PRINCETON STUDIES IN INTERNATIONAL FINANCE

No. 68, October 1990

THE ECONOMIES OF AFRICA AND THE PRICES OF THEIR EXPORTS

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International Finance Section

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Library of Congress Cataloging-in-Publication Data

Gersovitz, Mark.
The economies of Africa and the prices of their exports / Mark Gersovitz and Christina H. Paxson.
p. cm.—(Princeton studies in international finance, ISSN 0081-8070 ; no. 68)
Includes bibliographical references (p.
ISBN 0-88165-240-7
1. Exports—Prices—Africa, Sub-Saharan. 2. Africa, Sub-Saharan—Economic conditions—1960- 3. Africa, Sub-Saharan—Economic policy. I. Paxson, Christina H. II. Title. III. Series.
HF3876.5.G47 1990
382′.6—dc20 90-5263
CIP

Printed in the United States of America by Princeton University Press at Princeton, New Jersey.

International Standard Serial Number: 0081-8070
International Standard Book Number: 0-88165-240-7
Library of Congress Catalog Card Number: 90-5263

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1 INTRODUCTION

The economic performance of sub-Saharan African countries over the three decades since independence has in general been poor compared with many other low-income economies.[1] Many of these countries have experienced sustained declines in their already low per capita incomes. A very large number have not met scheduled payments owed to their international creditors and have been involved in debt renegotiations; they are widely perceived by private lenders to be bad credit risks and no longer have access to voluntary lending. These observations raise many issues of cause and consequence, but in this study we seek to analyze only one dimension, the effect of export prices on various aspects of economic performance and the implications of the determinants of these prices for economic policy.

Primary commodities dominate the export earnings of the countries of sub-Saharan Africa, and the prices of primary commodities have been unusually low recently. In very many cases in 1986-87, a given amount of a primary commodity bought less than half what it bought on average during the preceding thirty-five years. The current situation therefore has large implications for many dimensions of the economic performance of these countries. The most important of these is that the decline in the international prices of primary commodities represents a very large cut in the purchasing power of these countries. On average, individuals in these countries find that their standard of living has fallen.

The way that declines in commodity prices affect various sectors of the economy within these countries depends critically on how governments intervene in commodity markets. In most African countries, governments collect a substantial portion of their revenues from exports. They tax trade flows or producers of exportables, or they set up marketing boards that control producer prices. When the government acts in these ways, changes in world prices do not result in one-for-one changes in the prices that producers face. Instead, changes in world prices affect both government reve-

We would like to thank Henry S. Bienen, Anne C. Case, Angus S. Deaton, Joshua Green, Jeff Herbst, and Howard Pack for their comments.

[1] Data permitting, our subject is all the countries of Africa, including such nearby islands as Madagascar and Mauritius but excluding the Arab countries of North Africa and the Republic of South Africa. We will use the term sub-Saharan Africa or just Africa to refer to these countries, and they correspond roughly to the countries encompassed by the Africa of the World Bank and other international organizations.

nues and producers' incomes, often with the greater impact on the government.

If falling commodity prices have a severe impact on a government's revenues, it cannot perform economic functions, and current production and future growth are impaired. Individuals who work for the government suffer. If, instead, the export sector bears the brunt of price declines, the standard of living of producers falls, and they respond by producing fewer exports. International loans and foreign aid can buffer the impact of price declines on these countries, but the servicing of past debts magnifies the threat to their economic performance. Furthermore, debt service is itself a dimension of economic performance that is affected by international prices, and that concerns many parties: the countries themselves, their official and private creditors, and institutions such as the International Monetary Fund and the World Bank.

Chapter 2 describes the composition of the exports of African countries. It shows which primary commodities have been important in their export earnings, and it looks for evidence of past change in the composition of exports or reasons to suppose that there will be change in the near term.

Chapter 3 describes the structure of commodity markets that are important to African countries. It begins by discussing the small-country assumption and its presumed applicability to Africa. Subsequent sections discuss qualifications of this assumption suggested by particular commodity markets where individual African producers may have large shares of world exports or production, international commodity agreements may be important, or the policies of the European Community (EC) and the United States may have an impact. This discussion leads to an assessment of the factors that determine the shadow prices of exports for African countries, an extremely important guide to pricing and investment policy.

Given the importance of commodity prices and given recent developments, the next question is whether these prices are likely to recover toward the average values that prevailed over the last thirty-five years, stay where they are, or decline even further. After a review of some rather inconclusive theoretical arguments concerning the prospects for commodity prices, Chapter 4 describes in some detail the evolution of commodity prices over the last three decades. Such a description tells what has happened, but not why or what it bodes in terms of the trend in these prices, their persistence, and their variability. A formal statistical analysis of the data is needed to answer these last two questions, and it is presented in section 4C. An understanding of the time-series properties of commodity prices is important for policymaking because they bear upon whether current shortfalls in income should be reflected largely in lower consumption or in lower investment and on relations between African countries and international lenders.

The effects of international commodity prices on economic performance are considered in Chapter 5. It begins with an overview of the issues, then turns to the division of the initial impact of a change in export prices between the government and private sectors and their responses to it. Chapter 6 concludes by examining the relationships among export earnings, other elements of the balance of payments, and economic performance through an analysis of the sources and uses of foreign exchange.

Before turning to the analysis, it is useful to keep in mind the difficulties with respect to data that confront any inquiry into economic conditions and prospects in Africa. These countries are poor and lack sufficient resources to devote to the collection of statistics. As a result, information on their economies is limited in scope and quality and is not available in a timely fashion.[2] Not all African countries report on a regular basis in the standard international compendia of economic data. Nationally produced documents are late and sketchy. For these reasons, the tables and other information in this study cannot be comprehensive.

[2] See Yeats (1989) on trade data.

2 PRIMARY COMMODITIES OF IMPORTANCE TO AFRICA

A The Composition of Export Earnings

The export sectors of African economies are very important to the performance of their economies. Exports account for a very large fraction of total production in Africa, providing a quarter or more of the GNP in 14 of 27 countries (Table 1). Changes in the prices of exports can therefore have large effects on the total incomes of these countries. Similarly, growth in exports can contribute significantly to the growth of GNP as a whole. Of 29 African countries on which the United Nations Conference on Trade and Development (UNCTAD) reports (Table 2), 17 increased the quantity of their exports between 1960-73 and 1982-85, while 12 actually experienced a decline.

African countries depend predominantly on primary commodities for their export revenues: food products, agricultural raw materials, crude petroleum, and minerals. Furthermore, each African country exports an extremely narrow range of primary commodities. In 1982-84, for instance, 20 out of 33 African countries earned 50 percent or more of their total export revenues from just one primary commodity (Table 3), and nine of these earned 75 percent or more from just one commodity. All but four of the countries earned at least 50 percent of their export revenues from no more than three commodities. Three of the four exceptions (Kenya, Senegal, and the Seychelles) produce and export refined petroleum products based on imported crude; these exports are really more in the nature of re-exports.

Many primary commodities are important for more than one of the countries. Cocoa, coffee, sugar, tea, groundnuts, cotton, and animals and their products are significant agricultural exports for three or more countries. Crude petroleum, copper, diamonds, and iron ore are important for at least two countries.

B Developments in the Composition of Exports

Since independence, there has been no revolutionary continent-wide change in the reliance of African countries on primary commodities to generate export earnings. In 1966-73, 15 out of 32 countries depended on a single primary commodity for 50 percent or more of their export revenues. The situation is very much the same now. Nonetheless, there have been some noteworthy changes in the composition of the exports of individual countries.

First, the post-independence period has seen the rise of crude petroleum as the dominant export of Angola, the Congo, Gabon, and Nigeria, and, to a lesser extent, Cameroon. A few other countries in Africa, such as the Ivory Coast, have some crude-petroleum reserves.

Crude petroleum was already of considerable importance in the Congo, Gabon, and Nigeria before 1973, but the increase in oil prices has meant that almost all the export revenues of these countries have come from this single source since 1973. Not only has the value of oil exports been so large as to dwarf traditional exports in relative terms, but traditional exports have declined even in absolute terms in some countries with oil revenues.

In the extreme, a country may become an importer of a commodity that it previously exported. Nigeria is a case in point, having gone from being an exporter of groundnut and palm oils even as late as the early 1970s to being an importer of these products by the late 1970s. Chapter 5 discusses the general-equilibrium mechanisms at work in this and other responses to changes in export opportunities.

Because crude petroleum is an exhaustible resource, its relative importance in the exports of these countries will diminish in the future. In fact, at rates of production prevailing in 1987, current proven reserves at the end of 1987 would last only 9 years in Angola, 8 years in Cameroon, 17 years in the Congo, 11 years in Gabon, and 35 years in Nigeria (*Oil & Gas Journal*, Tulsa, December 1987). Of course, proven reserves do not measure the maximum amount of petroleum that can be extracted, because additional reserves can be proved through exploration. Nonetheless, it is clear that some African countries are exhausting their proven reserves at rates that are high relative to oil producers elsewhere, particularly many of the Arab producers. Furthermore, if oil prices remain low relative to the recent past, the incentives to add to proven reserves in Africa will be small even if it is possible to do so.

A second change in the composition of the exports of some African countries has been an increase in the processing of traditional export commodities. The Ivory Coast exported 18 percent (by value) of its cocoa products in the form of cocoa paste and cocoa butter in 1985; in the early 1960s it exported only unprocessed cocoa. Ghana also processes some of its cocoa prior to export, but to a lesser extent. Senegal has increased its exports of groundnut oil and groundnut cake relative to its exports of unshelled groundnuts to the point that most of its output is exported in processed form. Nevertheless, most primary products are still exported in an unprocessed state or after the minimum processing required to prevent deterioration or obtain gross reductions in weight prior to export. Nor are there

TABLE 1

BASIC ECONOMIC INDICATORS FOR AFRICAN COUNTRIES, 1984

Country	GNP per Capita [a]	Percent Growth of Real GNP per Capita [b]	Percent Exports in GNP [c]
Benin	$ 270	1.0	18
Botswana	960	8.4	61
Burkina Faso	160	1.2	18
Burundi	220	1.9	9
Cameroon	800	2.9	32
Cape Verde	320	...	...
Central African Republic	260	−0.1	25
Congo	1,140	3.7	64
Ethiopia	110	0.4	12
Gabon	4,100	5.9	...
Gambia	260	1.0	...
Ghana	350	−1.9	11
Guinea	330	1.1	25
Guinea-Bissau	190	...	...
Ivory Coast	610	0.2	46
Kenya	310	2.1	26
Lesotho	530	5.9	...
Liberia	470	0.5	40
Madagascar	260	−1.6	16
Malawi	180	1.7	27
Mali	140	1.1	23
Mauritania	450	0.3	48
Mauritius	1,090	2.7	48
Niger	190	−1.3	22
Nigeria	730	2.8	16
Rwanda	280	2.3	...
Sao Tome and Principe	330	−1.6	...
Senegal	380	−0.5	29
Sierra Leone	310	0.6	17
Somalia	260	...	...
Sudan	360	1.2	10
Tanzania	210	0.6	...
Togo	250	0.5	31
Uganda	230	2.9	11
Zaire	140	−1.6	...
Zambia	470	−1.3	37
Zimbabwe	760	1.5	22

[a] 1984, in U.S. dollars.

[b] 1965-84.

[c] 1984.

NOTE: ... indicates data not available.

SOURCE: World Bank, *World Development Report, 1986*, Washington, 1986.

TABLE 2

UNCTAD INDEXES OF EXPORT QUANTITIES AND TERMS OF TRADE
(1960-73 = 100)

Country	Export Quantities			Terms of Trade		
	1974-79	1980-81	1982-85	1974-79	1980-81	1982-85
Benin	85	100	81	85	62	57
Burkina Faso	159	189	157	102	89	92
Central African Republic	97	135	133	143	119	104
Cameroon	115	111	127	108	118	113
Chad	89	65	73	133	121	123
Congo	63	109	132	379	610	590
Ethiopia	106	131	128	105	59	62
Gabon	147	111	116	323	551	535
Gambia	149	71	109	100	85	97
Ghana	78	71	60	150	106	81
Ivory Coast	159	154	146	131	116	118
Kenya	106	90	79	113	93	90
Liberia	172	166	141	63	43	45
Madagascar	114	82	74	98	79	82
Malawi	165	213	178	94	74	90
Mali	210	288	278	105	93	97
Mauritania	177	196	290	66	53	53
Mauritius	139	163	210	135	83	75
Niger	335	795	487	85	60	55
Nigeria	161	123	87	332	583	526
Rwanda	185	224	313	133	113	91
Senegal	91	71	92	159	112	101
Sierra Leone	69	67	51	95	69	68
Somalia	166	198	150	72	64	70
Sudan	72	63	68	121	110	98
Togo	108	156	128	234	141	124
Uganda	67	39	55	122	106	104
Zaire	100	82	79	84	64	60
Zambia	102	94	78	75	50	42

SOURCE: UNCTAD, *Handbook of International Trade and Development Statistics*, Geneva, 1982 and 1986 Supplements. The data reported in 1986 run from 1972 to 1985 and have a base year of 1980. The data reported in 1982 run from 1960-80 and have a base year of 1975. Export quantities from 1972 on were taken directly from the 1986 data source. Export quantities from 1960 to 1971 were rebased, by computing the average ratio between the 1972 and 1973 numbers from the 1975-based and 1980-based series and scaling the 1960-71 numbers by this ratio. After rebasing, average export quantities and terms of trade were computed for the subperiods 1960-73, 1974-79, 1980-81, and 1982-85. The averages for the latter three subperiods were then divided by the 1960-73 averages.

TABLE 3

SHARES OF COMMODITIES IN COUNTRIES' TOTAL EXPORTS

(in percent)

Country	1966-73	1974-79	1980-81	1982-84
Benin:				
Cocoa	12	15	11	5
Cotton	17	24	23	19
Palm products	32	23	33	20
Total	61	62	67	44
Botswana:				
Meat	...	27	13	12
Diamonds	...	36	51	64
Copper-nickel matte	...	23	22	10
Total		86	86	86
Burkina Faso:				
Animal & p	47	30	22	10
Cotton	20	31	42	51
Total	67	61	64	61
Burundi:				
Coffee	82	88	89	87
Cameroon:				
Cocoa	24	27	19	12
Coffee	25	28	19	15
Wood	8	9	8	6
Crude petroleum	0	9	35	43
Total	57	73	81	76
Central African Republic:				
Cotton	21	13	20	17
Coffee	19	30	31	36
Wood	10	24	35	25
Diamonds	42	28	36	28
Total	92	95	122	106
Congo:				
Wood	53	15	8	5
Crude petroleum	6	75	99	95
Diamonds	17	3	...	...
Total	76	93	107	100
Ethiopia:				
Coffee	53	56	61	62
Hides	11	10	12	10
Total	64	66	73	72
Gabon:				
Crude petroleum	31	74	76	77
Manganese	21	8	6	5
Total	52	82	82	82

TABLE 3 (*Continued*)

Country	1966-73	1974-79	1980-81	1982-84
Gambia:				
Groundnuts & p	92	84	54	50
Ghana:				
Cocoa	55	60	56	57
Wood	11	8	3	3
Aluminum	8	8	20	...
Total	74	76	79	60
Ivory Coast:				
Cocoa & p	21	27	32	30
Coffee & p	32	30	20	20
Wood & p	26	18	16	11
Total	79	75	68	61
Kenya:				
Coffee	18	26	21	25
Tea	11	12	11	19
Petroleum products	12	19	32	22
Total	41	57	64	66
Liberia:				
Rubber	15	14	17	16
Iron ore	70	64	57	63
Diamonds	9	6	5	4
Total	94	84	79	83
Madagascar:				
Cloves	7	14	14	13
Coffee	29	38	44	39
Vanilla	8	7	7	19
Total	44	59	65	71
Malawi:				
Sugar	1	10	19	8
Tea	21	18	13	17
Groundnuts & p	11	5	6	1
Tobacco	31	47	42	53
Total	64	80	80	79
Mali:				
Animals & p	28	15	22	...
Groundnuts & p	16	14	4	1
Cotton	28	47	43	40
Total	72	76	69	41
Mauritania:				
Fish	7	11	29	48
Iron	81	81	71	52
Total	88	92	100	100

TABLE 3 (*Continued*)

Country	1966-73	1974-79	1980-81	1982-84
Mauritius:				
Sugar	92	76	63	64
Niger:				
Animals & p	14	14	9	4
Groundnuts & p	48	4	0	0
Uranium	9	70	82	83
Total	71	88	91	87
Nigeria:				
Cocoa	14	4	2	2
Crude petroleum	52	92	96	100
Total	66	96	98	102
Rwanda:				
Coffee	53	69	50	67
Tea	5	9	10	12
Tin	24	8	10	10
Total	82	86	70	89
Senegal:				
Fish	7	11	21	17
Groundnuts & p	44	32	9	17
Petroleum products	3	9	23	19
Phosphates	9	17	15	9
Total	63	69	68	62
Seychelles:				
Cinnamon bark	36	7	2	2
Copra	30	17	14	7
Petroleum products	19	48	71	75
Total	85	72	87	84
Sierra Leone:				
Cocoa	3	10	11	14
Coffee	5	11	13	8
Diamonds	61	56	52	36
Total	69	77	76	58
Somalia:				
Animals	49	67	102	75
Bananas	28	13	5	7
Total	77	80	107	82
Sudan:				
Groundnuts & p	8	14	10	4
Sesame	8	9	10	9
Cotton	58	53	32	41
Gum arabic	9	7	8	8
Total	83	83	60	62

TABLE 3 (*Continued*)

Country	1966-73	1974-79	1980-81	1982-84
Swaziland:				
Sugar	25	39	42	38
Pulp	17	18	15	18
Total	42	57	57	56
Tanzania:				
Coffee	16	29	27	34
Cotton	15	13	11	14
Sisal	9	9	6	4
Total	40	51	44	52
Togo:				
Cocoa	30	19	13	15
Coffee	17	11	8	7
Petroleum products	...	4	14	1
Phosphates	39	58	46	51
Total	86	92	81	74
Uganda:				
Coffee	50	85	99	92
Cotton	21	7	1	...
Total	71	92	100	92
Zaire:				
Coffee	6	12	14	20
Cobalt	8	16	18	5
Copper	62	44	43	39
Diamonds	5	7	6	16
Total	81	79	81	80
Zambia:				
Copper	93	89	96	89

NOTES: For "& p" see Appendix B under "Country Data." Country totals above 100 reflect problems in the IMF data. Average shares are computed over the years 1966-84 for all countries except Benin, Cameroon, Congo, Mauritius, Niger, Rwanda, and Zaire (1966-83); Botswana (1974-84); Seychelles (1970-84).

SOURCE: IMF, International Financial Statistics data tape, 1987, with modifications discussed in Appendix B.

signs of increased processing in Africa, or reasons to expect them. It is widely believed that the structure of protection in developed countries favors the export of unprocessed commodities, although African countries enjoy the preferential access to these markets granted to developing countries, in general, and by the European Community to its associated members, in particular (Yeats, 1984).

A final development in the composition of the exports of some African countries is the appearance of, or relative increase in, manufactured exports. This phenomenon, however, is limited. The notable examples are Mauritius for clothing (22 percent of exports in 1982-83), Benin for shoes (38 percent of exports in 1982-83), and Kenya, Senegal, and the Seychelles for refined petroleum products.

C Intra-African Linkages

Generally, African countries can be seen as exporting their primary products to non-African markets, and the prices that they get for their exports are largely determined in world markets. There are, however, some economic linkages among African countries, with the consequence that there may be secondary effects on one country of changes in the prices of commodities exported by its neighbors.

Labor migration creates a very considerable economic linkage among many African countries. For example, agricultural workers in the Ivory Coast come from Burkina Faso and elsewhere. Expulsions of Ghanaians from Nigeria in the 1980s have underlined the importance of migration into Nigeria and its risks. The countries of southern Africa send large numbers of temporary workers to the South African mines. These and other migrants, their dependents back home, and others in their home countries are affected by the prices received for exports by the African countries to which they migrate.

Some African countries are important markets for other African countries. Nigeria, with its large population, is a local market of importance to its neighbor, Niger. In the 1980s, Niger earned between 10 and 20 percent of its total export revenues from sales to the Nigerian market, a very large fraction of its export revenues from commodities other than uranium. Niger's exports to Nigeria depend on economic conditions in Nigeria, and therefore on the price of crude petroleum, a commodity Niger does not export at all.

Finally, there are important linkages among African countries through the smuggling of primary commodities that are later exported from the receiving country. This is another mechanism by which an African country is affected by movements in the international prices of commodities that it does not necessarily produce. There are some notorious examples. The Congo produces no diamonds, and yet diamonds smuggled from Zaire to the Congo accounted for 17 percent of the value of the Congo's exports in 1966-73. Cocoa is smuggled from Ghana to the Ivory Coast, and coffee is smuggled out of Ethiopia and Uganda to neighboring countries. In each case, movements in the prices of smuggled commodities in international markets, relative to the markets of origin, affect the countries into which the commodities are smuggled.