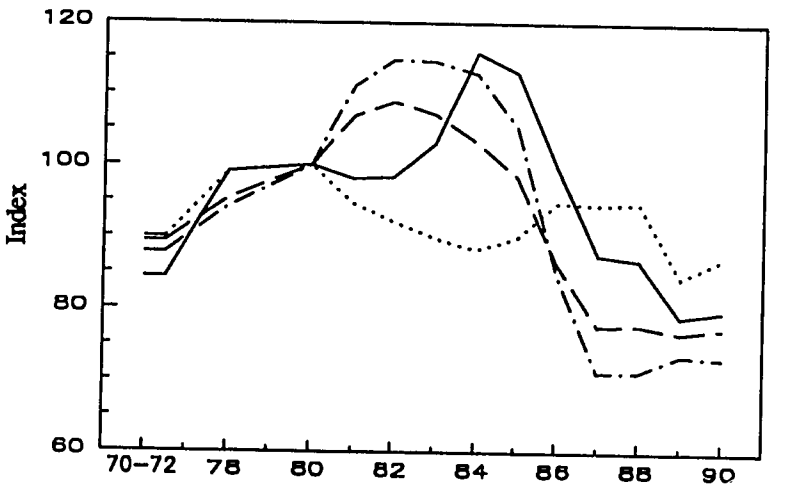
19 In particular, the need for additional revenues contributes to the overvaluation of the exchange rate and/or the existence of complex of differential exchange rates, which distort price signals and reduce incentives. In particular, a government's propensity to spend on nontradables, especially wages, is likely to be high and exceed those of private sector agents. Consequently, a reduction in government expenditures is likely to dampen demand for home goods (Khan, 1987) and to increase the price of tradables relative to nontradables. Fiscal restraint will encourage the production of tradable rather than home goods.

20 One important reason is that inflation often follows nominal devaluation, dampening real currency depreciation.

Figure 11 – Real Exchange Rates Expressed as Indices (1980=100)



——— Oil Exporting
— — Non-oil Exporting
..... CFA
—·— Non-CFA

Note: 1972-78 extrapolated. Figure for 1990 based on March value. The countries represented in this figure are Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo, Côte D'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Zaire, Zambia, and Zimbabwe.

The pace of devaluation during the 1980s was considerably faster for low-income than middle-income countries and for non-oil exporting than oil-exporting countries. The real exchange rate indices for countries in the Franc zone indicate considerable variability in the movements. This reflects the influence of domestic fiscal and monetary policies on domestic inflation. Nevertheless, the strength of the Franc since 1985 is manifest.

Perhaps of greatest interest, however, is that devaluations did not take place on a widespread scale until the mid-1980s. This can be illustrated not only with the aggregated regional data but by the country-specific experiences as well. Overall the exchange was devalued in 26 of 31 countries between 1981-83 and 1988-89. Among 14 of these countries the level of depreciation was in excess of 20 percent (see Appendix Table 7).

Countries with market-determined exchange rates showed the greatest ability to reduce the value of their local currency relative to that of their trading partners, taking into account changes in the price level. For example, Zaire's movement to a floating rate system in 1983 following the second loan from the Fund resulted in a marked devaluation of their domestic currency. A series of SBAs to Madagascar, the instigation of a more flexible system of exchange rate determination, and efforts to contain inflation appeared to contribute to meaningful devaluations in its exchange rate. Ghana met with impressive success in adjusting its real exchange rate through a foreign exchange auction that was largely financed by the World Bank and other donors. The same held true for Somalia and Zambia until they succumbed to political pressures and abandoned the auction system.[21] In the wake of adjustment loans to Gambia, Malawi, and Zimbabwe real devaluations in their respective local currency were noted. Not until 1986 when Kenya's third adjustment loan was signed did the value of their shillings relative to the value of their trading partners' currencies decrease significantly. A similar devaluation occurred in 1987 in Tanzania.

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21 It is noteworthy that, in practice, foreign exchange auctions are criticized for contributing to capital flight and the import of luxury goods.

Recent successful currency devaluations outside the Franc zone reinforce the need to consider the effects of such experiences. It is useful to distinguish between the six subsectors presented in Table 14.[22] Expenditure switching that arises from devaluation will tend to raise the price of importables and exportables relative to home goods. Those households or firms that produce exportables will benefit from currency devaluation on the income side. Households that consume imported manufactured products will pay more for such products as will consumers of traded agricultural goods such as cereals, whether or not they are imported. Consequently, real incomes will fall.

Table 14 - Sectors Used to Evaluate Changes in the Real Exchange Rate

	Nonagricultural	Agricultural
Importables	Most industrial products, final machinery, and intermediate products	Cereals, dairy products, beef
Exportables	Minerals, oil, textiles, other industrial products	Sugar, cotton, coffee, bananas, beef, cereals, fruits
Home goods	Communications, transportation, housing, and other construction, commerce, and public services	Cassava, yams, some varieties of beans

Source: Adapted from Valdes (1986).

Farmers who produce export crops or other traded cereals will receive a higher farmgate price after devaluation. However, once again, important caveats apply. First, parallel free markets may be operating, making farmers competitive internationally and/or providing farmers with remunerative

22 Two important qualifications to this simplified framework are worthy of mention. First, in countries such as Ghana prior to significant devaluation, crises in the external account eliminated all imports of consumer goods except fuels. Second, the domestic price of many importables will be determined by commercial policies (e.g., quantitative restrictions) as well as the real exchange rate. Under certain commercial policies, it is conceivable that a devaluation of the nominal exchange rate may not change even the nominal price of the importables.

prices domestically even before devaluation occurs. Second, if marketing boards exert control over prices, devaluation may lead to little actual producer price changes.

Third, if production is heavily weighted toward nontraded goods, such as roots, tubers, and legumes, farmers will derive little benefit from devaluation. Similarly in the nonagricultural sector those involved in the export of primary products or manufactured goods will receive better prices after real devaluation. However, to the extent that they must purchase intermediate product imports or imported equipment and machinery, they will tend to lose after the policy change. Once again, however, foreign exchange shortages before structural adjustment had all but eliminated imports of productive inputs in many countries with overvalued exchange rates.

A fall in the price of home goods relative to importables and exportables also implies lower payments to, for example, construction and other service sectors. The relative position of many urban workers, therefore, is likely to deteriorate especially with a rise in tradable food prices. However, some reform programs, such as that in Ghana, raise government wages in order to increase public sector worker productivity. Prior to wage increases many workers relied on second jobs to maintain an adequate standard of living.

An increasing percentage of rural African households earn a large share of their income from wage labor, not the sale of agricultural products. In Malawi, for example, the vast majority of smallholder households were net purchasers of cereals, earning significant proportions of their income as laborers on estates. Data from Mali, Senegal, Somalia, and Rwanda likewise indicate that fewer than half of the rural households in selected locations were net sellers of cereals, and between 39 and 66 percent were net buyers (Weber et al., 1988). Under these conditions higher real food prices induced by raising the price of tradable relative to nontradable goods will reduce the real incomes of urban households and may adversely affect the incomes of rural households.[23]

Second-round effects of exchange rate devaluation, such as when lower relative prices for home goods raise demand, may ignite inflationary pressures and thus dampen the effect of devaluation. Although this review cannot provide empirical evidence on how such complexities affect different

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[23] In a country, such as Rwanda, where nontradables, such as cassava, sweet potatoes, bananas, and beans, are all of considerable importance in the diet, the effect of higher prices of importables in nutrition may be limited.

households, it can examine in somewhat greater detail two related issues: the level of food production and the price of food.

AGRICULTURAL PRODUCTION

Following a devaluation, the price of tradable products is expected to increase relative to nontradable goods. The actual effects on the agricultural sector are expected to be positive because such a measure tends to turn the terms of trade in favor of agriculture. However, the short-term supply response to a devaluation in SSA is difficult to predict for a number of reasons. First, devaluation is often undertaken in concert with other measures, such as reduction of tariffs or export subsidies, that may result in little change in relative prices and whose main effect is in the gains and losses of those receiving rents from trade restrictions. Conversely there may be concurrent measures to, for example, reduce production or export taxes to support the devaluation. This indicates the importance of analyzing trade and fiscal policy and market liberalization to determine changes in the real effective exchange rate.

Second, relative price changes induced by devaluations may be of little consequence to farmers because they have already circumvented low official prices caused by an overvalued exchange rate (or administered prices through procurement programs). This was clearly the case in Somalia, where farmers avoided selling food through the parastatal agricultural marketing corporation (Abikar, 1987). In Ghana farmers' practice of smuggling cocoa to neighboring countries to avoid the low prices that the Cocoa Marketing Board offered limits what can be assumed about the price incentives offered to farmers both before and after an economic reform program. Similar situations have been observed in a number of other countries including Zaire and Tanzania (Lipton, 1987). Thus low official output prices are not necessarily representative of what farmers actually receive, which makes it difficult to relate official price changes to alterations in farmers' outputs and incomes. However, there are limitations in avoiding official markets especially in countries where interregional trade is restricted and distances to borders great.

Third is the question of the degree to which farmers can and will respond to price signals over the short versus long term. The limited stock of unused resources (e.g., land) in some parts of SSA (e.g., Kenya, Malawi), the immobility of labor, the limited marketing infrastructure, the poorly developed information systems, and the risk-averse nature of farmers in a very unstable economic and natural environment will also likely reduce the

expected short-term supply response. Large increases in agricultural supply will thus require changes in addition to better price incentives.

One must consider the distinction between private and public inputs into agriculture. The former can be expected to respond to price-oriented adjustment since a farmer makes decisions on the demand for private inputs and the desired level of outputs. Policymakers determine public inputs, and farmers have little control over these decisions. However, public inputs also have an important impact on the farmers' ability to respond to changes in prices. Lipton (1987) strongly stressed the importance of public inputs including investments in research and other measures, such as increased access to credit and inputs (e.g., fertilizer) and improved extension programs.

Reforms of agricultural parastatals and marketing arrangements also represent key elements in any strategy to increase incentives, improve the export-earning capacity of the agricultural sector, and, most important, promote household food security among both producers and consumers. However, as marketing parastatals are dismantled planners must consider whether the private sector and institutions such as cooperatives are ready to assume a major marketing role. The answer is determined by a number of factors including access to credit, information, and infrastructure. During the 1960s and 1970s the donor community advocated government involvement in marketing in response to perceived failure on the part of the private sector to meet the marketing needs of both farmers (e.g., offering a fair price after harvest) and consumers (e.g., ensuring the availability of grains in the preharvest season at a price not far in excess of the costs of storage). Thus the private sector may be unprepared to provide adequate marketing services. In Malawi, for example, a variety of constraints ranging from a shortage of credit and storage facilities to a lack of market information is retarding the pace and effectiveness of market liberalization. The problems are especially great in remote areas and villages with poor infrastructure.

A fourth issue that influences the impact of devaluation on agriculture and food production in particular is the mix of production of food and cash crops and the farmer's marketing and substitution behavior. Devaluation may in theory induce farmers to take less leisure time or reduce the share of food crops grown for home consumption in lieu of marketing food and nonfood crops. Of greater importance, however, is that devaluation will alter the incentive structure so as to encourage the production of export crops in lieu of food crops, especially home goods such as roots and tubers. This, however, should pose no problem; countries can import to compensate for

the decline in domestic food production. In practice such an export orientation may pose a risk to the nutritionally vulnerable if a country moves from a surplus to a deficit position when the CIF price is considerably higher than the FOB price. The production of export-oriented crops may also alter income characteristics (such as who receives it and when) and the nature of labor contracts. These factors are hypothesized to influence household and intrahousehold consumption and nutrition. However, the empirical literature generally does not support the contention that income from commercial crops in place of subsistence production represents a nutritional risk (Kennedy and Cogill, 1987; von Braun, Puetz, and Webb, 1987; Sahn, forthcoming).

Most countries that have recently boosted the production of basic staples have also increased land area devoted to foreign exchange earning cash crops (von Braun and Kennedy, 1986). In Mali and Senegal, for example, the production of foodgrains and cash crops was complementary (Weber et al., 1988). Thus one can infer that the economic incentive structure, nonprice environment (e.g., extension and marketing infrastructure), and a variety of other factors will often promote greater domestic food availability and export cropping at the same time.

A fifth factor that will determine whether devaluation will have positive implications for farmers is the movement in the cost of imported productive inputs (e.g., fertilizer). If farmgate prices for imported inputs rise with the devaluation, production costs will increase. In Malawi, for example, where devaluation contributed to higher fertilizer prices in an environment of administered output prices, smallholders who used fertilizer faced a real income loss. This occurred regardless of whether fertilizer was price inelastic or elastic. In the case of the former farmers would have continued to apply fertilizer at a higher price with a consequent loss of real income. If fertilizer expenditures were price elastic the value of marketing would have declined, lowering their income. A lower level of marketing may also lead to higher prices even for net consumers not directly hurt by higher input prices.

One final reason for not expecting a marked supply response to devaluation revolves around the hypothesis of the backward sloping labor supply curve among producers. This has been discussed in the abstract and predicated upon a high value placed on leisure. There is, however, a dearth of supporting empirical evidence. Nevertheless, circumstances can be envisaged where higher potential returns to labor do not encourage the farmer to respond accordingly by increasing labor inputs. In a rationed economy where demands for goods and services cannot be satisfied even with higher

cash income, farmers will set modest income targets and not attempt to exceed them. Such a scenario was observed for Tanzania by Berthelemy and Gnaegy (1987).

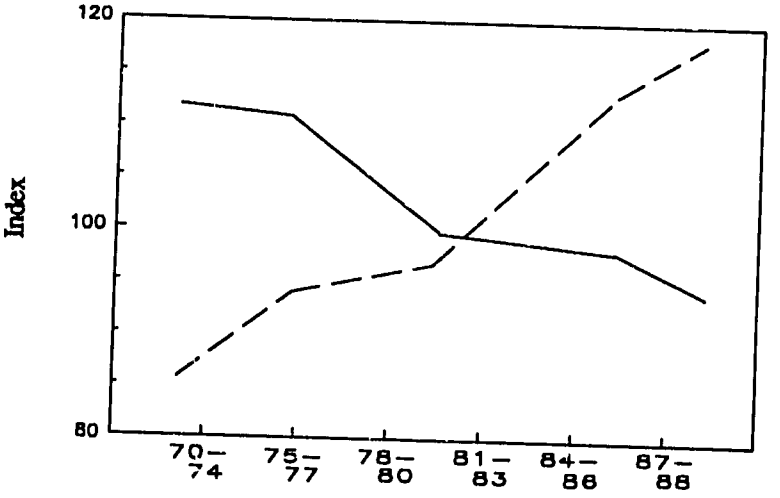
In examining price response it is important to distinguish between the aggregate and the individual commodity response because the former is likely to be low while the latter is quite variable from crop to crop. The likelihood that higher commodity prices will bring about a redistribution of outputs rather than higher aggregate output is particularly relevant to Africa because of the many constraints to increased production as discussed above.

The actual evidence on crop-specific and aggregate response in agriculture in SSA is extremely limited. Most studies generally indicated that elasticities are low especially for aggregate supply (Bond, 1983; Lecaillon and Morrisson, 1985, for Burkina Faso; Strauss, 1984 for Sierra Leone; Martin and Crawford, 1988, for Senegal; and Singh and Janakiram, 1986, for Nigeria). Exceptions to finding low own-price elasticities, such as rice in Mali (Lecaillon and Morrisson, 1986), were generally limited to single crop response, not aggregate output. It is therefore safe to assume a relatively limited increase in aggregate agricultural output as a result of price-oriented policy reforms, at least in the short term before the constellation of other factors discussed above are addressed.

Keeping in mind these considerations and qualifications, food production was examined as a rough proxy for national food security. While food production in SSA steadily increased throughout the 1970s and 1980s just the opposite occurred for per capita levels (Figure 12). Data examined by region and other groupings show few important deviations from the overall pattern (Table 15). Perhaps an exception is the fact that per capita production levels have not fallen during the 1980s among oil-exporting CFA and Island countries. Turning to the individual countries, few showed sustained increases in production that has enabled them to keep pace with the rapid population growth. Exceptions are Burundi, Côte d'Ivoire, and Swaziland, where production has kept pace with population growth.

Correlation analysis between devaluation and agricultural production yielded no significant coefficients. Likewise, plotting movements in exchange rates against agricultural output did not suggest any relationship. This reflects the importance of weather conditions, the considerable influence that marketing and trade policies exert over prices received by farmers, and the role of nonprice factors in determining changes in agricultural production. Caution should be exercised, therefore, in attributing short-term changes in agricultural performance, whether they be positive or

Figure 12 – Real Food Production and Real Food Production per Capita Expressed as Indices (1980 = 100)



——— Per Capita Food Production
— — Food Production

Source: Data tapes from USDA, Economic Research Service. See Appendix Table 4 for a list of countries represented in this figure.

Table 15 — Real Food Production Expressed as Indices (1980=100)

Country	Food Production						Per Capita Food Production					
	1970-74	1975-77	1978-80	1981-83	1984-86	1987-88	1970-74	1975-77	1978-80	1981-83	1984-86	1987-88
Benin	81	87	102	97	128	127	100	97	104	92	110	101
Botswana	103	108	93	107	92	90	140	126	96	99	76	67
Burkina Faso	87	91	98	104	125	133	102	99	100	100	111	110
Burundi	87	98	99	105	111	122	100	106	101	100	97	99
Cameroon	92	101	99	100	106	112	112	112	101	95	93	91
Congo	89	94	97	105	110	117	109	104	99	100	97	96
Côte d'Ivoire	60	79	95	101	129	137	82	92	98	94	107	104
Ethiopia	87	86	98	102	100	106	104	94	101	97	88	87
Gabon	88	85	98	103	105	110	96	89	99	100	97	97
Gambia	139	131	103	134	137	138	167	144	106	130	124	120
Ghana	130	115	100	90	117	121	165	131	103	84	99	95
Guinea	86	95	97	104	104	109	102	103	99	99	93	91
Kenya	87	99	103	105	99	112	119	116	108	97	80	82
Lesotho	99	91	99	102	107	111	119	100	101	97	94	92
Liberia	77	88	97	107	115	115	99	101	100	100	98	91
Madagascar	88	95	97	105	112	119	109	106	100	99	97	97
Malawi	80	90	100	105	106	106	100	101	103	98	91	84
Mali	76	89	96	114	110	111	91	97	98	108	96	90
Mauritius	103	102	104	107	107	120	115	111	107	102	97	104
Niger	73	75	99	97	94	96	89	84	102	92	82	77
Nigeria	91	89	95	105	121	127	119	102	98	99	103	99
Rwanda	71	85	95	110	113	94	92	97	98	103	96	74
Senegal	100	121	104	112	112	130	132	140	109	108	99	107

(continued)

Table 15 (continued)

Country	Food Production						Per Capita Food Production					
	1970-74	1975-77	1978-80	1981-83	1984-86	1987-88	1970-74	1975-77	1978-80	1981-83	1984-86	1987-88
Sierra Leone	92	103	102	111	106	113	104	110	104	107	96	99
Somalia	91	93	99	104	114	125	127	111	103	98	99	102
Sudan	70	84	92	105	107	108	89	95	95	99	93	88
Swaziland	77	83	95	108	118	125	96	93	98	102	102	99
Tanzania	69	87	96	101	109	116	90	99	100	95	91	89
Togo	93	88	97	97	107	110	113	97	100	92	92	88
Uganda	100	114	103	113	122	144	126	129	107	106	103	112
Zaire	86	96	97	107	116	123	108	108	99	101	100	98
Zambia	90	128	104	99	115	123	114	144	108	93	97	95
Zimbabwe	100	110	97	101	108	90	130	127	101	94	90	69
All countries	89	96	98	105	112	116	111	108	101	99	97	93
Oil exporting	88	91	98	102	114	119	107	101	100	97	100	97
Non-oil exporting	89	97	99	106	111	116	112	109	102	100	96	93
CFA	83	91	99	103	114	119	103	102	102	97	99	96
Non-CFA	91	98	98	106	111	115	114	110	101	100	96	93
West	91	96	99	106	116	120	113	108	102	100	101	98
South	91	102	98	104	108	107	116	115	101	97	92	84
East	84	94	99	105	109	118	109	107	102	99	92	93
Central	85	93	97	105	110	113	103	103	100	100	96	92
Islands	96	99	101	106	109	119	112	109	103	101	97	100
Low Income	89	97	99	105	112	117	111	109	102	100	97	94
Middle Income	89	94	97	104	111	114	111	106	100	98	96	92

Sources: Data tapes from USDA, Economic Research Service.

negative, to policy reform. This requires the development of models to help predict how price- and nonprice-oriented factors affect agricultural output.

Finally, the tenuous link between food production indexes and food security is amply illustrated by the data on per capita calorie intake (Figure 3) that did not fall during the 1980s commensurate with per capita food production. Imports and other factors (e.g., stock changes) clearly must be taken into account in relating food production levels to food security.

MOVEMENT OF CONSUMER PRICES FOR FOOD

The factors that contribute to an economic crisis, including expansive monetary policy, deficit spending, deteriorating terms of trade, and declining domestic production, are expected to lead to price increases. Various components of macroeconomic adjustment programs will in turn affect prices, although whether this will mitigate or exacerbate inflation is not predicted by theory. Policies such as restricting the money supply are designed to slow down the rate of inflation although other measures, such as depreciation of the value of domestic currency, run the risk of being simultaneously deflationary on the demand side and inflationary on the price side. Determining the distributional implications of inflation, however, is a vexing problem. Johnson and Salop (1980) argue that the poor are most hurt by price inflation because they have little access to appreciating assets. The expected outcome is confounded by questions regarding how labor markets adjust and how capital markets function under such conditions.

Furthermore any examination of prices must take into account that low or moderate prices often observed in commodity markets before market liberalization may coexist with high-priced parallel markets that clear at a price in excess of the true equilibrium price. The subset of consumers who receive the rents by virtue of their access to subsidized goods may, although in all likelihood will not, be low-income households. Even explicit consumer food subsidies are characteristically poorly targeted to the needy households, and if consumers do buy some food at below-market clearing prices at the margin they usually pay higher prices on the parallel free market. In such circumstances liberalization that removes the two-tier structure can result in free-market prices falling or at least not increasing.

Of equal importance to the concerns about food security are two issues. First, low-income households are very responsive to food price increases and spend the highest share of their budget of any income group on food. The poor will be most seriously affected by price increases, especially the price of food relative to other goods. Second is the possibility that, in the absence

of countervailing trade and agricultural price policies, food prices will rise faster than the general price index, given that most food items are tradable commodities. This in turn will have its greatest negative impact upon urban laborers and landless rural workers for whom food comprises a large portion of their consumption bundle. However, the composition of tradable and nontradable food purchases and the supply response to changes in incentives will largely condition movements in relative prices.

In light of theoretical questions concerning how poor consumers will be affected by price changes, information on consumer food prices and food relative to nonfood prices provides further insight into how low-income groups fare in the short term during adjustment.[24] The ratio of the food price deflator to the general or nonfood price deflator was examined for several countries (Table 16). The results suggest that food prices did not rise more rapidly than nonfood items after the initiation of the adjustment process. This reflected a variety of factors that differed from one country to the next, including good rains raising domestic production (i.e., in Ghana), falling international food prices, the decision not to remove price controls (i.e., in Malawi), and no attempt to devalue the currency in CFA countries. Thus the evidence from a few countries did not support the hypothesis that consumers will inevitably face higher real food prices relative to nonfood prices in the wake of adjustment.

In examining actual market prices during the past decade, one can examine either nominal or real prices. The former have the distinct disadvantage of not accounting for general increases in the price level, which are felt both on the earnings side and the expenditure side of the household's ledger. This problem suggests looking at movements in real prices. However, doing so has its own perils. Most prominent is that consumer price indexes (CPIs) in most developing countries are heavily weighted toward the food basket. Any increase in nominal food prices will drive up the CPI, which in turn will dampen any changes in real food prices. The real concern with household welfare would ideally involve determining whether the rate

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[24] In examining data on consumer price movements, it must be kept in mind that prices cut with a two-edged sword, affecting both producer earnings and consumer incomes. Ideally, a combination of increased productivity brought about by technical change and improved marketing efficiency, which reduces margins, will result in a positive outcome on both sides of the equation. In this scenario, consumers would benefit from lower retail prices, and profits would increase for producers. Achieving this through fostering a dynamic agricultural sector is clearly a top priority for development planners.

Table 16 – Ratio of Food to General or Nonfood Price Index

Country/Item	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Somalia (Mogadishu)	1.00	1.02	1.01	1.13	1.09	0.95	0.98	1.09	0.90	–	–	–
Food: general												
Ghana (National)	1.00	0.92	0.96	0.98	0.95	1.06	1.17	0.93	0.75	0.72	0.71	–
Food: general												
Côte d'Ivoire (Abijan)	1.19	1.16	1.22	1.26	1.22	1.19	1.17	–	–	–	–	–
Food: general												
Mali (Bamako)	–	–	–	0.96	0.99	0.94	1.02	1.03	1.02	0.97	–	–
Food: nonfood												
Senegal (Dakar)	–	–	1.13	1.13	1.07	1.10	0.99	1.06	1.06	1.01	–	–
Food: general												
Zambia	1.02	1.02	1.02	1.04	1.05	1.06	1.07	1.06	1.05	–	–	–
Food: general												
Zimbabwe	0.99	0.99	0.97	0.96	0.95	0.95	0.98	1.03	–	–	–	–
Food: general (low-income)												
Rwanda	–	–	–	1.30	1.18	1.03	0.97	1.06	1.05	0.95	–	–
Food: general												
Malawi (Lilongwe)	1.03	1.01	0.99	1.00	0.97	0.95	0.95	0.91	0.92	0.97	1.00	0.98
Food: general (low-income)												
Madagascar	0.96	0.98	0.99	1.00	1.03	1.02	0.95	0.98	1.02	1.11	0.95	–
Food: general												
Tanzania	–	–	–	–	–	–	–	1.07	1.03	1.04	1.06	–
Food: general												
Niger	–	–	1.00	1.00	1.03	0.97	0.97	0.98	0.96	0.94	0.89	0.80
Food: general												

of increase in nominal prices of goods exceeds the rate of increase in wage payments and other sources of income. The latter question requires an analysis of data from disaggregated household consumption and expenditure studies, which is far beyond the scope of this monograph.

Thus we are left with making a compromise once again, relying on aggregated secondary sources for data on real price changes and real wages. In particular we first examined the actual market prices from a few countries during the past decade. As expected nominal prices have risen without exception and often quite steeply, reflecting the inflation in most countries. Interestingly, however, in a number of countries, including Ghana, Mali, Somalia, and Tanzania, the domestic real price of major cereals actually fell after the introduction of macroeconomic adjustment programs (Table 17). In Somalia the government initiated a foreign exchange auction in 1986 in the wake of a liberalization of international and domestic grain marketing. The combination of increased foreign exchange availability, liberalization of cereal marketing, and improved harvests resulted in falling real prices for rice, maize, and sorghum after 1984, despite a dramatic real devaluation of the official exchange rate (Sahn and Alderman, 1987).

Similarly, real prices for rice and, to a lesser extent, maize in Ghana declined since 1983 even while the official exchange rate moved from Cedis 3.45/US$ to Cedis 60/US$ between 1983 and 1985. Partial liberalization of markets reduced grain rationing at official prices, which contributed to free-market prices keeping well above international prices. This, coupled with increased domestic production consequent to the end of drought and a likely increase in marketings because of higher farmgate prices, resulted in lower real food prices.

In Tanzania, despite the reductions in consumer subsidies in recent years, the impact on the poor was minimal because prior to the economic recovery program access to cheap subsidized food was primarily a privilege of upper-income urban households (Amani et al., 1988). So, for example, while the official real price of maize flour increased between 1983-84 and 1985-86 the parallel market price, which is of greatest relevance to the poor, declined. Likewise, open-market wheat and rice prices fell between 1983-84 and 1985-86 while the real prices in official markets stayed constant, once again showing how the poor may have benefitted from market liberalization, though just the opposite was the case for successful rent seekers (i.e., upper-income urban households).

In Mali consumer prices for rice also declined in real terms since the initiation of a cereal reform program, a major objective of which was to end

Table 17 - Changes in Real Cereal Prices (1980=100)

Country/ Commodity	1973-74	1975-76	1977-78	1979-80	1981-82	1983-84	1985-86	1987-88
Burkina Faso (CFA)								
Rice*	–	–	227.96	186.77	152.17	112.04	111.41	–
Millet*	–	–	120.91	106.23	76.61	83.92	78.61	–
Cameroon (CFA)								
Rice*	–	207.23	162.23	203.20	142.10	114.88	118.17	–
Maize*	–	102.76	113.95	84.14	109.41	97.96	99.12	–
Côte d'Ivoire (CFA)								
Rice*	–	212.72	168.05	107.34	116.75	149.53	–	–
Rice**	–	213.73	142.37	107.34	106.18	114.51	–	–
Gambia (Dalasi)								
Rice*	–	0.83	0.71	0.70	0.66	0.64	0.64	0.63
Ghana (Cedis)								
Rice*	–	–	7.02	17.19	9.91	13.93	9.93	9.85
Maize*	–	–	4.41	4.29	3.52	2.79	2.39	3.48
Kenya (Shillings)								
Maize**	–	1.91	1.72	1.34	1.42	1.49	1.52	–
Madagascar (FMG)								
Rice*	–	98.69	77.29	90.01	78.48	89.05	189.22	120.40
Rice**	–	102.10	73.03	61.57	73.30	80.43	92.30	90.67
Malawi (Kwacha)								
Rice*	–	0.28	0.37	0.70	0.63	0.62	0.57	0.42
Maize**	–	0.09	0.09	0.08	0.08	0.07	0.08	0.08
Maize*	–	0.12	0.11	0.09	0.12	0.13	0.11	0.09
Mali (CFA)								
Rice*	–	111.67	150.86	148.10	146.20	121.22	107.26	–
Rice**	–	84.45	78.29	85.99	93.39	89.38	77.05	–
Millet*	–	53.50	86.73	77.02	81.73	86.73	80.75	–
Millet**	–	39.21	34.53	37.54	43.76	45.05	38.84	–
Niger (CFA)								
Rice*	–	172.94	176.23	171.20	157.14	144.99	–	–
Rice**	–	163.41	99.42	84.10	70.81	103.75	–	–
Millet*	–	40.93	94.92	94.22	133.28	84.45	–	–
Millet**	–	24.08	49.71	45.55	84.84	82.21	78.29	–
Senegal (CFA)								
Rice*	–	145.04	107.99	95.41	87.92	84.45	91.21	–
Rice**	–	129.79	97.05	83.48	80.04	83.36	88.03	–
Millet**	–	68.98	75.20	69.11	65.12	94.61	74.11	–

(continued)

Table 17 (continued)

Country/ Commodity	1973-74	1975-76	1977-78	1979-80	1981-82	1983-84	1985-86	1987-88
Somalia (Shillings)								
Rice*	–	–	8.64	7.16	10.00	7.32	8.60	–
Maize*	–	–	4.30	5.25	3.46	5.24	3.68	–
Tanzania (Shillings)								
Maize Flour**	2.74	2.38	2.74	2.01	1.27	1.06	3.69	–
Maize Flour*	–	–	–	–	3.64	4.96	4.59	–
Maize Grain*	–	–	–	–	–	3.45	2.26	1.90
Maize Grain**	–	–	–	–	–	1.61	1.50	1.68
Rice**	4.94	7.64	5.49	4.95	3.79	4.16	3.27	3.38
Rice*	–	–	–	–	9.79	10.65	8.42	5.99
Wheat**	5.43	7.16	5.88	5.26	4.00	4.55	3.67	4.07
Wheat*	–	–	–	–	10.99	8.31	8.49	7.66
Zimbabwe (ZS)								
Maize*	–	75.50	69.70	80.31	15.20	98.70	103.64	87.16

Source: Burkina Faso (Delgado 1987); Cameroon (Nkwain et al. 1988); Cote d'Ivoire (Humphreys 1986); Gambia (John 1988); Ghana (unpublished statistics from Ministry of Agriculture); Kenya (unpublished statistics from Jaeger, World Bank); Madagascar (Hirsh 1986, Berg 1988, IMF 1988); Malawi (Arulpragasam and Merid 1989); Mali (Humphreys 1986); Niger (Humphreys 1986, Delgado 1987, World Bank); Senegal (unpublished statistics from Commander, Delgado 1987); Somalia (Salm and Alderman 1987); Tanzania (Amani et al. 1988); Zimbabwe (Agricultural Marketing Authority 1989).

* Free market prices.

** Administered prices.

the subsidy of cereal prices to consumers. Prior to reforms a large parallel free market also existed alongside the official market. Prices in the latter fluctuated between 50 and 200 percent higher than those in the official market during the 1970s. In 1981 the government embarked upon a cereal reform program, one objective of which was to raise official consumer and producer prices. The higher consumer prices were designed in part to reduce the monetary deficit of the marketing parastatal, OPAM. A consortium of donors agreed to provide food aid in order to finance such reforms and, in particular, to ease losses incurred by OPAM during the transition. When official and market prices were aligned OPAM's financial deficit would be eliminated (Humphreys, 1986).

In spite of the accomplishments of Mali's reform program, most noticeably the acceptance of a role for private grain traders, the consumer subsidy was not eliminated as observed in the persistent gap between official and parallel markets through 1985. With a bumper harvest in the fall of 1985 the price difference between the two markets quickly disappeared as prices fell on the parallel market, and the official price remained constant. In fact high levels of domestic production, poorly timed food aid deliveries, large levels of commercial imports in the wake of a declining dollar, and lower international cereal prices reduced the free-market price to a level below the official price. The subsidy element in official sales was thereby eliminated. Thus a combination of factors, including increased private sector imports, food aid, and most important, a desire to hold down grain prices to avoid higher wage demands, contributed in 1983-85 to the failure of the cereal reform program to raise official prices to a level more closely aligned with world market prices. The irony is that Mali's efforts to achieve the preeminent stabilization objective, reducing the budget deficit by holding down wage demands, occurred at expense of the efforts to restructure cereal marketing (Humphreys, 1986). The resolution of the conflicting policy objectives may have had the positive unanticipated side effect of protecting the food security of nutritionally vulnerable households.

Data from the Gambia and Malawi also indicated that real free-market rice prices in the capital city did not rise following the adjustment program. This information when combined with the other examples cited above runs contrary to the customary notion that the structural adjustment process will necessarily raise real prices of cereals in urban areas.

In contrast real prices of staple commodities have risen in a number of adjusting countries since reform measures were instituted. One such case that has received considerable attention is Zambia, which had maintained

low maize meal prices since before independence. During the 12 years before reform the untargeted maize subsidy accounted for 5.6 to 15.8 percent of the total government expenditures with large year-to-year fluctuations (World Bank, 1986g). Recognizing the unsustainable costs the Zambian government increased the consumer price of maize meal in real terms. While raising maize prices was important to the structural adjustment program the political volatility of this issue precluded a complete abolition of the subsidy and thus contributed to the dissolution of the internationally financed structural adjustment program (World Bank, 1987c).

Eliminating the food subsidy in Zambia represented a potential short-term nutritional risk for the urban poor. It was estimated that the price of maize meal would have risen 120 percent if the subsidy had been removed in 1986[25] and that the household budget of low-income groups would have had to increase 17 to 25 percent to compensate for rising prices following complete decontrol (World Bank, 1987c). A targeted subsidy to lower-income groups during the transition to market-determined maize prices represented a potentially acceptable and logical approach to the conflicting food policy objectives of budget deficit reduction and household food security.

Efforts to reduce the food subsidies in Sierra Leone and Tanzania also were necessitated by budgetary constraints. In Freetown, Sierra Leone, loss of the explicit subsidy coupled with exchange rate devaluation resulted in an increase in the price of a cup of rice (the form in which the poor usually make their purchase) by approximately threefold between June 1986 and March 1987. The price of palm oil, which receives a larger subsidy, rose even more (Longhurst, Kamara, and Mensurah, 1988). In Tanzania the official price of maize increased by 160 percent as part of the economic reform program. This, however, coincided with a 35 percent increase in minimum nominal wages. Given that maize meal accounted for no more than 20 percent of the expenditures of low-income households in Dar Es Salaam, the wage increase compensated for the rising price of the staple. Furthermore, as discussed above, a considerable portion of maize meal purchases in Tanzania were actually made on the black market at higher prices that were not influenced by changes in the expensive government subsidy.

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25 This is based on the estimated domestic cost of production and marketing, not the CIF maize price.

Another country that witnessed a dramatic increase in the price that consumers pay for staple commodities was Madagascar, where the market price of rice doubled between 1983-84 and 1985-86. Although exchange rate adjustments undoubtedly contributed to this price rise, domestic marketing and trade policy reforms once again were primarily responsible. In particular the elimination of government subsidies, privatization of marketing, and limitations on imports were the major causes of this precipitous rise in prices.

The examination of domestic consumer prices shows that adjustment has not led to across-the-board increases in real consumer prices in SSA, and, where it has, changes in subsidies, marketing arrangements, and trade policy seem to be more important than devaluation.

Only limited inferences can be drawn about income changes or nutritional status of the poor from actual cereal price movements. First, an examination of the prices of cereals leaves out the nontradables, which fill the food baskets of many poor households. For example, poor consumers in Ghana and Somalia were unlikely to witness a disproportionate decline in their incomes if cereal prices rose because their diets consisted largely of non-traded staple foods. This was in contrast to Côte d'Ivoire, where purchased rice was the primary staple even for low-income households. Problems also arise with the reliability of price data related to measurement errors and the determination of changes in real prices being predicated on CPI deflators in which the weight accorded to food is high. Nonetheless the important result of this analysis is that the evidence does not suggest any general pattern of rising commodity prices in the wake of adjustment that would adversely affect the large numbers of households that are net consumers of foodgrains. This should probably not come as any great surprise as parallel markets are usually extant in cases where distortions are great. Quite simply, where exchange rates were grossly overvalued and price controls resulted in rationing, many, if not most, of the households were paying higher prices in the parallel market before adjustment.

REAL WAGES

The consumer price data presented above do not provide any concrete evidence about the movement of commodity prices relative to wages. Without such information it is difficult to draw any inferences concerning the real purchasing power of households that depend on the labor market for their income.

As with other issues one can rely either on theory or empiricism (or both) to assess the effects of changes in real wages. As far as economic theory goes

changes in market-determined real wages that result from currency devaluation will depend on relative factor intensities in traded versus nontraded sectors. In addition consumption propensities will affect real wage changes (Addison and Demery, 1990).

In order for a devaluation to be effective in reducing a trade deficit, however, real wages must fall relative to tradable goods unless adjustment brings about increased productivity. If neither occurs the only way to reduce the current account deficit in the short term is by increasing unemployment. Otherwise prices and wages will rise in such a way as to leave exports and imports in the same competitive position as before and, consequently, the trade balance unchanged.

The germane question is what has happened to wage rates in the period since adjustment began? Finding an answer is difficult because in many cases wages were not determined in the marketplace but by government decree. Furthermore, in most cases where wage data were readily available, they were for legislated minimum wages or public sector wages, which have a tenuous relationship to market-determined wages in the private sector. Previous work has shown that public sector wages, especially at the lower end of the wage scale generally exceed wages of workers with comparable skills in the formal private sector. Furthermore legislated minimum wages are often not adhered to even in the formal private sector. Although some surveys occasionally capture wage levels in the private formal sector, reliable data on wages in the informal sector are extremely rare. Informal sector wages are likely to fluctuate seasonally and from year to year, which adds to the difficulty of interpreting the few available data sources. More serious is that a large share of African households are engaged in own-account activities and/or working in the informal sector. This makes it even more difficult to glean any meaningful information about changes in living standards from published wage data.

Evidence on real wages was available for a few countries. In Ghana real wage increases benefitted all categories of workers in the formal sector following the initiation of the reform program, although little is known about what happened to workers in the informal sector (Tabatabai, 1986; Roe, 1988). This increase must, however, be placed within a context of very low government wages in the decade prior to the reform program.

In contrast real wages in the public sector declined in Côte d'Ivoire and Kenya between 1978 and 1984 with a similar fall in average private sector and minimum wages recorded in Kenya since 1980 (Kenya Central Bureau of Statistics, 1985), 1985). Unlike real wages in Ghana, the moderation that

occurred in those countries during adjustment followed a period (1970-78) during which real wages by and large kept pace with inflation. Likewise, civil servants' wages in Madagascar fell markedly in the past few years, as did the official minimum wage rate (Berg, 1989). By 1987 civil servant wages were only 40 percent of 1979 levels. This decline likely reflected a pattern of government emphasis on increasing incomes of agricultural producers rather than those engaged in the formal wage labor market. A similar story also emerges in Mali, where civil service real wages declined five percent annually between 1980 and 1985 while legislated minimum wages barely kept pace with price increases (Humphreys, 1986).

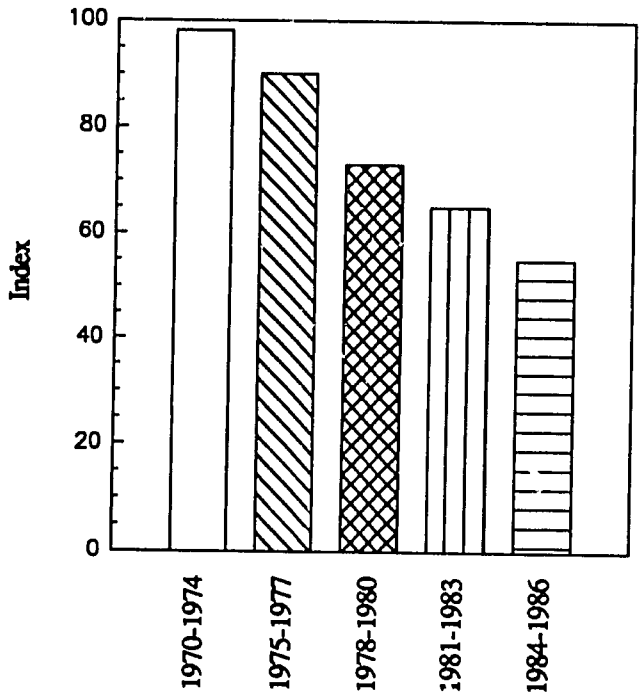
Other countries that have witnessed dramatic declines in real wages include Tanzania, Uganda, Nigeria, and Sierra Leone (Jamal and Weeks, 1988). However, in all these cases and in those discussed above, the wage deterioration began prior to the policy reforms.

A recent analysis of trends in real official minimum wages between 1970 and 1986 (Figure 13 and Appendix Figure 1) revealed a steady and marked decline in real legislated minimum wages in most countries. Wages were lower during 1984-86 than during 1981-83, which represents a continuation of a long-term downward trend.

Although the drop in minimum wages during the 1970s and early 1980s by and large predated any serious effort at economic restructuring, the figures refute the suggestion that wage rigidities were a major impediment to adjustment. In addition, these data suggest that reliance on markets and integration into the cash economy represented risk factors. Quite simply, dependence on a monetized economy may be hazardous either during periods of economic deterioration or during the transitional stages of macroeconomic stabilization when there may be large declines in real wages. Caution is necessary, however, in interpreting reductions in real wages as an accurate proxy indicator for reductions in living standards. Problems with their accuracy and representativeness, coupled with the fact that households have a diversity of income sources besides wages, limit the meaningfulness of these data. In addition, real wage indexes computed on the basis of official prices may have little relevance in many countries with large distortions that lead to parallel markets.

Despite the erosion of real wages, minimum wage earnings still exceeded rural incomes in many countries. For example, the gap between minimum wage earnings and average agricultural income remained noticeably large in Burkina Faso, Mali, Senegal, and Zambia, where a combination of poor weather and price policy have contributed to low earnings among farm

Figure 13 – Trends in Real Official Minimum Wage Expressed as Indices (1970=100)



Source: Adapted from Starr, 1987.

households. In other countries, however, including Ghana, Somalia, Sudan, Uganda, and Zaire, minimum wage earnings in the mid-1980s had fallen below agricultural incomes (Starr, 1987). In fact, Jamal and Weeks (1988) argue that the narrowing of the gap between urban and rural wage earners requires rethinking popular notions about the nature and causes of migration and concepts such as an excessive supply of labor being indicative of wages being set too high.

The limited inferences that can be drawn from these data further reinforce the need to improve the availability of wage data in developing countries. Adequate data sources will provide greater insight into the situation of low-income groups during economic growth and decline and provide information on the urban-rural terms of trade and international competitiveness.

4. CONCLUSION

This monograph has taken a preliminary look at indicators that are likely to be affected by stabilization and structural adjustment programs and that will in turn influence the living standards of low-income groups. Specifically, data for a number of SSA countries were presented and discussed on public expenditures and on price and wage movements as mediated by currency devaluation and changes in direct price and wage policies. Despite the limitation of employing aggregate and market-level data, the evidence from SSA fails to support a picture of widespread negative impacts of adjustment on the macroeconomy that have been reported elsewhere (see, for example, Cornia, Jolly, and Stewart, 1987; Killick, 1984). Likewise, assertions of widespread decline in consumption and incomes as a consequence of adjustment are not supported by the data. This is not to suggest that there is not a social welfare crisis in large portions of Africa's urban and rural populations. However, to attribute the sorrowful plight of the poor in SSA to adjustment programs, given the lack of convincing research, is counterproductive both in terms of focusing our attention on a misrepresentation of the causes of poverty and by possibly further delaying a movement toward economic reforms that are necessary, albeit not sufficient, to raise living standards.

Of course while there is no strong evidence linking policy reform to a declining standard of living, adjustment has not reversed the endemic poverty and food insecurity throughout SSA. One cannot become sanguine about adjustment when, in fact, the disequilibria in the internal and external accounts of many countries have hardly been reduced. The lack of significant reform accomplishments at the macroeconomic level in many countries does not generate optimism that sustainable improvements have occurred at the household level. However, once again one must recognize the diversity of experience both in terms of the laudable performance of some countries under adjustment (e.g., Ghana) and the stagnation of others because of their inability to sustain reform efforts (e.g., Somalia, Zambia) or the inability of adjustment to deal with underlying structural weaknesses in the economy (e.g., Malawi).

This lack of compelling evidence at the aggregate level should come as no surprise. First, conclusions are difficult to glean from the available information because most adjustment programs were initiated so recently. Not only their timing but also their level of financing and degree of im-

plementation differ dramatically. In addition, conditions prior to policy reform were vastly different from country to country, making it difficult to compare the effects of adjustment on macroeconomic aggregates, prices, and living standards without a full-blown general equilibrium model. These difficulties are responsible for much of this monograph's inconclusive evidence. The slow implementation of proposed programs in some countries, the wide range of policies, the variety of historical and institutional country-specific contexts, the policy reversals, and on-again off-again character of adjustments limit the generalizations that can be made about the experiences in SSA.

This diversity of experiences relates to a second important reason for the difficulty in drawing firm conclusions on the impact of adjustment to date. This monograph has examined performance and changes within SSA as a whole, which obscures the reasons for the considerable variability in the adjustment process. This argues strongly in support of the need to synthesize the lessons of adjustment based on a detailed examination of a few countries' experience instead of the necessarily superficial treatment of all SSA countries. Thereafter the findings of these country studies can be synthesized, weaving the common threads into a single story and providing more convincing evidence of the short-term impact of policy reform on lower-income groups.

Despite the limitations of evidence presented in this monograph and the ensuing discussion, several broad observations may be made regarding the adjustment experience in SSA and its impact on the poor. First, there is little evidence that Africa is undergoing severe austerity programs as a consequence of adjustment. Public spending has generally not been curtailed. No major reallocation from the important, albeit limited, social sector has been made. No rapid increase in the real prices of staple food faced by consumers, especially in the parallel market where most of the poor participate, has been observed. Even the increases in nominal prices and declines in official real wages, although evident in many countries, are not movements that began with adjustment. Too much, however, should not be read into the observed trends. For example, government spending is not declining in the aggregate or in the social sector, but this is not to suggest that many countries in SSA do not face a crisis in underfunding of recurrent expenditures for essential services or in generating foreign exchange to purchase needed intermediate inputs. Likewise, many of the links implied in this analysis, such as between government spending on health and the health status of the populations, are weak at best. That is, although this monograph examined government expenditure behavior and social spending patterns during the 1980s, the causal

links between spending and welfare outcomes were not addressed. Just how do changes in education spending affect primary school enrollments? What is the relationship between enrollment ratios and literacy? And how does literacy affect productivity and wages? Until further research is complete only one fact seems irrefutable—the efficiency and equitableness of government spending in the social sector leaves much to be desired throughout much of SSA, providing a major opportunity for reforms to benefit those in greatest need.

In essence, to confuse the association between adjustment and the economic crisis is a great disservice. The fact remains that Africa's economic stagnation is largely responsible for low incomes, government revenues, public and private sector investment, and high rates of poverty. Stagnation did not arise from structural adjustment, and the financing of economic recovery programs is crucial for the future of most recipient countries.

Second, the challenges faced by adjustment programs in Africa require far more than financing to continue the functioning of the government and the provision of services. Adjustment is also a question of building, or at least rehabilitating, the social and physical infrastructure that is either absent or decayed throughout the continent. Indeed the social infrastructure in Africa is relatively undeveloped compared with that of most of Latin America. Because the poor in sub-Saharan Africa are less likely to be the direct or indirect beneficiaries of government spending in the social sector, they lose less during periods of fiscal austerity that entail reductions in the subsidies on education, health, and related social services.

Other explanations have also been offered to suggest why adjustment may be less hazardous to the poor in Africa. Some argue that while some stabilization measures may result in a transitional deterioration in the GDP of market economies, poor aggregate growth performance will have relatively little effect on poor households because large numbers engage in rural nonmarket activities (Helleiner, 1986). These low-income groups who function outside the monetized economy may not be as exposed to the undesirable consequences, such as declining legislated wages, of stabilization. Many of the poor in Africa's agrarian, largely self-provisioning societies may be less vulnerable to macroeconomic adjustment than their Latin American counterparts. The flow of remittances and food from rural areas to the city and temporary migration of urban workers to the farm buffer any deleterious effect of reform on urban households. Nonetheless fewer and fewer households in Africa operate outside the monetized economy and are not dependent on state-run services and transfers. In addition, increasingly

large numbers of households are net purchasers of food. This is especially true in areas where civil strife and environmental degradation contribute to increased dependence on the government.

A third important factor to consider in looking at the impact of policy reform in SSA is that adjustment is generally focused on removing gross economic distortions prevalent throughout factor, product, and labor markets. These distortions in turn lead to parallel markets, where, in fact, it is likely that many households, rich and poor alike, are consumers and producers. Prices differ on parallel markets and more closely reflect supply and demand conditions than those set in official markets. Thus, spurious conclusions will likely be reached on the impact of adjustment when prices in official markets are analyzed, taking into account the rationing of low-priced goods and services. This fact admonishes caution on the part of the analyst when, for example, a precipitous increase in interest rates or food prices are pointed to as evidence of the deleterious effects of adjustment.

In the final analysis, the characteristics of the reform program and the factors that precipitate it will largely condition the impact on the households. Although it is difficult to neatly categorize countries by their prior conditions and the nature of their economic recovery programs, it is useful to illustrate how these differences will determine how the poor fare in the wake of adjustment.

Take the case where distortions discriminate against sectors where the poor are earning income or purchasing goods. It is reasonable to expect macroeconomic adjustment to reverse these distortions, and thereby improve the welfare of the poor. Similarly, in African countries that witnessed protracted periods of economic decline because of gross distortions in prices and disincentives to production (e.g., Ghana), the adoption of growth-oriented reforms, even if in conjunction with limited austerity measures (e.g., public expenditure reduction), raises reasonable prospects that policy reform will induce a supply response even in the short term. Likewise the loss of economic rents to the privileged will likely be accompanied by new economic opportunities for others. In combination these factors can lead to higher incomes and greater access to goods and services that were often rationed or nonexistent.

There is another group of countries whose economies grew rapidly during previous years but, because of a combination of domestic policies and international events, face the prospect of adjustments that will likely be accompanied by reductions in growth and government expenditures. This is probably best illustrated by the situation in Côte d'Ivoire, where govern-

ment-led investment resulted in an unsustainable overexpansion of the economy. The stabilization needed to balance the internal and external accounts inevitably reversed much of the growth. This also occurred in Madagascar and Togo, where a relatively rapid rate of GDP growth during the second half of the 1970s was quickly reversed in the 1980s because of austerity measures adopted in the wake of unsustainable levels of investment. Some low-income households suffered along with the rich from policies designed to reduce absorption, although the poor would likely be worse off in the absence of a foreign-financed adjustment program given the inevitable occurrence of some sort of adjustment regardless of the conditionality that accompanied World Bank loans.

Similar conditions that require reductions in government investment and other expenditures exist in countries that have undergone a dramatic deterioration in their terms of trade following a period of economic expansion. Cameroon is voluntarily undertaking a variety of stabilization measures subsequent to falling oil prices. The higher transportation costs for landlocked Malawi caused by conflicts in southern Africa will contribute to further increases in import costs and lower prices for exports. All households will likely suffer as a result of negative changes in the external environment. This, coupled with the relatively low levels of macroeconomic distortions and mismanagement in countries such as Cameroon and Malawi, offers less scope for price-oriented adjustment measures to bring about a large supply response.

While these generalizations are useful they have severe limits. The diverse experiences reinforce the need for a country-by-country analysis to identify the appropriate characteristics of externally financed adjustment that will most quickly achieve the dual objectives of correcting economic imbalances and raising living standards. In that regard the two primary roles of external resources must be carefully considered. First, by general financial support of reform, donors can ensure that government spending and investment be maintained or even increased and allocated more efficiently. This will fuel economic growth and represent an opportunity to raise the living standards of the poor. The second channel through which external financing can affect the poor is by providing more subsidies and transfer programs to raise consumption in the short term.

This dichotomy, often framed in terms of the direct versus indirect route to poverty reduction, has been persistently debated by development economists. Basically the discussion centers on the merits of creating new income versus redistributing existing income through subsidies, in-kind

payments, and so forth. The battle between these two perspectives is often fought on philosophical grounds rather than on the basis of economic empiricism or sound theoretical arguments.

On the one hand the sustained financing of investments in health, education, and other programs to directly raise incomes and consumption levels is predicated on the existence of a robust economy. On the other hand circumstances exist in which, regardless of the potential for economic expansion, low-income groups could be imperilled in the short-term by reductions in, for example, consumer subsidies. If properly targeted and of a short-term nature, programs to protect selected lower-income groups may be desirable.

The optimal mix of the growth-oriented indirect path and the targeted direct path to alleviate poverty must be determined on a country-by-country basis. It is important, however, not to confuse the use of scarce financial resources to support investment and economic growth rather than direct subsidies to the poor with an approach to development where the benefits are not broad based and do not provide equitable opportunities for all economic agents in the society. A growth-oriented adjustment program should emphasize an approach to development that includes the poor as well as the other groups in society. Ideally, this can be achieved by policies that promote the redistribution of assets and investment in human capital. Policies may need to be designed toward raising the returns to factors owned and controlled by the poor while attempting to redirect constrained budgetary resources toward services used by low-income households. Thus the marked distinction between a laissez-faire approach to development and active public policy designed to promote growth while improving the living standards of low-income groups must be recognized. Thoughtful and rigorous policy analysis is essential for policy reforms that improve the incomes and consumption level of the poor.

Even if rapid increases in growth materialize following the institution of a package of reforms designed to raise productivity and output, there may be particular groups of households that have been adversely affected by the economic crisis and/or that will not benefit in the short term from reform. Such families require short- and medium-term attention to ensure adequate access to food and services that promote human resource development. Therefore targeted interventions designed specifically to assist the poor must remain on research and policy agenda despite the need to improve macroeconomic performance. If scarce financial resources are used to support transfer programs a number of other perils must be acknowledged besides

the risk of lost growth opportunities. First is the particular difficulty of targeting vulnerable groups in SSA. This is a major constraint to designing and implementing cost-effective social welfare and poverty programs, especially in SSA with its limited physical infrastructure and inadequate information systems. Second, those who may suffer the most following structural reforms (e.g., rent seekers, civil servants) are not the most deprived elements of the society or those that were most negatively affected by the economic decline that predated the reform policies. Third, compensation measures must not become a hidden agenda for maintaining distortions and disequilibria (e.g., larger budget deficits) or perpetuating policies (e.g., patronage) that are incongruous with the overall objectives of the adjustment program.

The fourth issue is that, by definition, compensatory welfare programs are of limited duration, presumably until adjustment begins to fuel economic growth. However, problems arise with this concept of assisting the poor in the short term. In particular, the short term may extend over long period. Achievements resulting from economic recovery programs are measured in years and maybe even more appropriately in decades. Even if the fruits of the adjustment process do rapidly trickle down to the poor, poverty alleviation is a long-term proposition. Thus a rational, affordable approach to developing human resources and social infrastructure is necessary. It must be integrated into a reform process that places a premium on equity and the optimal allocation of resources, and on fostering economic growth so that such efforts can eventually be self-financing.

It is somewhat ironic that structural adjustment may present an opportunity to restore poverty issues to prominence in the dialogue on development. New possibilities exist for integrating welfare concerns into long-term strategic planning and policy formulation. This implies, however, that poverty issues should not be defined, as they increasingly are, in terms of adjustment. To do so could mean the neglect of the more persistent structural, social, and economic constraints to poverty alleviation. Nonetheless the adjustment process should endeavor to identify short-term, low-cost (at least in terms of the budget) initiatives such as reorienting subsidies and social expenditures toward primary services and reducing economic rents that accrue to those with access to foreign exchange, food, and productive inputs.

In sum, to confuse the association between the process of adjustment and the economic crisis is to do a great disservice. The fact remains that Africa's economic stagnation is largely responsible for low levels of income, govern-

ment revenues, public and private sector investment, and resulting poverty. Stagnation did not arise from structural adjustment, and the financing for economic recovery programs is crucial for the future of most recipient countries.

APPENDIX 1
SUPPLEMENTAL TABLES AND FIGURES

Appendix Table 1 – Government Budget Surpluses (deficits) as a Percent of GDP

Country	1973	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-80	1981-84	1985-87
Benin	–	–	–	-11.5	-8.2	-11.2	-11.0	-10.4	-6.9	-5.4	–	-11.5	-10.2	-6.2
Botswana	0.2	-7.4	-5.8	-2.4	-6.3	-2.5	9.8	14.5	24.9	24.6	–	-3.7	3.9	24.8
Burkina Faso	0.3	0.7	-2.2	0.3	-1.4	-1.7	0.1	-0.9	1.7	1.3	-1.0	0.1	-1.0	0.7
Burundi	0.6	0.0	0.1	-3.8	-2.1	-1.4	-0.9	0.2	-0.1	2.5	-1.1	-0.1	-1.1	0.4
Cameroon	–	0.4	2.8	0.5	-3.3	-2.5	1.3	1.7	0.8	0.6	-3.4	-0.2	-0.7	-0.7
Central Afr. Rep.	–	–	–	–	-6.4	-1.3	-2.0	-1.4	-1.3	-1.4	–	–	-2.8	-1.3
Congo	–	–	–	-5.9	-1.9	-13.4	-3.2	-3.3	-1.3	-11.5	-10.9	-5.9	-5.5	-7.9
Cote d'Ivoire	–	–	–	-10.5	-11.9	-14.2	-10.6	-3.2	-3.6	–	–	-10.5	-10.0	-3.6
Ethiopia	-1.0	-5.8	-3.2	-4.5	-3.8	-8.2	-16.1	-7.8	-10.8	-9.8	-9.7	-3.5	-9.0	-10.1
Gabon	-10.9	–	-0.5	6.1	0.8	3.0	-1.2	0.2	0.1	-8.9	-13.2	-6.6	0.7	-7.3
Gambia	-0.3	-9.9	-9.0	-4.4	-12.2	-7.5	-7.5	-13.8	-17.6	-9.1	-22.1	-4.8	-10.3	-16.3
Ghana	-5.6	-10.2	-6.8	-4.6	-7.2	-5.8	-2.7	-1.6	-2.2	0.1	0.5	-7.7	-4.3	-0.5
Guinea	–	–	–	-5.1	-4.5	-6.1	-10.3	-4.1	-24.6	-9.6	–	-5.1	-6.2	-17.1
Guinea-Bissau	–	–	–	-57.4	-40.6	-45.9	-38.7	-46.5	-50.1	-41.0	-42.5	-57.4	-42.9	-44.5
Kenya	-4.3	-2.2	-5.3	-2.2	-6.7	-6.8	-2.1	-3.2	-3.9	-5.0	-7.4	-3.9	-4.7	-5.5
Lesotho	9.9	–	–	-20.8	-22.1	-7.5	-5.0	-2.7	-4.9	-6.2	-9.6	-6.7	-9.3	-6.9
Liberia	2.5	-7.4	-16.5	-9.7	-10.8	-10.8	-9.5	-5.7	-8.2	-8.7	-8.9	-4.4	-9.2	-8.6
Malawi	-5.5	-9.2	-8.6	-15.7	-12.2	-7.5	-7.1	-5.1	-8.0	-9.4	-7.5	-8.3	-8.0	-8.3
Mali	–	-1.8	-3.5	-5.3	-3.9	-7.7	-8.2	-7.4	-18.2	-13.1	-9.2	-2.7	-6.8	-13.5
Mauritania	–	-3.0	-2.9	-29.0	-17.3	-22.1	-23.6	-23.0	-28.7	-10.2	-10.4	-9.2	-21.5	-16.4
Mauritius	-1.6	-12.6	-12.4	-10.6	-13.2	-12.2	-5.1	-1.9	0.7	2.8	0.5	-7.9	-8.1	1.3
Niger	–	–	–	-4.7	-10.9	-7.0	-8.8	-10.6	-9.1	-8.1	-9.4	-4.7	-9.3	-8.9
Nigeria	3.7	6.0	6.7	18.5	3.5	-7.4	-9.6	-4.1	-2.5	-3.4	-8.8	4.4	-4.4	-4.9
Rwanda	-1.6	-1.6	-1.7	-1.7	-7.6	-7.7	-8.4	-6.5	-7.2	-8.1	-10.8	-1.2	-7.6	-8.7
Senegal	-2.7	0.3	-0.7	0.9	-3.4	-6.5	-6.1	-8.3	-5.4	-4.6	-4.1	-1.0	-6.1	-4.7
Seychelles	-5.5	-4.8	–	-12.0	-11.4	-16.9	-14.3	-15.4	-16.4	-21.7	-18.4	-2.8	-14.5	-18.8
Sierra Leone	-3.8	-9.3	-10.3	-11.5	-7.5	-8.9	-9.9	-7.6	-9.9	-14.3	-11.9	-8.1	-8.5	-12.0
Somalia	-1.0	-8.6	--	-13.9	-7.7	-11.3	-7.5	-8.8	-14.6	–	–	-5.0	-8.8	-14.6

(continued)

Appendix Table 1 (continued)

Country	1973	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-80	1981-84	1985-87
Sudan	-1.3	-4.7	-3.4	-2.6	-4.7	-4.2	-6.3	-11.2	-22.2	-18.3	-16.1	-3.1	-6.6	-18.9
Swaziland	-6.6	-11.7	1.0	5.5	-8.9	-5.7	-3.2	-0.5	-3.3	-5.1	-3.0	-1.2	-4.6	-3.8
Tanzania	-2.9	-6.0	-11.7	-9.9	-7.7	-9.9	-6.6	-5.5	-6.5	-5.6	-9.2	-7.0	-7.4	-7.1
Togo	–	-31.1	-8.4	-2.0	-5.7	-1.8	-2.0	-2.6	-1.8	-4.6	-6.5	-16.2	-3.0	-4.3
Uganda	-6.6	-0.3	-5.4	-3.9	-7.4	-4.9	-2.8	-3.4	-4.8	-4.5	-3.0	-5.7	-4.6	-4.1
Zaire	-9.4	-10.9	-4.9	-1.9	-9.1	-11.2	-2.8	-3.8	7.1	1.1	-16.4	-11.2	-6.7	-2.7
Zambia	-16.7	-14.4	-9.1	-18.5	-12.9	-18.6	-7.8	-8.4	-14.9	-28.2	-14.9	-13.0	-11.9	-19.3
Zimbabwe	–	-10.7	-10.4	-10.9	-5.9	-10.5	-6.3	-10.1	-7.0	-7.1	-10.0	-8.4	-8.2	-8.1
Average	–	–	–	-7.6	-8.4	-9.0	-7.1	-6.4	-7.8	-7.3	–	-7.0	-7.8	-8.0
Oil exporting	–	–	–	1.5	-1.8	-6.3	-4.8	-3.2	-2.0	-5.7	–	-2.1	-1.5	-4.3
Non-oil exporting	–	–	–	-9.1	-9.5	-9.5	-7.5	-7.0	-8.7	-7.6	–	-7.5	-8.4	-8.4
CFA	–	–	–	-4.7	-6.5	-6.4	-6.1	-5.6	-5.6	-5.1	–	-6.6	-6.1	-5.2
Non-CFA	–	–	–	-8.3	-8.9	-9.8	-7.4	-6.7	-8.4	-7.9	–	-7.1	-8.2	-8.8
West	–	–	–	-9.1	-9.5	-11.0	-10.6	-10.0	-12.5	-9.3	–	-9.2	-10.2	-10.7
South	–	–	–	-10.5	-11.4	-8.7	-3.3	-2.0	-2.2	-5.2	–	-6.9	-6.4	-3.6
East	–	–	–	-6.2	-6.3	-7.5	-6.9	-6.6	-10.5	-8.6	–	-4.7	-6.8	-10.0
Central	–	–	–	-1.1	-4.2	-4.9	-2.5	-1.9	-0.3	-3.6	–	-4.2	-3.4	-4.0
Islands	–	–	–	-11.3	-12.3	-14.6	-9.7	-8.6	-7.9	-9.5	–	-5.3	-11.3	-8.7
Low income	–	–	–	-9.7	-9.4	-9.4	-8.2	-8.1	-10.5	-8.8	–	-8.1	-8.8	-10.0
Middle income	–	–	–	-2.2	-5.8	-8.2	-4.2	-2.2	-0.8	-3.3	–	-4.3	-5.1	-2.9

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Appendix Table 2 – Growth Rates of GDP per Capita

Country	1973	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-80	1981-84	1985-87
Angola	3.7	2.4	-0.3	1.0	-4.4	3.2	-0.6	0.4	3.2	–	–	-5.7	-0.3	3.2
Benin	0.8	-1.1	3.5	3.3	5.7	3.4	-5.2	-1.1	3.0	-3.4	-5.9	0.0	0.7	-2.1
Botswana	17.5	12.7	6.8	9.1	4.7	-5.6	19.8	16.1	2.3	8.5	1.1	7.6	8.7	4.0
Burkina	-1.5	2.6	2.4	-2.0	2.3	-0.1	-2.9	-2.7	7.8	-0.4	-0.2	1.7	-0.9	2.4
Burundi	6.5	-3.4	-0.5	0.7	8.7	-5.3	-2.9	0.3	1.2	1.9	-1.1	1.9	0.2	0.7
Cameroon	3.0	11.7	10.5	12.2	9.9	0.5	5.1	4.6	6.0	6.3	-5.3	6.3	5.0	2.3
Cape Verde	-1.4	9.5	9.9	3.6	3.5	12.4	3.7	1.3	4.0	2.9	3.2	2.4	5.2	3.4
Cent. African Rep.	0.4	0.3	-4.9	-6.8	-4.5	5.1	-8.7	6.3	1.4	-1.0	0.2	-0.7	-0.4	0.2
Chad	-9.8	-2.2	-21.5	-5.0	-0.6	0.8	2.0	-6.2	32.6	-7.2	-1.9	-3.3	-1.0	7.8
Congo	5.3	2.5	6.1	13.6	19.6	9.0	-0.1	1.8	-6.9	-10.3	-0.4	2.9	7.5	-5.9
Côte d'Ivoire	0.3	9.5	-1.0	-4.6	0.3	-2.2	-4.9	-8.0	5.1	-0.3	-6.6	1.2	-3.7	-0.6
Ethiopia	0.7	-2.9	5.0	3.3	0.6	-0.8	2.5	-5.3	-10.2	3.5	3.3	0.3	-0.7	-1.1
Gabon	6.0	-29.2	-2.8	-0.2	-9.2	-2.9	-3.7	2.4	3.1	-7.5	-13.0	3.4	-3.3	-5.8
Gambia	2.1	-5.7	2.0	-0.6	-8.8	6.8	10.7	-9.0	-13.3	13.5	4.0	2.2	-0.1	1.4
Ghana	-1.0	8.0	-3.0	-0.6	-4.2	-8.2	-10.4	2.9	1.3	0.8	1.4	-1.5	-5.0	1.2
Guinea	0.5	1.2	-1.8	1.4	-1.3	-0.2	-0.8	-6.6	0.1	1.8	3.5	2.1	-2.2	1.8
Guinea-Bissau	-0.5	11.7	-1.2	-20.7	16.2	2.0	-5.4	3.1	2.1	-3.0	3.3	-2.4	4.0	0.8
Kenya	1.7	2.5	0.9	1.1	-0.1	-3.1	-2.4	-2.1	-0.4	2.0	0.8	0.8	-1.9	0.8
Lesotho	23.6	15.5	0.4	-1.8	-3.9	-1.6	-6.7	5.8	-0.9	0.0	0.5	7.3	-1.6	-0.1
Liberia	-5.5	1.9	0.0	-7.5	-4.3	-5.1	-4.7	-4.8	-3.9	-4.8	–	-1.6	-4.7	-4.3
Madagascar	-4.5	-5.6	6.6	-1.8	-11.7	-4.0	-1.8	-1.1	-0.8	-2.0	-0.9	-1.6	-4.7	-1.2
Malawi	0.4	6.9	2.3	-2.3	-8.9	-0.5	0.7	2.3	1.3	-1.9	-2.7	2.0	-1.6	-1.1
Mali	-5.5	-5.0	8.2	-3.7	2.0	4.0	-7.0	-0.9	-2.9	7.6	1.7	2.0	-0.5	2.1
Mauritania	-8.8	-2.8	2.0	1.3	1.1	-4.6	2.0	-6.8	0.1	2.5	-0.1	-0.8	-2.1	0.8
Mauritius	11.2	4.1	3.7	-10.9	3.2	3.9	-0.2	2.9	5.2	7.5	6.7	4.3	2.4	6.5
Mozambique	–	–	–	–	-2.4	-5.8	-14.8	-0.9	-11.4	-1.1	1.1	–	-6.0	-3.8
Niger	-19.8	9.3	3.0	1.5	-2.2	-4.0	-5.7	-18.8	2.2	3.5	-7.9	-0.4	-7.7	-0.7
Nigeria	2.8	-8.3	3.9	0.1	-9.5	-3.5	-9.5	-9.6	6.2	-2.2	-6.8	1.2	-8.0	-0.9

(continued)

Appendix Table 2 (continued)

Country	1973	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-80	1981-84	1985-87
Rwanda	-2.6	5.6	6.3	6.5	5.0	-2.2	-3.5	-9.2	3.7	1.3	–	1.9	-2.5	2.5
Senegal	-8.2	-8.7	6.2	-5.9	-3.4	11.6	-0.3	-7.1	0.7	1.5	1.2	-1.2	0.2	1.1
Sierra Leone	1.3	-2.1	5.3	1.2	3.5	-0.3	-3.7	-0.8	-4.8	-5.7	-4.3	0.5	-0.3	-4.9
Somalia	-4.2	-0.5	-20.9	-18.8	-2.7	1.6	-0.5	-3.4	6.6	–	–	-3.8	-1.3	6.6
Sudan	-11.2	-4.8	-13.5	-2.5	-1.1	4.2	0.2	-7.1	-16.6	2.3	-0.8	1.4	-1.0	-5.0
Swaziland	8.2	10.3	-3.5	-8.0	3.6	-1.4	-3.8	1.0	0.0	4.3	-0.2	0.2	-0.2	1.4
Tanzania	2.0	-1.7	0.1	1.1	-4.4	-2.2	-4.6	-1.0	0.9	0.8	1.2	-0.1	-3.1	1.0
Togo	1.2	7.4	-7.6	11.2	-6.2	-6.2	-8.5	-2.5	0.2	0.5	0.3	1.8	-5.9	0.3
Uganda	-0.6	-9.3	-18.0	-7.4	6.9	10.2	4.3	-9.0	-9.4	-9.8	0.2	-5.7	3.1	-6.3
Zaire	5.2	-7.8	-3.1	-0.4	0.4	-5.7	-1.7	0.3	-0.4	-2.7	-0.2	-2.8	-1.7	-1.1
Zambia	-3.8	-2.2	-5.8	0.1	2.7	-6.4	-5.8	-4.1	-2.0	-3.1	-3.9	-2.1	-3.4	-3.0
Zimbabwe	-0.1	2.9	3.4	1.7	12.5	-4.0	2.6	-7.7	5.3	-1.6	-3.5	-1.2	0.8	0.1
Average	0.4	0.9	-0.3	-1.0	0.5	-0.2	-1.9	-2.1	0.5	0.1	-0.9	0.5	-0.9	-0.1
Oil exporting	3.6	-3.7	3.5	5.0	2.0	1.6	-2.3	-0.2	2.4	-3.4	-6.3	1.3	0.3	-2.4
Non-oil exporting	-0.2	1.7	-1.0	-2.0	0.2	-0.5	-1.9	-2.4	0.2	0.7	0.0	0.4	-1.2	0.3
CFA	-2.3	-0.2	0.2	1.1	1.1	1.6	-3.3	-2.7	4.4	-0.9	-3.2	1.1	-0.8	0.1
Non-CFA	1.6	1.4	-0.5	-1.9	0.2	-0.9	-1.3	-1.9	-1.1	0.6	0.2	0.2	-1.0	-0.1
West	-3.2	1.0	0.0	-1.9	-0.6	-0.4	-3.4	-4.9	2.3	0.3	-1.2	0.1	-2.3	0.5
South	7.1	6.9	0.5	0.0	0.5	-2.8	-1.1	1.6	-0.3	0.7	-1.1	1.1	-0.4	-0.2
East	-1.9	-2.8	-7.7	-3.8	-0.1	1.6	-0.1	-4.7	-4.9	-0.2	1.0	-1.2	-0.8	-1.4
Central	3.4	-2.9	1.7	3.7	4.3	-0.2	-2.2	0.9	1.2	-1.7	-3.3	1.8	0.7	-1.3
Islands	1.8	2.6	6.7	-3.0	-1.7	4.1	0.5	1.0	2.8	2.8	3.0	1.7	1.0	2.9
Low income	-1.1	0.9	-1.4	-2.0	-0.3	-0.2	-2.8	-2.8	-0.2	0.1	-0.1	0.0	-1.5	-0.1
Middle income	5.5	0.9	3.4	2.5	3.0	-0.2	0.9	0.3	3.3	0.1	-3.5	2.2	1.0	0.0

Sources: Calculated from the data tapes of the IMF's Government Financial Statistics and the World Bank's Africa Tables.

Appendix Table 3 – Daily Calorie Consumption per Capita

Country	1973	1980	1981	1982	1983	1984	1985	Annual Averages			Ave. Annual Growth Rates		
								1973-80	1981-83	1984-85	1973-80	1981-83	1984-85
Benin	2,098	2,100	2,086	2,082	1,986	2,173	2,248	2,106	2,051	2,211	-0.13	-1.82	6.43
Botswana	2,104	2,144	2,167	2,178	2,114	2,219	2,159	2,121	2,153	2,189	0.13	-0.45	1.13
Burkina Faso	1,788	2,030	2,059	2,022	1,958	1,924	2,003	1,963	2,013	1,964	1.27	-1.18	1.18
Burundi	2,369	2,304	2,426	2,424	2,300	2,116	2,233	2,328	2,383	2,175	1.02	0.03	-1.24
Cameroon	2,217	2,161	2,169	2,050	2,052	2,089	2,080	2,231	2,090	2,085	-0.48	-1.67	0.69
Congo	2,244	2,473	2,450	2,538	2,536	2,549	2,511	2,331	2,508	2,530	0.99	0.86	-0.49
Côte d'Ivoire	2,303	2,612	2,596	2,601	2,530	2,505	2,308	2,389	2,576	2,407	1.38	-1.05	-4.43
Ethiopia	1,584	1,821	1,780	1,704	1,689	1,681	1,704	1,637	1,724	1,693	1.85	-2.47	0.45
Gabon	1,821	2,252	2,238	2,362	2,415	2,440	2,448	2,067	2,338	2,444	2.48	2.39	0.68
Gambia	2,139	2,154	2,218	2,259	2,217	2,217	2,252	2,150	2,231	2,235	-0.10	0.99	0.79
Ghana	2,199	1,796	1,709	1,602	1,504	1,747	1,785	2,030	1,605	1,766	-2.36	-5.74	9.17
Kenya	2,257	2,196	2,173	2,188	2,120	2,151	2,214	2,240	2,160	2,183	-0.50	-1.15	2.20
Lesotho	1,902	2,398	2,297	2,329	2,381	2,358	2,299	2,19-	2,336	2,329	2.77	-0.20	-1.73
Liberia	2,216	2,375	2,373	2,374	2,343	2,311	2,373	2,326	2,363	2,342	0.78	-0.45	0.66
Madagascar	2,429	2,517	2,523	2,482	2,481	2,469	2,452	2,500	2,495	2,461	0.11	-0.48	-0.59
Malawi	2,469	2,452	2,488	2,446	2,423	2,448	2,415	2,488	2,452	2,432	0.51	-0.39	-0.16
Mali	1,713	1,720	1,778	1,800	1,780	1,788	1,810	1,753	1,786	1,799	-0.01	1.17	0.84
Mauritius	2,416	2,715	2,740	2,705	2,707	2,740	2,717	2,614	2,717	2,729	1.68	-0.09	0.19
Niger	1,943	2,345	2,422	2,319	2,268	2,250	2,276	2,123	2,336	2,263	2.39	-1.06	0.18
Nigeria	2,081	2,253	2,263	2,233	2,004	2,038	2,139	2,147	2,167	2,089	0.86	-3.71	3.33
Rwanda	1,856	2,011	2,128	2,173	2,184	1,919	1,935	1,958	2,162	1,927	1.16	2.81	-5.65
Senegal	2,237	2,394	2,391	2,358	2,258	2,342	2,418	2,305	2,336	2,380	0.63	-1.92	3.48
Sierra Leone	1,895	2,035	2,037	2,020	1,900	1,817	1,784	1,975	1,986	1,801	0.52	-2.23	-3.09
Somalia	1,988	2,083	2,067	2,035	2,030	2,072	2,074	2,005	2,044	2,073	-0.13	-0.85	1.08
Sudan	2,029	2,354	2,367	2,214	2,105	1,737	2,168	2,185	2,229	1,953	1.54	-3.61	3.67
Swaziland	2,364	2,476	2,536	2,542	2,554	2,575	2,556	2,451	2,544	2,566	1.14	1.04	0.04
Tanzania	1,944	2,461	2,421	2,348	2,291	2,335	2,316	2,291	2,353	2,326	3.24	-2.36	0.55

(continued)

Appendix Table 3 (continued)

Country	1973	1980	1981	1982	1983	1984	1985	Annual Averages 1973-80	Annual Averages 1981-83	Annual Averages 1984-85	Ave. Annual Growth Rates 1973-80	Ave. Annual Growth Rates 1981-83	Ave. Annual Growth Rates 1984-85
Togo	2,130	2,218	2,262	2,201	2,150	2,236	2,221	2,105	2,204	2,229	0.45	-1.01	1.66
Uganda	2,258	2,184	2,227	2,278	2,308	2,083	2,483	2,227	2,271	2,283	-0.46	1.86	4.73
Zaire	2,302	2,124	2,142	2,165	2,156	2,154	2,151	2,224	2,154	2,153	-0.81	0.50	-0.12
Zambia	2,202	2,227	2,152	2,112	2,104	2,137	2,126	2,274	2,123	2,132	-0.20	-1.87	0.53
Zimbabwe	2,173	2,119	2,078	2,064	2,084	2,054	2,144	2,133	2,075	2,099	-0.77	-0.55	1.47
Average	2,097	2,205	2,218	2,195	2,157	2,154	2,185	2,154	2,190	2,169	0.58	-0.73	0.64
Oil exporting	2,078	2,235	2,220	2,185	2,105	2,164	2,181	2,177	2,170	2,172	0.42	-1.93	1.80
Non-oil exporting	2,101	2,201	2,218	2,196	2,164	2,153	2,185	2,151	2,193	2,169	0.61	-0.58	0.49
CFA	2,068	2,194	2,211	2,189	2,120	2,159	2,168	2,118	2,173	2,163	0.65	-1.13	1.13
Non-CFA	2,104	2,208	2,281	2,257	2,224	2,213	2,249	2,221	2,254	2,231	0.57	-0.55	0.55
West	2,004	2,118	2,114	2,072	2,006	2,038	2,077	2,045	2,064	2,057	0.37	-1.35	1.74
South	2,150	2,225	2,174	2,153	2,135	2,147	2,119	2,174	2,154	2,133	0.34	-0.83	-0.38
East	2,010	2,183	2,173	2,128	2,091	2,010	2,160	2,098	2,130	2,085	0.83	-1.43	1.80
Central	2,163	2,208	2,235	2,263	2,239	2,188	2,202	2,191	2,245	2,195	0.43	0.47	-0.80
Islands	2,315	2,555	2,588	2,574	2,565	2,582	2,576	2,428	2,576	2,579	1.38	0.13	0.22
Low income	2,069	2,163	2,180	2,150	2,112	2,102	2,146	2,121	2,147	2,124	0.51	-0.78	0.82
Middle income	2,183	2,334	2,332	2,329	2,294	2,312	2,300	2,253	2,319	2,306	0.79	-0.57	0.14

Source: World Bank Social Indicators Tables.

Appendix Table 4 — Real Terms of Trade Expressed as Indices (1980=100)

Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-1980	Annual Averages 1981-1984	Annual Averages 1985-1987	Average Annual Percentage Change 1973-1980	Average Annual Percentage Change 1981-1984	Average Annual Percentage Change 1985-1987
Benin	125	108	117	177	116	94	124	152	128	115	100	102	92	95	97	92	74	87	123	97	84	-5.57	-0.92	-2.38
Botswana	180	159	158	163	120	11	113	104	102	105	100	98	98	98	97	97	100	101	129	98	99	-6.49	-0.77	1.36
Burkina Faso	161	158	155	178	108	94	119	110	107	108	100	89	83	95	95	82	69	88	127	91	80	-7.38	-1.74	-0.67
Burundi	169	110	111	105	75	69	103	225	137	127	100	82	92	90	101	99	117	73	123	91	96	-7.12	-0.60	-7.14
Cameroon	119	98	97	114	93	79	117	147	120	104	100	98	96	94	96	92	60	56	108	96	69	-1.80	-1.04	-15.21
Cent. Afr.Rep.	100	92	90	98	86	73	103	115	96	104	100	88	90	89	95	87	86	84	96	91	86	-0.02	-1.56	-3.97
Congo	83	81	71	42	70	64	69	72	67	74	100	106	101	96	97	94	57	64	72	100	72	0.12	-0.87	-10.06
Côte d'Ivoire	106	88	89	96	93	80	115	146	122	118	100	85	87	92	99	94	92	88	105	91	91	-0.22	-0.71	-3.84
Ethiopia	142	120	126	140	88	82	142	198	132	132	100	84	90	92	102	100	127	87	127	92	105	-8.48	-0.10	-2.15
Gabon	28	29	36	35	70	62	66	64	61	72	100	107	102	95	95	90	56	64	57	100	70	9.44	-1.43	-9.59
Gambia	150	138	145	209	141	113	124	132	125	107	100	104	86	92	92	110	77	98	135	94	95	-7.11	-2.64	5.61
Ghana	107	80	102	113	100	82	114	159	139	135	100	81	73	88	98	90	88	89	112	85	89	-2.59	-1.79	-3.08
Kenya	92	82	97	104	104	97	114	136	107	107	100	92	90	94	104	93	100	90	104	95	94	-0.44	0.74	-4.35
Lesotho	137	117	121	139	108	100	100	95	100	103	100	97	96	96	90	98	84	83	111	93	88	-3.01	-2.70	-2.20
Liberia	181	154	136	155	116	116	122	118	102	108	100	85	94	93	93	90	97	94	128	91	94	-4.75	-2.29	0.49
Madagascar	125	111	119	120	96	93	129	159	125	120	100	87	94	95	100	103	108	83	118	94	98	-4.00	-0.36	-5.10
Malawi	126	140	129	124	113	118	110	118	105	101	100	94	93	95	97	88	88	81	117	95	86	-3.42	-0.82	-5.74
Mali	180	172	169	182	112	101	129	120	120	106	100	93	83	93	93	82	74	85	135	91	80	-8.92	-2.21	-2.24
Mauritania	253	189	160	122	131	133	133	126	102	104	100	92	103	99	98	96	87	85	141	98	89	-6.74	-0.77	-4.57
Mauritius	96	89	101	93	122	153	111	89	90	83	100	91	81	86	88	77	99	98	102	87	91	-2.18	-3.54	5.02
Niger	157	164	170	150	125	128	134	125	135	122	100	100	104	107	100	99	94	83	137	103	92	-7.37	-0.09	-5.92
Nigeria	22	20	19	22	65	58	63	64	57	71	100	109	101	97	97	89	44	48	51	101	60	14.21	-0.95	-16.57
Rwanda	141	119	129	136	96	90	138	167	118	120	100	85	92	91	101	101	133	92	123	92	105	-6.36	-0.31	-2.22
Senegal	114	106	110	103	128	118	114	113	101	100	100	102	98	99	101	97	87	90	110	100	91	-1.63	0.22	-3.61
Sierra Leone	123	120	114	119	115	98	112	135	114	113	100	93	92	94	99	95	93	89	115	95	92	-2.42	-0.36	-3.48
Sudan	148	142	142	175	122	94	123	112	103	99	100	96	86	99	96	86	70	83	124	94	80	-6.55	-1.45	-3.48
Tanzania	107	99	95	119	108	93	126	140	115	115	100	85	88	91	96	91	104	90	111	90	95	-0.84	-1.43	-1.46
Togo	100	90	85	93	177	145	125	117	99	93	100	102	93	88	92	86	86	77	111	94	83	-0.94	-2.26	-5.66
Uganda	109	90	90	97	80	71	164	213	147	131	100	81	89	89	100	96	116	67	117	90	93	-4.39	-0.87	-8.47
Zaire	215	140	121	176	150	97	110	109	99	109	100	84	79	84	84	82	89	73	130	83	78	-4.97	-4.86	-4.52
Zambia	314	188	165	240	172	101	111	96	91	108	100	80	71	78	70	72	70	79	153	75	74	-10.37	-10.03	4.31
Zimbabwe	178	149	139	147	117	111	124	117	106	104	100	92	87	95	96	89	86	91	127	93	89	-4.68	-1.25	-1.62

(continued)

Appendix Table 4 (continued)

Country	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	Annual Averages 1973-1980	Annual Averages 1981-1984	Annual Averages 1985-1987	Average Annual Percentage Change 1973-1980	Average Annual Percentage Change 1981-1984	Average Annual Percentage Change 1985-1987
Average	137	117	116	128	110	98	117	127	108	107	100	93	91	93	96	92	88	82	112	93	87	-1.12	-1.03	-4.91
Oil exporting	63	57	56	53	75	66	79	87	76	80	100	105	100	96	96	91	54	58	77	99	68	8.92	-0.87	-12.94
Non-oil exptng	148	126	125	138	115	102	122	133	113	111	100	91	89	93	96	92	92	86	117	92	90	-1.90	-1.01	-3.51
CFA	130	122	123	135	118	104	120	125	113	108	100	95	91	95	97	90	83	85	115	94	86	-2.11	-0.82	-3.92
Non-CFA	139	115	113	125	107	95	116	128	107	107	100	92	91	93	95	92	89	81	111	93	88	-0.75	-1.10	-5.17
West	137	122	121	132	117	105	118	124	112	107	100	95	91	95	96	92	82	85	114	94	86	-1.94	-0.83	-4.04
South	187	151	142	163	126	109	112	106	101	105	100	92	89	92	90	89	86	87	115	91	87	-3.74	-2.51	-1.10
East	120	107	110	127	100	87	134	160	121	117	100	88	89	93	100	93	103	83	118	92	93	1.50	0.20	-4.94
Central	122	96	94	101	91	76	107	126	100	101	100	93	93	91	96	92	84	71	100	93	82	2.39	-1.03	-9.35
Islands	111	100	110	107	109	123	120	124	108	102	100	89	88	91	94	90	104	91	111	90	95	-0.93	-1.35	-0.61
Low income	150	126	125	142	115	100	124	136	114	112	100	91	90	93	95	92	92	84	118	92	89	-1.75	-1.02	-4.12
Middle income	104	93	92	92	96	91	99	104	93	94	100	98	94	94	96	91	76	78	96	95	82	1.29	-0.99	-6.53

Source: World Bank's world tables data tapes.

Appendix Table 5 – Models Predicting the Effect of GDP on Total Expenditures (net of interest payments)

Independent Variable	Dependent Variable	
	Total Expenditures/GDP	Total Expenditures
ln GDP	10.50361	1.42302
	(4.010)	(12.969)
ln (GDP * 1980-84)	-11.75117	-0.43077
	(2.908)	(2.532)
ln (GDP * 1985-87)	-o.48561	-0.09046
	(1.301)	(0.435)
R^2	0.04734	0.46334

Notes: Figures in parentheses are t-statistics.
Total expenditures / GDP = 26.76.

Appendix Table 6 – Models Predicting the Effect of GDP and Total Expenditures (net of interest payments) on Health and Education Expenditures

Independent Variable	Dependent Variable			
	Health Exp/ Total Exp	Education Exp/ Total Exp	Health Exp/ GDP	Education Exp/ GDP
ln Total exp	-1.895	-3.11	–	–
	(6.05)	(2.76)		
ln (Total exp. * 1980-84)	0.157	-1.47	–	–
	(0.31)	(0.81)		
ln (Total exp * 1985-87)	1.689	4.37	–	–
	(2.98)	(2.14)		
ln GDP	–	–	0.234	1.700
			(1.59)	(3.44)
ln (GDP * 1980-84)	–	–	0.100	-0.937
			(0.29)	(0.865)
ln (GDP * 1985-87)	–	–	0.146	-1.388
			(0.56)	(1.67)
R^2	0.17	0.06	0.01	0.04

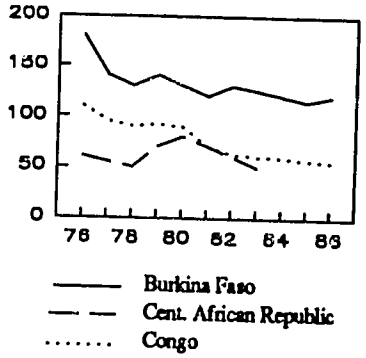
Notes: Figures in parentheses are t-statistics. Sample means are as follows:
Health exp/Total exp = 5.82. Health exp/GDP = 1.40.
Education exp/Total exp = 16.03. Education exp/GDP = 3.95.

Appendix Table 7 – Exchange Rates Expressed as Indices (decrease indicates a devaluation)

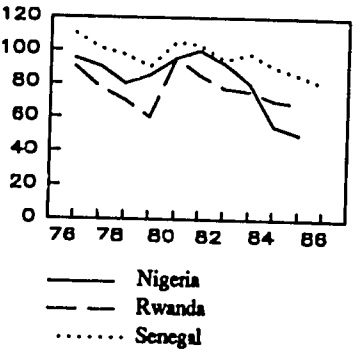
Country	1970-72	1978-80	1981-83	1984-85	1986-87	1988-89
Botswana	–	101.7	100.3	94.,7	87.5	85.45
Burkina Faso	103.1	96.7	88.4	82.9	80.5	77.35
Burundi	100.0	91.5	130.5	133.2	108.5	89.1
Cameroon	87.7	101.4	91.6	96.8	116.5	114.1
Central African Rep.	92.6	95.3	95.4	92.0	99.1	94.2
Congo	107.5	102.6	98.6	99.7	103.0	101.9
Côte d'Ivoire	74.1	94.6	79.7	72.2	87.9	85.65
Ethiopia	82.0	101.8	116.4	149.6	111.4	106.1
Gabon	81.3	98.7	88.9	85.5	95.0	79.7
Gambia	84.7	98.9	96.2	94.1	72.8	79.1
Ghana	36.1	98.4	229.3	62.4	26.8	21.65
Kenya	105.3	102.1	97.6	101.6	83.4	71.15
Lesotho	–	97.4	98.3	98.1	96.0	90.75
Liberia	103.1	96.9	113.8	123.9	103.9	104.4
Madagascar	97.1	94.3	110.1	94.2	72.8	50.1
Malawi	105.3	96.9	97.8	96.9	84.7	88.05
Mali	74.1	101.9	92.1	93.2	94.1	78.9
Mauritania	105.3	101.4	122.0	113.5	97.1	86.5
Niger	90.9	101.3	99.3	86.5	75.5	65.15
Nigeria	60.6	95.4	119.8	175.7	60.2	27.2
Senegal	95.2	102.5	91.1	98.8	108.7	97.65
Sierra Leone	133.3	98.4	144.1	197.2	126.4	119.9
Somalia	57.8	82.2	106.7	130.7	56.4	53.5
Sudan	102.0	100.0	92.4	103.1	95.9	119.65
Swaziland	–	100.0	102.3	95.6	87.7	83.85
Tanzania	92.6	97.3	151.7	188.2	103.8	51.3
Togo	92.6	100.0	96.1	82.5	86.9	78.5
Uganda	7.6	66.0	34.1	10.3	13.0	19.25
Zaire	54.6	120.9	101.7	43.4	38.4	36.6
Zambia	119.0	102.2	107.3	87.5	41.6	76.1
Zimbabwe	135.1	100.3	109.0	97.7	82.7	72.95
Average	88.6	97.9	106.5	102.6	83.5	77.6
Oil exporting	4.3	9.5	9.7	14.4	3.7	80.72
Non-oil exporting	9.3	7.6	07.6	00.9	2.0	77.14
CFA	89.9	99.5	92.1	89.0	94.7	87.31
Non-CFA	87.9	97.0	113.4	109.1	78.0	72.98
West	87.8	99.0	112.6	106.1	87.5	76.83
South	119.8	99.7	102.5	95.1	80.0	82.86
East	74.6	89.9	99.8	113.9	74.6	70.16
Central	87.3	101.7	101.1	91.8	93.4	85.93
Islands	97.1	94.3	110.1	94.2	72.8	50.1
Low income	87.9	97.4	109.2	102.7	81.2	76.61
Middle income	91.1	99.2	98.8	102.2	90.0	80.99

Source: IMF's Government Financial Statistics.

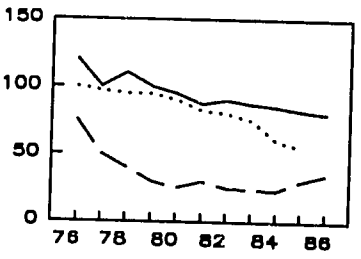
Appendix Figure 1 – Real Minimum Wage Expressed as Indices (1970=100)



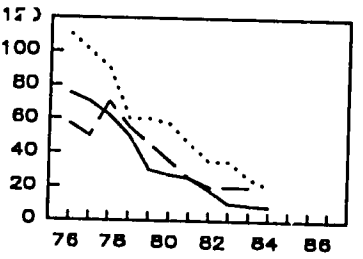
Burkina Faso
Cent. African Republic
Congo



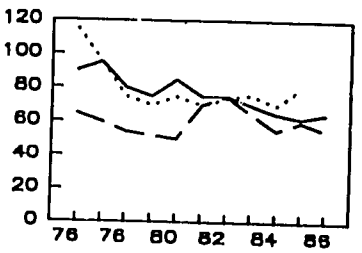
Nigeria
Rwanda
Senegal



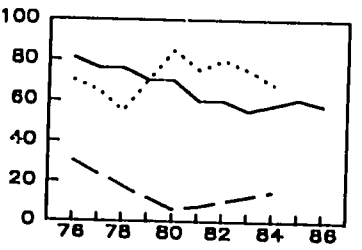
Cote d'Ivoire
Ghana
Guinea



Somalia
Sudan
Tanzania



Kenya
Malwai
Mali



Togo
Uganda
Zambia

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