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Policy Responses to External Shocks in Sub-Saharan African Countries

Bela Balassa,* *Johns Hopkins University and the World Bank*

The author analyzes the experience of sub-Saharan African countries with external shocks in the form of the deterioration of the terms of trade and the world recession between 1973 and 1978, with distinction made between low-income and middle-income countries. Adjustment to external shocks in low-income sub-Saharan African countries took largely the form of reductions in imports through lower rates of economic growth and lower income elasticity of import demand while these countries lost export market shares. Losses in export market shares were smaller in the middle-income countries and in the entire group, export performance was positively correlated with the rate of economic growth.

INTRODUCTION

The author earlier analyzed the balance-of-payments effects of external shocks, and of policy responses to these shocks, in newly industrializing and in less developed countries during the 1973–78 period (1981*a,b,c*). The external shocks in question include terms of trade effects, resulting in large part from the quadrupling of oil prices of 1973–74, as well as export shortfalls, resulting from the deceleration of the growth of world trade in the wake of the world recession of 1974–75. In turn, the policy responses comprise additional net external financing, export promotion, import substitution, and lowering the rate of economic growth.

Apart from India and Tanzania, the studies have not covered any developing country that is classified in the low-income group in *World*

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Development Report, 1982 (World Bank 1982).¹ Also, the studies have included only five middle-income sub-Saharan African countries, the Ivory Coast, Kenya, Mauritius, Nigeria, and Zambia, within a grand total of twenty-eight.²

The present article set out to analyze the experience of the countries of sub-Saharan Africa in the 1973–78 period of external shocks. This will be done by distinguishing oil-importing and oil-exporting countries and, within the former, middle-income and low-income countries.³ Further distinction will be made between the countries of Eastern and Western Africa.

The investigation covers 19 oil-importing and three oil-exporting countries. According to the geographical classification scheme used by the World Bank, ten of the oil-importing countries, Botswana, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Sudan, Tanzania, Zaire, and Zambia, are located in Eastern Africa. The nine oil-importing countries (Benin, Cameroon, Ghana, Ivory Coast, Mali, Niger, Senegal, Togo, and Upper Volta) and three oil-exporting countries (Congo, Gabon, and Nigeria) are in Western Africa.

In distinguishing between middle-income and low-income countries, 1970 income per head of 140 U.S. dollars as reported in the *1972 World Bank Atlas* has been used as the dividing line. The choice of the year 1970 has been dictated by the desire to avoid using an ex-post classification scheme that may reflect the effects of the policies followed during the period under consideration.

Utilizing this benchmark, Kenya, Mauritius, Sudan, and Zambia in Eastern Africa, as well as Cameroon, Ghana, Ivory Coast, Senegal, and Togo among oil-importing countries and all three oil-exporting countries in Western Africa, have been classified in the middle-income group. Low-income countries include Botswana, Ethiopia, Madagascar, Malawi, Tanzania, and Zaire, in Eastern Africa and Benin, Mali, Niger, and Upper Volta in Western Africa (Table 1).⁴

¹Only Tanzania belongs to the "least developed" country group as defined by the United Nations.

²On the classification scheme applied, see below.

³The experience of the countries of the region applying different development strategies as regards the role of the state in economic life and the extent of reliance on market forces are examined in Balassa, 1982.

⁴Among the countries of the former group, the United Nations classify Sudan as "least developed" while excluding from this category Madagascar and Zaire from among middle-income countries.

Table 1: Comparative Data^a for Twenty-two Sub-Saharan African Countries^b

	Per Capita GNP (\$U.S.)		Population 1979 (millions)	GNP 1979 (billions, \$U.S.)	Exports as % of GNP 1979	Export Composition, 1978				
	1970	1979				Agriculture as % 1979 GDP	Manufacturing	Other		
								Fuels	Primary	Manufactures
Botswana	110	780	0.8	0.8	33.5 ^c	12 ^c	5 ^c	0	96	4
Ethiopia	80	120	30.9	3.8	10.5	51	11	4	95	1
Kenya	150	390	15.3	5.9	19.0	34	12	19	65	16
Madagascar	130	330	8.5	2.8	15.8	40 ^c	13 ^c	2	91	7
Malawi	80	220	5.8	1.3	19.4	40	16	0	96	4
Mauritius	240	1080	0.9	1.0	37.8 ^c	24 ^c	17 ^c	0	75	25
Sudan	140	450	17.9	8.1	8.8	33	8	1	99	0
Tanzania	100	250	17.5	4.4	11.1	55	9	2	85	13
Zaire	90	210	27.5	5.8	18.4	26	8	1	94	5
Zambia	400	540	5.6	3.0	49.2	15	17	0	99	1
Benin	90	270	3.4	0.9	21.1	61	7	0	91	9
Cameroon	180	590	8.2	4.9	28.9	33	10	3	93	4
Ghana	310	400	11.3	4.5	24.4	62 ^c	10 ^c	1	98	1
Ivory Coast	310	1070	8.2	8.8	29.6	25	12	3	92	5
Mali	70	180	6.8	1.2	17.7	35	14	0	95	5
Niger	90	300	5.2	1.5	25.9 ^c	50	5	0	99	1
Senegal	230	450	5.5	2.5	17.5	36	15	14	72	14
Togo	140	400	2.4	1.0	31.4	29	6	13	81	6
Upper Volta	60	180	5.6	1.0	8.1	37	14	0	95	5
Congo	270	670	1.5	1.0	13.2	33	5	74	10	16
Gabon	630	3420	0.6	2.2	50.1 ^c	6 ^c	8 ^c	73	26	1
Nigeria	120	910	82.6	75.1	32.7	21	6	91	9	0

^aData are in the prices of the year indicated.^bSource: World Bank data base; GDP shares from Compendium of World Development Indicators, 1982, Department of International Economic and Social Affairs, United Nations.^cData for 1978.

Applying the median per capita income growth rate of 1.5% for developing countries in the 1970–79 period to the countries of sub-Saharan Africa, the dividing line would be \$340 in 1979 prices for the year 1979. As a result of its rapid rate of economic growth, Botswana would qualify as a middle-income country under this benchmark. No other country would need to be reclassified, however.⁵

This classification scheme is utilized in examining the balance-of-payments effects of external shocks (Section 1), and of policy responses to these shocks (Section 2), in sub-Saharan African countries during the 1973–78 period. The article further evaluates the policies applied by the countries of the region (Section 3). The Appendix provides a description of the methodology applied.

1. THE BALANCE-OF-PAYMENTS EFFECTS OF EXTERNAL SHOCKS

The balance-of-payments effects of external shocks are examined with respect to terms of trade effects and export volume effects. Estimates have been made for the middle-income and low-income oil importing countries of Eastern and Western Africa, as well as for the oil-exporting countries of the region. For comparison, estimates for a group of less developed countries in other regions, including Colombia, Egypt, Jamaica, Morocco, Peru, Philippines, Thailand, and Tunisia, are also provided. The range of per capita incomes in these countries roughly corresponds to that for the middle-income countries of sub-Saharan Africa.

Table 2 presents summary results for the various country groups in the 1974–78 period, on the average. Table 3 provides estimates of terms of trade effects and export volume effects in regard to these groups for the years 1974–78, taken individually, as well as averages for the entire period. In turn, Table 4 relates terms of trade effects to the value of exports and imports and to GNP, and export volume effects to the value of exports and to GNP, all expressed in the prices of the years 1971–73. Average results for the 1974–78 period for individual sub-Saharan

⁵The data for 1979 originate in the *1981 World Bank Atlas*, which includes countries with less than 1 million inhabitants (in the present case, Botswana and Mauritius). Such countries are not covered in the *World Development Report, 1981* that provided earlier estimates of per capita incomes for 1979 and used a benchmark of \$375. Under this benchmark, Sudan and Togo were classified as low-income countries. However, according to the revised figures of the *Atlas*, income per head in these countries exceeded that of Kenya in 1979.

African countries and for the various groups of countries are available in greater detail upon request from the author.

Terms of Trade Effects

In the oil-importing sub-Saharan African countries, terms of trade effects were slightly favorable in 1974, when the impact of the world economic boom on non-fuel primary commodities was still apparent. This was followed by losses in the terms of trade, averaging 4.6% of the gross national product in 1975. Improvements occurred in the next two years but a further deterioration set in in 1978, bringing the average terms of trade loss for the 1974–78 period to 2.5% of GNP.

Terms of trade losses averaged 4.7% of GNP in the less developed countries of other regions, exceeding the 1.4% figure for the comparable middle-income oil-importing sub-Saharan African countries by a considerable margin. In both cases, losses in terms of trade were due entirely to the effects of higher import prices on the trade deficit (unbalanced trade effect) while a small improvement was shown in the terms of trade estimated on the assumption of balanced trade (pure terms of trade effect). In turn, adverse unbalanced trade and pure terms of trade effects reinforced each other, giving rise to a loss averaging 4.6% of GNP in low-income sub-Saharan African countries during the 1974–78 period.

The pure terms of trade effect, as well as the overall terms of trade effects, were favorable in the middle-income oil-importing countries of Western Africa; the outcome was dominated by the Ivory Coast, which experienced an improvement owing to the rise of coffee prices. The pure terms of trade effect was also favorable in the low-income countries of Western Africa, where Niger benefited from higher uranium and livestock prices, but this was more than offset by an unfavorable unbalanced trade effect. In Eastern Africa, the adverse unbalanced trade and pure terms of trade effects reinforced each other, although among low-income countries Ethiopia experienced a gain due to higher coffee prices.

Oil-exporting sub-Saharan African countries had considerable terms of trade gains in 1974, equaling 21.5% of their gross national product in that year. This gain declined subsequently to 6.2% of GNP by 1978, although it still approached 15% of the GNP in the 1974–78 period, on the average.

Export Volume Effects

In the oil-importing countries of sub-Saharan Africa, export shortfalls due to the deceleration of the growth of world trade were relatively small in 1974, amounting to 0.5% of their gross national product. Export

Table 2: Representative Ratios of Balance of Payment Effects of External Shocks and of Policy Responses to these Shocks (1974-78 Averages)

	External Shocks as a Percentage of: GNP Average Trade		Terms of Trade Effects	Export Volume Effects	Additional Net External Financing	% of External Increase in Export Market Share
OIL IMPORTING						
Middle-income Eastern Africa	8.8	47.8	81	19	87	-28
Middle-income Western Africa	0.5	4.0	-383	483	354	55
Middle-income sub-Saharan Africa	3.5	24.3	40	60	111	-20
Low-income Eastern Africa	6.0	41.9	74	26	18	-34
Low-income Western Africa	6.5	40.9	87	13	136	-17
Low-income sub-Saharan Africa	6.1	41.7	76	24	37	-31
Eastern Africa	7.2	44.8	78	22	55	-31
Western Africa	1.1	9.6	-79	179	214	8
Sub-Saharan Africa	4.4	30.5	58	42	75	-26
OTHER						
Oil-exporting sub-Saharan Africa	-12.4	115.5	-118	18	-38	-3
Sub-Saharan countries total	-3.2	-23.2	-164	64	-10	-25
LDCs in other regions	6.4	47.6	74	26	151	-2

^aSource: Calculations based on data from World Bank data base.

shortfalls rose to 1.8% of GNP in 1975 and, after a temporary decline in 1976, reached a peak of 2.8% in 1978; they averaged 1.9% for the entire 1974-78 period. Among individual countries, only Malawi experienced a slight gain owing to the rapid rise of world demand for tobacco.

Export shortfalls averaged 1.7% of GNP in the less developed countries of other regions, falling short of the loss experienced in the oil-importing middle-income countries of sub-Saharan Africa (2.1%) while

Table 2: *Continued*

Shocks	Effects of Lower GNP Growth Rate	External Debt Ratio	Increase in Export Market Shares/ Exports	Import Substitution/ Imports	Import Effects of Lower GNP Growth Rates/ Imports	Debt Service Ratio 1973	1978
52	-12	31.8	-13.2	25.2	-5.7	15.8	14.8
-262	-47	17.7	2.5	-9.5	-1.7	9.3	15.7
24	-15	22.8	-5.2	5.6	-3.4	12.7	15.4
67	50	26.6	-16.1	25.2	18.6	10.6	27.4
14	-32	27.0	-11.5	4.0	-9.5	9.9	10.2
58	36	26.7	15.5	20.9	12.9	10.5	24.3
59	17	28.9	-14.5	25.2	7.3	13.3	21.7
-84	-37	18.8	0.9	-7.0	-3.1	9.3	15.0
41	10	24.2	-8.7	11.4	2.8	11.9	18.4
-54	-5	6.2	-3.8	-41.6	-3.5	4.4	7.8
65	0	16.1	-6.9	-12.8	-0.1	9.1	13.0
-51	1	28.0	-1.1	-19.7	0.4	25.6	39.9

slightly exceeding that for the low-income countries of the region (1.5%). Among low-income countries, export shortfalls were greater than the average in Eastern Africa; among middle-income countries, such was the case in Western Africa. Finally, owing to the deceleration of the growth of world demand for petroleum at higher prices, oil-exporting countries experienced somewhat larger export shortfalls (2.2%) than the oil-importing countries of the region.

Table 3: Balance of Payment Effects of External Shocks and of Policy Responses to These Shocks: Sub-Saharan Africa (\$U.S., million)^a

	1974	1975	1976	1977	1978	Average 1974-78	1974
							Oil-Importing Eastern Africa
<u>MIDDLE INCOME</u>							
<u>External Shocks</u>							
Terms-of-trade effect	-36	812	517	565	1306	633	-359
Export volume effect	-7	172	135	196	244	148	147
Export volume effect	-43	984	652	761	1550	781	-212
<u>Policy Responses</u>							
Additional net external financing	106	1126	346	608	1226	682	-160
Increase in export market share	-257	-207	-55	-218	-349	-217	23
Import substitution	184	120	460	478	794	407	-2
Effect of lower GDP growth rate	-76	-55	-99	-107	-121	-92	-73
Together	-43	984	652	761	1550	781	-211
<u>LOW INCOME</u>							
<u>External Shocks</u>							
Terms-of-trade effect	111	645	354	731	707	510	86
Export volume effect	27	176	145	259	305	182	12
Together	138	820	500	990	1012	692	97
<u>Policy Responses</u>							
Additional net external financing	83	335	32	341	-178	123	174
Increase in export market share	-134	-156	-434	-324	-133	-236	-50
Import substitution	336	504	524	387	566	463	-74
Effect of lower GDP growth rate	-146	138	379	586	757	343	47
Together	138	822	500	990	1012	693	97
<u>TOGETHER</u>							
<u>External Shocks</u>							
Terms-of-trade effect	75	1457	872	1296	2013	1142	-273
Export volume effect	21	348	280	455	550	331	159
Together	95	1804	1152	1751	2562	1473	-114
<u>Policy Responses</u>							
Additional net external financing	188	1461	377	949	1048	805	14
Increase in export market share	-391	-362	-489	-542	-481	-453	-27
Import substitution	520	624	984	865	1360	871	-75
Effect of lower GDP growth rate	-222	83	280	479	636	251	-26
Together	95	1806	1153	1751	2562	1473	-114

1975	1976	1977	1978	Average 1974-78	1974	1975	1976	1977	1978	Average 1974-78
Oil-Importing Western Africa					Oil-Importing Sub-Saharan Africa					
65	-161	-721	-271	-289	-395	877	356	-155	1034	343
304	290	520	561	365	141	477	425	716	806	513
370	129	-201	290	76	-254	1354	781	561	1840	856
360	120	184	841	269	-54	1486	466	791	2067	951
103	94	90	-102	42	-234	-104	39	-127	-451	-175
-119	-91	-431	-354	-199	183	1	367	47	440	208
26	6	-44	-93	-35	-149	-29	92	-151	-214	-127
371	129	-201	292	76	-254	1354	780	560	1842	857
156	75	105	185	121	197	800	430	836	892	631
17	13	25	21	18	39	193	158	284	326	200
173	88	130	206	139	236	993	588	1120	1218	831
202	77	161	327	188	257	538	108	503	150	311
-14	-27	-14	-13	-24	-184	-170	-461	-338	-146	-260
-48	79	84	52	19	262	457	603	471	618	482
32	-41	-102	-161	-45	-99	171	338	484	596	298
173	88	130	206	139	235	995	589	1120	1218	831
221	-86	-616	-87	-168	-199	1677	786	680	1926	974
323	303	545	582	383	180	671	583	1000	1132	713
544	217	-71	496	214	-19	2348	1369	1680	3058	1687
563	197	345	1169	457	202	2024	574	1294	2217	1262
89	67	77	-115	18	-418	-274	-422	-465	-596	-435
-166	-12	-347	-302	-181	445	458	972	518	1058	690
59	-34	-146	-254	-80	-248	142	246	333	382	171
544	218	-71	498	214	-19	2350	1370	1680	3060	1688

Table 3: *Continued*

	1974	1975	1976	1977	1978	Average 1974-78	1974
EXTERNAL SHOCKS							
	<i>Oil-Exporting Countries</i>						<i>Sub-</i>
Terms-of-trade effect	-6125	-4101	-5493	-5029	-2104	-4570	-6324
Export volume effect	97	652	580	883	1211	685	276
Together	-6028	-3449	-4913	-4146	-893	-3885	-6048
POLICY RESPONSES							
Additional net external financing	-6055	-1575	-2158	-497	2830	-1491	-5853
Increase in export market share	-74	-209	12	-1	-270	-108	-492
Import substitution	406	-1574	-2339	-3478	-3559	-2109	851
Effect of lower GDP growth rate	-304	-91	-428	-170	106	-177	-552
Together	-6027	-3449	-4913	-4146	-893	-3885	-6046

^aSource: Calculations based on data from World Bank data base.

Terms of Trade and Export Volume Effects Combined

While the balance-of-payments effects of external shocks were practically zero in the oil-importing sub-Saharan African countries in 1974, they reached 6.4% of the gross national product in 1975 when the adverse terms of trade and export volume effects reinforced each other. Following a decline in 1976, the balance-of-payments effects of external shocks increased in subsequent years, reaching a peak of 7.5% of GNP in 1978 and averaging 4.4% of the gross national product in the 1974-78 period. The corresponding ratio for the less developed countries of other regions was 6.4% for the period taken as a whole.

The adverse balance-of-payments effects of external shocks averaged 3.5% of GNP in the middle-income countries and 6.1% in the low-income countries of oil-importing sub-Saharan Africa, with the largest loss felt by the middle-income countries in Eastern Africa (8.8% of GNP) and the smallest by those in Western Africa the smallest (0.5%). In the latter case, the outcome was greatly affected by the favorable balance-of-payments effects of external shocks in the Ivory Coast; a similar result for Ethiopia and Niger affected the outcome for low-income countries rather little.

In the oil-exporting sub-Saharan African countries, the favorable balance-of-payments effects of external shocks equaled 21.2% of the gross national product in 1974. The ratio fell to 2.6% of GNP in 1978 as favorable terms of trade effects declined and unfavorable export volume effects increased over time; it averaged 12.4% of the gross national product in the 1974-78 period.

Table 3: *Continued*

1975	1976	1977	1978	Average 1974-78	1974	1975	1976	1977	1978	Average 1974-78
<i>Saharan Africa</i>					<i>LDCs in Other Regions</i>					
-2424	-4707	-4349	-178	-3596	203	3701	3560	3717	5289	3294
1322	1164	1883	2343	1398	335	1017	947	1401	1889	1118
-1102	-3543	-2466	2165	-2199	538	4718	4507	5118	7178	4412
449	-1583	797	5046	-229	2184	7419	6584	7410	10059	6731
-483	-410	-466	-866	-544	-426	-256	-223	16	311	-116
-1116	-1367	-2960	-2502	-1419	-1163	-2428	-1923	-2387	-3359	-2252
60	-182	163	489	-6	-57	-18	70	78	166	48
-1100	-3542	-2466	2167	2197	538	4717	4508	5117	7177	4411

2. THE BALANCE-OF-PAYMENTS EFFECTS OF THE POLICIES APPLIED

The policies applied in response to external shocks have included additional net external financing, domestic adjustment policies in the form of export promotion and import substitution, as well as macroeconomic policies affecting the rate of growth of GNP and hence that of imports. The estimated balance-of-payments effects of these policies are reported in Tables 2-4.

Additional Net External Financing

The oil-importing countries of sub-Saharan Africa utilized additional net external financing (defined as the difference between actual and hypothetical net external financing, the latter being estimated on the assumption of the continuation of export and import trends in 1963-73) to offset 75% of the balance-of-payments effects of external shocks in the 1974-78 period, on the average. In the same period, additional net external financing equaled 3.3% of the gross national product of the countries concerned.

Additional external financing averaged 111% of the balance-of-payments effects of external shocks and 3.9% of GNP in the middle-income oil importing countries of sub-Saharan Africa. While these ratios exceeded those for the low-income countries of the region (37% and 2.3%), they fell short of the corresponding ratios for less developed countries in other regions (151% and 9.7%).

Table 4: Balance of Payment Effects of External Shocks and of Policy Responses to these Shocks (Percent)^a

	1974	1975	1976	1977	1978	Average 1974-78	1974
MIDDLE INCOME							
<i>Oil-Importing Eastern Africa</i>							
<u>External Shocks</u>							
Terms-of-trade effects/ average trade	-2.2	48.7	30.6	34.0	86.1	38.7	-20.8
Terms-of-trade effects/GNP	-0.4	9.7	5.9	6.1	13.5	7.1	-2.3
Export volume effects/exports	-0.4	11.1	7.4	11.6	15.2	9.0	9.0
Export volume effects/GNP	-0.1	2.1	1.5	2.1	2.5	1.7	0.9
External shocks/GNP	-0.5	11.7	7.4	8.2	16.0	8.8	-1.3
<u>Policy Response</u>							
Addl. net external financing/ average trade	6.5	67.6	20.4	36.6	80.	41.8	-9.3
Addl. net external financing/ GNP	1.3	13.4	3.9	6.6	12.6	7.7	-1.0
Increase in export market share/exports	-16.1	-13.4	-3.0	-12.9	-21.7	-13.2	1.4
Import substitution/imports	11.1	6.7	29.4	29.1	55.6	25.2	-0.1
Effects of lower GNP growth rate/imports	-4.6	-3.1	-6.3	-6.5	-8.5	-5.7	-4.0
LOW INCOME							
<u>External Shocks</u>							
Terms of trade effects/average trade	6.1	39.7	23.4	44.9	41.7	30.8	29.1
Terms of trade effects/GNP	1.0	5.7	3.1	6.3	6.0	4.4	4.5
Export volume effects/exports	1.8	12.0	11.2	18.6	18.5	12.4	7.2
Export volume effects/GNP	0.2	1.5	1.3	2.2	2.6	1.6	0.6
External shocks/GNP	1.2	7.2	4.4	8.5	8.6	6.0	5.1
<u>Policy Response</u>							
Addl. net external financing/ average trade	4.6	20.6	2.1	20.9	-10.5	7.4	59.1
Addl. net external financing/ GNP	0.7	2.9	0.3	2.9	-1.5	1.1	9.1
Increase in export market share/exports	-8.7	-10.7	-33.4	-23.2	-8.0	-16.1	-30.5
Import substitution/imports	16.2	28.2	30.4	20.7	32.4	25.2	-17.4
Effects of lower GNP growth rate/imports	-7.1	7.7	22.0	31.4	43.4	18.6	11.1

Table 4: *Continued*

1975	1976	1977	1978	Average 1974-78	1974	1975	1976	1977	1978	Average 1974-78
Oil-Importing Western Africa					Oil-Importing Sub-Saharan Africa					
3.6	-8.6	-34.9	-13.2	-15.2	-11.8	25.4	10.0	-4.2	29.0	9.7
0.4	-1.1	-4.5	-1.6	-1.8	-1.7	3.7	1.5	-0.6	3.9	1.4
18.3	16.1	30.3	34.0	21.5	4.4	14.9	11.7	21.0	24.8	15.3
2.0	1.9	3.2	3.3	2.3	0.6	2.0	1.8	2.8	3.0	2.1
2.5	0.8	-1.2	1.7	0.5	-1.1	5.8	3.2	2.2	6.9	3.5
20.2	6.4	8.9	40.9	14.2	-1.6	43.1	13.1	21.2	57.9	26.9
2.4	0.8	1.1	5.0	1.7	-0.2	6.4	1.9	3.1	7.7	3.9
6.2	5.2	5.3	-6.2	2.5	-7.2	-3.2	1.1	-3.7	13.9	-5.2
-6.3	-4.7	-17.9	-14.4	-9.5	5.3	0.0	10.5	1.2	11.3	5.6
1.4	0.3	-1.8	-3.8	-1.7	-4.3	-0.8	-2.6	-3.7	-5.5	-3.4
48.6	24.6	29.6	43.7	35.7	9.4	41.2	23.6	42.1	42.1	31.7
7.9	3.5	4.6	7.7	5.6	1.5	6.0	3.2	6.0	6.3	4.6
8.5	6.2	11.6	9.0	8.6	2.3	11.6	10.5	17.6	17.3	12.0
0.9	0.6	1.1	0.9	0.8	0.3	1.4	1.2	2.0	2.3	1.5
8.8	4.0	5.7	8.6	6.5	1.8	7.4	4.3	8.1	8.6	6.1
63.2	25.0	45.6	77.6	55.5	12.2	27.7	6.0	25.3	7.1	15.6
10.3	3.5	7.1	13.7	8.8	1.9	4.0	0.8	3.6	1.1	2.3
-7.0	-12.9	-6.3	-5.6	-11.5	-10.8	-10.2	-30.6	-21.0	-7.7	-15.5
-10.9	19.4	17.2	8.5	4.0	10.5	20.5	28.3	20.0	26.2	20.9
7.4	-10.0	-20.8	-26.4	-9.5	-4.0	7.7	15.9	20.6	25.3	12.9

Table 4: Continued

	1974	1975	1976	1977	1978	Average 1974-78	1974
<u>TOGETHER</u>							
<i>Oil-Importing Eastern Africa</i>							
<u>External Shocks</u>							
Terms of trade effects/average trade	2.2	44.3	11.8	28.8	32.6	24.5	-13.6
Terms of trade effects/GNP	0.4	7.4	4.3	6.2	9.4	5.6	-1.5
Export volume effects/exports	0.7	11.6	9.0	14.8	16.9	10.6	8.9
Export volume effects/GNP	0.1	1.8	1.4	2.2	2.6	1.6	0.9
External shocks/GNP	0.5	9.1	5.7	8.4	12.0	7.2	-0.6
<u>Policy Response</u>							
Addl. net external financing/average trade	5.5	44.4	11.8	28.8	32.6	24.5	0.7
Addl. net external financing/GNP	1.0	7.4	1.9	4.6	4.9	3.9	0.1
Increase in export market share/exports	-12.5	-12.1	-15.7	-17.6	-14.8	-14.5	-1.5
Import substitution/imports	13.9	17.5	29.9	24.7	42.8	25.2	-3.4
Effects of lower GNP growth rate/imports	-6.0	2.3	8.5	13.7	20.0	7.3	-1.2
<i>Oil-Exporting Countries</i>							
<u>External Shocks</u>							
Terms of trade effects/average trade	-238.7	-123.0	-128.2	-103.8	-44.2	-115.5	-78.9
Terms of trade effects/GNP	-21.5	-14.3	-17.0	-15.1	-6.2	-14.6	-9.6
Export volume effects/exports	3.2	26.0	19.0	29.5	45.1	24.1	3.5
Export volume effects/GNP	0.3	2.3	1.8	2.7	3.5	2.2	0.4
External shocks/GNP	-21.2	-12.1	-15.2	-12.4	-2.6	-12.4	-9.2
<u>Policy Response</u>							
Addl. net external financing/average trade	-236.0	-47.2	-50.3	-10.3	59.5	-37.7	-73.0
Addl. net external financing/GNP	-21.3	-5.5	-6.7	-1.5	8.3	-4.8	-8.9
Increase in export market share/exports	-2.5	-8.3	0.4	0.0	-10.0	-3.8	-6.2
Import substitution/imports	18.8	-37.8	-42.3	-51.9	-52.1	-41.6	10.5
Effects of lower GNP growth rate/imports	-14.1	-2.2	-7.7	-2.5	1.6	-3.5	-6.8

^aSource: Calculations based on data from World Bank data base.

Table 4: Continued

1975	1976	1977	1978	Average 1974-78	1974	1975	1976	1977	1978	Average 1974-78
<i>Oil Importing Western Africa</i>					<i>Oil Importing Sub-Saharan Africa</i>					
10.5	-3.9	-25.5	-3.5	-7.5	-3.6	31.1	14.6	11.9	33.9	17.6
1.3	-0.5	-3.3	-0.4	-0.9	-0.5	4.6	2.1	1.7	4.7	2.5
17.2	15.1	28.2	30.9	20.1	3.6	13.8	11.4	19.9	22.1	14.2
1.9	1.7	3.0	3.0	2.1	0.5	1.8	1.5	2.5	2.8	1.9
3.2	1.2	-0.4	2.6	1.2	-0.1	6.4	3.6	4.3	7.5	4.4
26.8	9.0	14.3	47.2	20.4	3.7	37.5	10.7	22.7	39.0	22.8
3.3	1.1	1.9	6.0	2.5	0.5	5.5	1.5	3.3	5.4	3.3
4.7	3.3	4.0	-6.1	0.9	-8.5	-5.6	-8.2	-9.3	-11.6	-8.7
-7.2	-0.5	-11.9	-9.8	-7.0	7.5	7.8	17.2	8.1	16.9	11.4
2.5	-1.5	-5.0	-8.3	-3.1	-4.2	2.4	4.4	5.2	6.1	2.8
<i>Sub-Saharan Africa</i>					<i>LDCs in Other Regions</i>					
-27.8	-48.7	-41.5	-1.7	-37.9	2.5	41.5	38.9	38.0	49.5	35.3
-3.7	-6.7	-6.0	-0.2	-5.2	0.3	5.7	5.1	5.1	6.8	4.7
17.9	14.2	23.5	30.0	17.8	5.9	15.9	13.6	18.9	23.8	16.0
2.0	1.7	2.6	3.1	2.0	0.6	1.6	1.4	2.0	2.5	1.7
-1.7	-5.1	-3.4	2.9	-3.2	1.0	7.3	6.5	7.0	9.2	6.4
5.1	-16.4	7.5	48.3	-2.4	26.8	83.1	72.0	75.7	94.1	72.1
0.7	-2.3	1.1	6.7	-0.3	3.6	11.4	9.5	10.1	12.9	9.7
-6.5	-5.0	-5.8	-11.1	-6.9	-6.4	-3.4	-2.6	0.7	4.2	-1.1
-11.1	-12.2	-22.6	-19.1	-12.8	-12.0	-21.6	-17.4	-20.0	-25.2	-19.7
0.5	-1.6	-1.2	3.7	-0.1	-0.6	-0.2	0.6	0.7	1.2	0.4

Limited reliance on additional net external financing by the low-income countries of sub-Saharan Africa reflected in part the inability of countries such as Tanzania and Zaire to continue increasing their foreign borrowing. Such borrowing assumed considerable proportions prior to 1973, contributing to increases in the average debt-service ratio of the low-income countries from 10.5% in 1973 to 24.3% in 1978. Middle-income countries could continue borrowing throughout the period under consideration as their debt service ratio increased only from 12.7% in 1973 to 15.4% in 1978.

In the middle-income oil-importing countries of Western Africa, additional net external financing exceeded the balance-of-payments effects of external shocks several times in the 1974–78 period. Nonetheless, with external shocks being relatively small in absolute terms, such financing accounted for only 1.7% of GNP. In turn, with larger external shocks, additional net external financing averaged 7.7% of GNP in the middle-income countries of Eastern Africa and 87% of the balance-of-payments effects of external shocks. In the 1974–78 period, additional net external financing averaged 136% of the balance-of-payments effects of external shocks in low-income Western Africa but only 18% in low-income Eastern Africa, equaling 8.8% and 1.1% of GNP, respectively. Apart from borrowing limitations in Tanzania and Zaire, the results for Eastern Africa were affected by negative additional external financing in Botswana and Malawi that relied on domestic adjustment policies in response to external shocks.

Negative additional net external financing equaled the favorable balance-of-payments effects of external shocks in the oil-exporting countries of sub-Saharan Africa in 1974. The situation changed in subsequent years, however, as balance-of-payments gains declined and the oil-exporting countries found increasing uses for them. By 1978, additional net external financing turned positive, although it was negative for the 1974–78 period as a whole, amounting to 4.8% of GNP.

Export Promotion

In the 1974–78 period, on the average, losses in export market shares added 26% to the adverse balance-of-payments effects of external shocks, and reduced the value of exports by 9%, in the oil-importing countries of sub-Saharan Africa. The losses were smaller in middle-income than in low-income countries, whether expressed as a proportion of the balance-of-payments effects of external shocks (20% and 31%, respectively), or as a proportion of export value (5% and 15%, respectively). Nevertheless, these middle-income countries were less successful in promoting exports

than the comparable less developed countries of other regions, where losses in export market shares averaged 2% of the balance-of-payments effects of external shocks and 1% of export value.

Led by the Ivory Coast, middle-income oil-importing Western African countries increased their export market shares, offsetting 55% of the balance-of-payments effects of external shocks and raising export values by 3%. In turn, despite a successful export promotion effort in Mauritius, losses in export market shares added 28% to the balance-of-payments effects of external shocks in the middle-income countries of Eastern Africa, reducing the value of exports by 13% in the 1974–78 period, on the average.

Low-income countries in both Western and Eastern Africa lost export market shares, accounting for 17% and 34% of the balance-of-payments effects and 12% and 16% of export value, respectively. In Eastern Africa, losses in market shares exceeded the balance-of-payments effects of external shocks in Ethiopia and Zaire, far surpassing increases in export market shares in Botswana and Malawi.

Finally, slight gains in export market shares, averaging 2% of the favorable balance-of-payments effects of external shocks and 4% of export value, were experienced in the oil-exporting countries of sub-Saharan Africa, with the gains made by Gabon more than offsetting the losses in Congo and Nigeria. These results, however, reflect the increased production of minerals while the countries in question experienced a decline in their agricultural exports.

Import Substitution

Middle-income as well as low-income oil-importing sub-Saharan African countries engaged in import substitution, entailing a decline in the income elasticity of import demand compared to the 1963–73 period. In the years 1974–78, on the average, import substitution offset 24% and 58% of the balance-of-payments effects of external shocks in the two groups of countries, with an overall average of 41%. As a result, import values declined by 6%, 21%, and 11%, respectively. By contrast, less developed countries in other regions experienced negative import substitution that added 51% to the adverse balance-of-payments effects of external shocks and increased total imports by 20%.

Among middle-income oil-importing countries in sub-Saharan Africa, negative import substitution was observed in Western Africa, where import shares increased to a considerable extent in the Ivory Coast and in Senegal. Among low-income countries in Western Africa, negative import substitution was experienced in Niger, Togo, and Upper Volta but this was

more than offset by import substitution in Benin and Mali, resulting in small import savings for the group as a whole. In turn, medium-income and low-income countries in Eastern Africa, respectively, offset 52% and 67% of the balance-of-payments effects of external shocks through import substitution, with import values declining by 25% in both cases.

Among oil-exporting countries, import substitution in Congo and Gabon was more than offset by increases in import shares in Nigeria, averaging 54% of the favorable balance-of-payments effects of external shocks for the entire group. The corresponding ratio was 64% in Nigeria alone.

Import Effects of Changes in GNP Growth Rates

The oil-importing countries of sub-Saharan Africa reduced their import bill by 3% as a result of a deceleration in their economic growth, thereby offsetting 10% of the balance-of-payments effects of external shocks. Considerable differences are observed, however, between middle-income and low-income countries. In the first case, economic growth accelerated, adding 3% to the import bill and 15% to the adverse balance-of-payments effects of external shocks; in the second, import savings of 13% offset 36% of the balance-of-payments effects of external shocks. By comparison, growth rates of GNP and imports remained practically unchanged in the less developed countries of other regions.

Import savings were concentrated in low-income Eastern Africa, where all countries experienced a decline in their GDP growth rates, amounting to 50% of the balance-of-payments effects of external shocks and to 19% of the value of imports. This was not the case in any of the other three groups, where the outcome was greatly affected by the acceleration of economic growth in Mauritius and Sudan (middle-income Eastern Africa); in the Ivory Coast, Cameroon, and Ghana (middle-income Western Africa); and in Niger, Benin, and Mali (low-income Western Africa). The resulting increases in imports added 12% to the balance-of-payments effects of external shocks and 6% to import value in the first case; 15% and 2%, respectively, in the second, and 32% and 9%, respectively, in the third.

Notwithstanding the favorable external shocks, among oil-exporting countries Congo and Nigeria experienced a decline in their GNP growth rates. The resulting fall in imports was, however, more than offset by the rise in imports associated with the acceleration of economic growth in Gabon. For the group as a whole, imports increased by 4% as a result, offsetting 5% of the favorable balance-of-payments effects of external shocks.

3. POLICY RESPONSES TO EXTERNAL SHOCKS: AN EVALUATION

The Choice of Adjustment Policies

In the 1974–78 period, on the average, domestic adjustment in the form of export promotion and import substitution offset 15% of the balance-of-payments effects of external shocks in the oil-importing countries of sub-Saharan Africa. Reductions in GNP growth rates offset a further 10%, leaving 75% to additional net external financing. Low-income countries, however, relied more extensively on domestic adjustment (27% of the balance-of-payments effects of external shocks) and on reductions in GNP growth rates (36%), so that the share of additional external financing was only 37%. The corresponding figures were 4%, –15%, and 111% for the middle-income oil-importing countries; this compares to –53%, 1%, and 151% for less developed countries outside sub-Saharan Africa.

However, the results vary to a considerable extent within both the middle-income and the low-income country groups. Additional net external financing exceeded the adverse balance-of-payments effects of external shocks several times in the middle-income oil-importing countries of Western Africa, where the acceleration of economic growth as well as negative domestic adjustment effects aggravated the balance-of-payments situation. In turn, domestic adjustment effects exceeded, albeit by a relatively small margin, the import effects of the acceleration of economic growth in the middle-income countries of Eastern Africa.

The positive balance-of-payments effects of domestic adjustment policies and the deceleration of economic growth reinforced each other in low-income Eastern Africa while the opposite result obtained in low-income Western Africa, where additional net external financing exceeded the balance-of-payments effects of external financing. Domestic adjustment and growth effects on the balance of payments were also negative in the oil-exporting countries of sub-Saharan Africa, offsetting much of the favorable effects of external shocks in the 1974–78 period, on the average.

Among domestic adjustment policies, further distinction has been made between export promotion and import substitution. The oil-importing countries of sub-Saharan Africa were generally characterized by reductions in both export and import shares. The opposite conclusion applies, however, to the oil-importing middle-income countries of Western Africa whereas the oil-exporting countries lost export market shares and experienced negative import substitution.

Adjustment Policies and Economic Growth

While deflationary policies lower the rate of economic growth, domestic adjustment through export promotion and import substitution will increase output and additional net external financing will have similar effects through the inflow of foreign capital. The possible impact of these policies on the rate of economic growth will be considered below by extending the period of observation to 1979, so as to permit analyzing the longer-term effects of the policies applied. For purposes of statistical analysis, the balance-of-payments impact of each of the policies has been expressed as a proportion of the balance-of-payments effects of external shocks.

In an earlier study of 24 developing countries, the author found that reliance on export promotion in response to external shocks and the rate of economic growth in the 1973–79 period were positively correlated, with a Spearman rank correlation coefficient of 0.60, statistically significant at the 1% level. The correlation coefficients were 0.59 for the newly industrializing and 0.66 for the less developed countries of the group, both statistically significant at the 5% level. In turn, reliance on import substitution in response to external shocks and rates of economic growth were negatively correlated in the case of the less developed countries, with a Spearman correlation coefficient of -0.54 , statistically significant at the 5% level, but no such correlation was observed for the newly industrializing countries or for the developing country group as a whole (Balassa 1981c).

In the present article, similar calculations have been made for the 19 oil-importing sub-Saharan African countries. The Spearman rank correlation coefficient between reliance on export promotion and the rate of economic growth in the 1973–79 period is 0.50, statistically significant at the 2% level. The coefficients of 0.25 for import substitution and -0.18 for additional net external financing are not significant statistically, however.

The use of simple regression analysis for the oil-importing sub-Saharan African countries has confirmed the results, with the regression coefficient for the export promotion variable being statistically significant at the 2% level and the R^2 being 29. In turn, the (positive) coefficient of the import substitution variable has a t value of 1.3, and the (negative) coefficient of the additional net external financing variable has a t value of 0.3; the R^2 does not reach 0.1 in either case (Table 5).

Combining all three variables in the same regression equation raises the R^2 to 0.39; the statistical significance of the export promotion variable is maintained; and the coefficients of the other two variables are positive, with t values of 1.4. The results are little affected by the introduction of an

Table 5: Regression Results^a

	Constant ^b	EP/ES	IS/ES	ANEF/ES	ES/GNP	D _{MI}	R ²
(1)	4.220 (6.402)	2.588 (2.618)					0.287
(2)	3.658 (4.453)		1.076 (1.319)				0.093
(3)	4.324 (4.372)			-0.243 (-0.332)			0.0006
(4)	2.779 (2.480)	2.800 (2.647)	1.268 (1.444)	1.080 (1.369)			0.392
(5)	2.748 (2.054)	2.806 (2.543)	1.261 (1.369)	1.079 (1.320)	0.539 (0.046)		0.392
(6)	2.685 (1.816)	2.769 (2.340)	1.261 (1.320)	1.019 (1.043)	0.723 (0.059)	0.210 (0.126)	0.392
(7)		2.766 (2.230)					0.248
(8)			0.874 (0.967)				0.043
(9)				0.258 (0.374)			0.012
(10)		3.167 (2.370)	0.596 (0.709)	0.860 (1.319)			0.272
(11)		3.084 (2.363)	1.287 (1.329)	1.400 (1.860)	-16.333 (-1.343)		0.370
(12)		2.917 (2.074)	1.212 (1.195)	1.091 (1.000)	-16.663 (-1.329)	0.767 (0.403)	0.373
(13)		2.424 (1.995)					0.204
(14)			0.498				0.018
(15)				0.147 (0.222)			0.009
(16)		2.796 (2.068)	0.230 (0.270)	0.645 (0.978)			0.213
(17)		2.674 (2.175)	1.243 (1.363)	1.438 (2.029)	-23.971 (-2.093)		0.418
(18)		2.748 (2.065)	1.276 (1.330)	1.574 (1.526)	-23.826 (-2.0008)	-0.336 (-0.187)	0.421

^aThe dependent variable for equations (1)–(6) is the growth rate of GNP for 1973–79 in the nineteen oil-importing, sub-Saharan African countries. The dependent variable for equations (7)–(12) is the difference between GNP growth rates for the periods, 1973–79 and 1963–73; and for equations (13)–(18) is the difference between the periods 1976–79 and 1963–73. *t* statistics are in parenthesis.

^bExplanation of Symbols: EP = export promotion; IS = import substitution; ANEF = additional net external financing; ES = balance of payments effects of external shocks; GNP = gross national product; and D_{MI} = dummy variable for middle income countries.

external shock variable, defined as the ratio of the balance-of-payment effects of external shocks to GNP, or by the introduction of a dummy variable for the middle-income countries; the regression coefficients of these two variables are positive but neither of them is statistically significant.

Regression analysis has also been carried out using the change in GNP growth rates between the 1963–73 and 1973–79 periods as the dependent variable. The statistical results change little, except that the external shocks variable now has a negative sign and a t value of 1.3, and its inclusion in the regression equation raises the t value of the additional net external financing variable to 1.9.⁶ As before, the dummy variable for middle-income countries is not statistically significant and its introduction does not affect the results.

Finally, calculations have been made in regard to differences in rates of economic growth between the 1963–73 and 1976–79 periods, on the grounds that adjustment policies may affect economic growth with a lag. The high level of significance of the export promotion variable is again confirmed while both the additional net external financing and the external shock variables are statistically significant at the 2% level, with the regression coefficient being positive in the first case and negative in the second.

The uniformly positive and highly significant regression coefficients of the export promotion variable reflect the favorable effects of export promotion on economic growth through resource allocation according to comparative advantage, increased capacity utilization, the exploitation of economies of scale, and technological change in response to external shocks. Import substitution also permits increasing capacity utilization in the short run, but it will have adverse effects on the efficiency of resource allocation if it is undertaken behind high protection. Finally, the inflow of foreign capital permits increasing rates of economic growth in the short run but will bring lasting benefits only if the rate of return on foreign capital exceeds its cost, which is not the case in some sub-Saharan African countries.

In fact, the regression coefficient of the export promotion variable is several times higher than that of the import substitution and additional net external financing variables in the equations where the 1973–79 GNP growth rate is used as the dependent variable. The same result is obtained

⁶Regression equations (7)–(12) reported in Table 6 do not include a constant term that was not significant statistically, reflecting the lack of change in the intercept of the equations between the two periods.

in the equations where the dependent variable is the change in GNP growth rates between 1963–73 and 1973–79.

A comparison of the results obtained by replacing changes in GNP growth rates between 1963–73 and 1973–79 by changes between 1963–73 and 1976–79 is of further interest. In regression equations incorporating the three policy variables, little change is shown in the coefficient of the export variable while the coefficients of the import substitution and the additional net external financing variable are substantially lower in the second case.⁷ These results may be interpreted to reflect the diminishing effects on economic growth of import substitution and of the inflow of foreign capital over time.

Factors Affecting Growth Performance

Table 6 provides information on growth rates of GNP, incremental capital–output ratios, domestic savings ratios, and foreign savings ratios for the periods 1963–73 and 1973–79. High incremental capital–output ratios and low domestic savings ratios largely explain that, notwithstanding the substantial inflow of foreign capital, rates of economic growth were relatively low in the low-income countries of sub-Saharan Africa. In the 1973–79 period, GNP growth rates in these countries averaged 2.5%, with per capita incomes remaining unchanged, compared to growth rates of 3.8% for the entire group of oil-importing sub-Saharan African countries. GNP growth rates were even lower, averaging 1.8% a year, in Eastern Africa, where Zaire and Madagascar exhibited particularly poor performance. By contrast, countries, in Western Africa experienced a rebound, with GNP rising 5.6% a year following the adverse effects of the drought.

The gross national product increased more rapidly in the middle-income oil-importing sub-Saharan African countries (4.3% a year), with both Eastern Africa (5.6%) and Western Africa (3.0%) participating in the expansion. These countries had lower incremental capital–output ratios (5.1 vs. 10.2) and higher domestic savings ratios (16.5% and 10.2%), but lower foreign savings ratios (3.7% and 10.2%), than the low-income countries of the region. The growth performance of the middle-income oil-importing countries of sub-Saharan Africa was nearly comparable to that of the less developed countries of other regions whose GNP rose by 5.1%

⁷Such a result is not obtained, however, if the external shock variable is introduced in the regression equation, reflecting the negative correlation between the variables in question.

Table 6: Expenditure Shares and Growth Rates: Sub-Saharan Africa^a

	1963-73	1973-76	1976-79	1973-79	1963-73	1973-76	1976-79	1973-79	1963-73	1973-76	1976-79	1973-79
	Oil-Importing Eastern Africa				Oil-Importing Western Africa				Oil-Importing Sub-Saharan Africa			
<u>MIDDLE INCOME</u>												
Domestic savings ratio	23.1	18.8	16.0	17.1	14.4	16.3	16.1	16.1	18.5	17.4	16.0	16.5
Foreign savings ratio	-3.0	6.1	5.5	5.7	1.2	1.1	2.8	2.2	-0.8	3.2	3.9	3.7
Incremental capital-output ratio	8.4	3.6	5.2	4.3	3.9	7.1	6.3	6.7	5.6	4.6	5.7	5.1
<u>Growth Rates</u>												
Gross national product	3.0	6.6	4.1	5.6	3.9	1.9	3.8	3.0	3.4	4.2	3.9	4.3
Population	2.8	2.9	3.0	3.0	2.6	3.3	3.2	3.2	2.7	3.1	3.1	3.1
Per capita GNP	0.2	3.7	1.1	2.6	1.3	-1.4	0.6	-0.2	0.7	1.1	0.8	1.2
<u>LOW INCOME</u>												
Domestic savings Ratio	15.6	12.1	9.8	10.7	5.4	0.8	7.0	4.7	13.7	10.2	9.3	9.6
Foreign savings ratio	3.5	7.9	8.6	8.3	10.4	20.5	17.5	18.6	4.8	10.0	10.2	10.2
Incremental capital-output ratio	4.6	19.3	7.2	10.2	9.4	4.1	3.8	3.9	5.1	11.8	6.2	8.0
<u>Growth Rates</u>												
Gross national product	4.5	0.9	3.0	1.8	2.0	5.1	5.6	5.6	5.0	1.6	3.5	2.5
Population	2.5	2.7	2.5	2.6	2.4	2.0	2.5	2.3	2.4	2.7	2.5	2.5
Per Capita GNP	2.0	-1.8	0.5	-0.8	-0.4	3.1	3.1	3.3	1.6	-0.9	1.0	0.0

TOGETHER

Domestic savings ratio	19.2	15.3	12.8	13.8	12.7	14.0	14.9	14.6	16.6	14.8	13.8	14.1
Foreign savings ratio	0.3	7.0	7.1	7.0	2.9	3.9	4.8	4.5	1.4	5.7	6.0	5.9
Incremental capital-output ratio	6.6	4.9	5.8	5.3	4.2	6.6	5.9	6.2	5.5	5.4	5.8	5.6
<u>Growth Rates</u>												
Gross national product	3.5	4.6	3.7	4.3	3.7	2.2	3.9	3.2	3.6	3.5	3.8	3.8
Population	2.6	2.7	2.7	2.7	2.5	2.8	2.9	2.9	2.5	2.8	2.7	2.8
Per capita GNP	0.9	1.9	1.0	1.6	1.2	-0.6	1.0	0.3	1.1	0.7	1.1	1.0

	<i>Oil Exporters Sub-Saharan Africa</i>				<i>Sub-Saharan Africa</i>				<i>LDCs in Other Regions</i>			
Domestic savings ratio	19.8	32.8	29.9	31.0	17.6	24.0	22.0	22.7	16.5	16.9	19.7	18.6
Foreign savings ratio	-0.6	-5.4	-3.5	-4.3	0.8	0.0	1.1	0.7	3.6	8.2	5.7	6.8
Incremental capital-output ratio	2.1	3.6	16.5	6.3	3.3	4.2	9.6	6.0	3.9	4.9	4.9	4.9
<u>Growth Rates</u>												
Gross national product	6.3	6.7	1.0	4.2	4.9	5.3	2.3	4.1	5.8	5.2	5.0	5.1
Population	2.4	2.5	2.4	2.5	2.7	2.7	1.6	2.7	2.6	2.4	2.5	2.4
Per capita GNP	3.9	4.2	-1.4	1.7	2.2	2.6	-0.3	1.4	3.2	2.8	2.5	2.7

^aSource: World Bank data base.

a year in the 1973–79 period, with incremental capital–output ratios of 4.9, domestic savings ratios of 18.6%, and foreign savings ratios of 6.8%.

Finally, the oil-exporting countries of sub-Saharan Africa translated much of the favorable balance-of-payments effects of external shocks into domestic savings that equaled 31.0% of GDP and were only partly offset by a foreign savings ratio of –4.3%. However, given the high incremental capital–output ratio (6.3), GNP growth rates averaged only 4.2% between 1973 and 1979.

Of further interest are changes in growth performance between the pre- and post-1973 periods. Low-income sub-Saharan African countries experienced a decline in their rate of economic growth, from 4.0% in 1963–73 to 1.6% in 1973–76, followed by an increase to 3.5% in 1976–79. The increased inflow of foreign capital offset the decline in domestic savings ratios but, despite an improvement in the latter half of post-1973 period, incremental capital–output ratios rose to a considerable extent. The deterioration of economic performance was even more pronounced in Eastern Africa while improvements are shown in Western Africa.

Middle-income oil-importing countries of sub-Saharan Africa experienced gains over time, with rates of growth of GNP averaging 4.2% in 1973–76 and 3.9% in 1976–79 compared to growth rates of 3.4% in 1963–73. This improvement occurred as a slight decrease in the domestic savings ratio was more than offset by the increased inflow of foreign capital and incremental capital–output ratios declined. Growth performance improved in both Eastern and Western Africa, with incremental capital–output ratios falling in the first case and domestic savings ratios rising in the second.

Less developed countries in other regions experienced a slight rise in domestic savings ratios and a near-doubling of foreign savings ratios. However, increases in domestic investment were more than offset by a rise in incremental capital–output ratios, so that GNP growth rates declined from 5.8% in 1963–73 to 5.2% in 1973–76 and, again, to 5.0% in 1976–79. As a result of these changes, differences in GNP growth rates between less developed countries in other regions and the comparable middle-income oil-importing countries of sub-Saharan Africa decreased over time.

With higher domestic savings, the oil-exporting countries of sub-Saharan Africa increased the share of investment in the gross domestic product to a considerable extent after 1973. But this was much exceeded by the rise in incremental capital–output ratios and, after a temporary

increase to 6.7% in 1973–76, the rate of economic growth fell from 6.3% in 1963–73 to 1.0% in 1976–79.

CONCLUSIONS

This article analyzed the policy experience of sub-Saharan African countries during the 1973–78 period of external shocks, with distinction made between oil-importing and oil-exporting and, within the first group, between middle-income and low-income, countries. Information was also provided on the experience of a group of less developed countries in other regions, which are comparable to the middle-income countries of sub-Saharan Africa in terms of per capita incomes.

Adjustment to external shocks in low-income sub-Saharan African countries took largely the form of reductions in imports through decreases in the rate of economic growth and in the income elasticity of import demand while these countries lost export market shares. Losses in export market shares and the extent of import substitution were smaller in the oil-importing middle-income countries of sub-Saharan Africa, which further accelerated their economic growth by utilizing additional net external financing in excess of the balance-of-payments effects of external shocks. The latter observation also applies to less developed countries in other regions, which experienced negative import substitution although they did not lose export market shares.

Compared to less developed countries in other regions, one thus finds greater reliance on import substitution and lesser reliance on export promotion in the oil-importing countries of sub-Saharan Africa and, in particular, in the low-income countries of the region. These results may be explained by the existence of a considerable bias in the system of incentives against exports.

In view of the favorable effects of the exports on economic growth, which have been reconfirmed by the statistical results of this article, there appears to be need for reducing the extent of the anti-export bias in sub-Saharan Africa. This conclusion also applies to the oil-exporting countries of the region, which have lost market shares in agricultural exports during the period under consideration.⁸

⁸For a detailed discussion of the existence of a bias against exports and on the need to reduce this bias in sub-Saharan Africa, see the report prepared under the direction of Elliot Berg (World Bank 1981). The differential experience of sub-Saharan African countries applying different economic policies is examined in the companion paper referred to earlier.

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APPENDIX: ESTIMATING THE BALANCE OF PAYMENTS EFFECTS OF EXTERNAL SHOCKS AND OF SHORT-TERM POLICY RESPONSES TO THESE SHOCKS

In developing the analytical framework designed to examine the balance-of-payments effects of external shocks and of policy responses to these shocks, the point of departure is the balance-of-payments identity. This is defined in terms of the resource gap that equals the deficit in merchandise trade and in nonfactor service items combined, with further adjustment made for private transfers; the resource gap is financed by the net flow of external financing.

The resource gap is shown in equations (1) and (2) for years 0 and 1, respectively. In the equations, M and X denote merchandise imports and exports, valued in base year (0) prices; P_{01}^m and P_{01}^x represent percentage changes in import and export prices between years 0 and 1; and S and R refer to the balance of nonfactor services and private transfers and to the resource gap, respectively, valued in terms of current prices.

$$R_0 = M_0 - X_0 - S_0 \quad (1)$$

$$R_1 = M_1(1 + P_{01}^m) - X_1(1 + P_{01}^x) - S_1 \quad (2)$$

Taking the difference between equations (2) and (1) and rearranging terms, we express changes in the resource gap between years 0 and 1 in equation (3) in terms of changes in import and export prices for the volume of imports and exports in period 1 ($P_{01}^m M_1 - P_{01}^x X_1$), changes in the volume of imports ($M_1 - M_0$), changes in the volume of exports ($X_1 - X_0$), and changes in the balances of nonfactor services and private transfers ($S_1 - S_0$).

$$R_1 - R_0 = (P_{01}^m M_1 - P_{01}^x X_1) + (M_1 - M_0) - (X_1 X_0) - (X_1 - S_0). \quad (3)$$

Equation (3) is modified if we examine the effects of policy measures taken at home and abroad. As a first step, we introduce hypothetical exports (X_1^h), which are would be reached if the country in question maintained its base-year share in world markets. Now, differences between actual and hypothetical exports ($X_1 - X_1^h$), shown on the left-hand side of equation (4), are taken to have resulted from domestic policy actions as regards exports.

$$(R_1 - R_0) + (X_1 - X_1^h) = (P_{01}^m M_1 - P_{01}^x X_1) + (M_1 - M_0) - (X_1^h - X_0) - (S_1 - S_0). \quad (4)$$

Next, we introduce the effects of changes in foreign demand. For this purpose, we calculate the trend value of exports (X_1^t) on the assumption that the trend of foreign export demand remained the same as in the base period and the country under consideration maintained its export share unchanged. The difference between trend and hypothetical values ($X_1^t - X_1^h$), shown on the right-hand side of equation (5), thus represents the effects of the external shock due to changes in foreign demand on the country's exports. (Since this export shortfall adds to the deficit, it is shown with a positive sign.)

$$(R_1 - R_0) + (X_1 - X_1^h) = (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^h) + (M_1 - M_0) - (X_1^t - X_0) - (S_1 - S_0). \quad (5)$$

In turn, hypothetical imports (M_1^h) are calculated for the actual growth rate of GNP in the country concerned on the assumption that the income elasticity of import demand remained the same as in the base period. Differences between hypothetical imports (M_1^h) and actual imports (M_1), shown in equation (6), are taken to reflect the effects of import-substituting policies.

$$(R_1 - R_0) + (X_1 - X_1^h) + (M_1^h - M_1) = (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^h) + (M_1^h - M_0) - (X_1^t - X_0) - (S_1 - S_0). \quad (6)$$

Furthermore, we calculate the trend value of imports on the assumptions that the income elasticity of import demand and the rate of growth of GNP remained the same as in the base period (i.e., no change in the rate of growth of imports). Differences between the trend value of imports and hypothetical imports ($M_1^t - M_1^h$), shown on the left-hand side of the equation (7), are assumed to reflect the effects of changes in the rate of growth of GNP on imports.

$$(R_1 - R_0) + (X_1 - X_1^h) + (M_1^h - M_1) + (M_1^t - M_1^h) = (P_{01}^m - P_{01}^x X_1) + (X_1^t - X_1^h) + (M_1^t - M_0) - (X_1^t - X_0) - (S_1 - S_0). \quad (7)$$

The difference between the trend values for imports and exports adjusted for the actual balance of nonfactor services and private transfers equals the amount of net external financing that would have been necessary in the absence of external shocks and policy responses to these shocks (the trend value of the resource gap, R_1^t). In turn, the sum of differences between trend values and actual values of imports and exports equals the difference between the trend value of the resource gap and its actual value in the base year.

Introducing the trend value of the resource gap and rearranging terms, we show the excess of the actual resource gap over its trend value on the left-hand side of equation (8). This is taken to represent the additional inflow of external funds associated with the balance-of-payments effects of external shocks (additional net external financing).

$$\begin{aligned} (R_1 - R_1^t) + (X_1 - X_1^t) + (M_1^t - M_1) + (M_1^t - M_1^t) \\ = (P_{01}^m M_1 - P_{01}^x X_1) + (X_1^t - X_1^t) + (M_1^t - M_0) \\ - (X_1^t - X_0) - (S_1 - S_0) - (R_1^t - R_0). \end{aligned} \quad (8)$$

The last term on the right-hand side of equation (9) equals the sum of the previous three terms and indicates the amount of additional external financing that would have been necessary in the absence of external shocks if exports and imports assumed their trend values and nonfactor services and private transfers their actual values, over and above the inflow of external funds in the base year. The term is shown with a negative sign, so that the last four terms add up to zero and can be omitted.

Under the assumption that the country in question is a price-taker in world markets, the right-hand side of equation (8) is taken to indicate the effects of external shocks on the balance of payments. This is decomposed into effects on the terms of trade ($P_{01}^m M_1 - P_{01}^x X_1$) and on export volume ($X_1^t - X_1^t$). The former is further decomposed into a pure terms of trade effect, calculated on the assumption of balanced trade in base year prices ($P_{01}^m - P_{01}^x$) X_1 , and the effects of increased import prices on unbalanced trade, $(M_1 - X_1)P_{01}^m$.

In turn, the left-hand side of equation (8) consists of terms representing policy reactions to external shocks, including additional net external financing ($R_1 - R_1^t$), increases in the country's export share in world markets ($X_1 - X_1^t$), import substitution ($M_1^t - M_1$), and the effects of lower GNP growth rates on the country's imports ($M_1^t - M_1^t$).

In the case of manufactured exports, the effects of lower growth rates of GNP abroad and the effects of changes in the foreign income elasticity of demand for these exports have further been distinguished. This has involved calculating the constant-price value of the exports of manufactured goods by developing countries to developed countries, developing countries, and centrally planned economies that would have been obtained if the income elasticity of import demand in these areas remained the same as in the base period (X_{mi}^c).

Assuming further that the country in question maintained its share in the manufactured exports of the developing countries unchanged, the difference between the trend value of manufactured exports and the constant-income-elasticity value of the exports of manufactured goods ($X_{m1}^t - X_{m1}^c$) is taken to reflect the effects of changes in GNP growth rates abroad. In turn, the difference between constant-income-elasticity exports and hypothetical exports ($X_{m1}^c - X_{m1}^h$) represents the effects of changes in foreign income elasticities of demand for the manufactured exports of the developing countries. Again, a positive sign denotes an export shortfall.

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