

# Readings in the Applied Economics of Africa

VOLUME 2 : MACRO-ECONOMICS

EDITED BY EDITH H. WHETHAM AND JEAN I. CURRIE



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# READINGS IN THE APPLIED ECONOMICS OF AFRICA

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VOLUME 2: MACRO-ECONOMICS



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## PREFACE

This two-volume collection of *Readings in the Applied Economics of Africa* is designed to supplement courses in economics given in African universities. The purpose of teaching economics is to help students to understand the working of the countries in which they will eventually become business men, lawyers, advisers, civil servants and politicians. But the 'principles of economics' are too often memorized for reproduction at examinations, and are too seldom used to illuminate the current problems of rapid change, which are discussed mainly in journals and official reports. Students in the early stages of university courses cannot be expected to consult a variety of journals, even if available in their libraries, which may not be the case in new universities; further, librarians are finding difficulty in obtaining information about other African countries. There is therefore a need for a selection of papers illustrating the economy of African countries, papers which can be used in conjunction with standard text-books.

In Volume 1—Micro-economics, the use of resources is considered from the angle of the firm or the farm. Parts I and II deal respectively with agriculture and with industry, and Part III considers prices and markets, through which goods and services are exchanged and incomes are earned.

Volume 2—Macro-economics, contains papers concerned with the framing and implementation of economic policy. Part IV illustrates the problems encountered in compiling and using the national accounts of African countries. Part V is devoted to public finance, banking and the balance of payments; Part VI, dealing with economic development, includes papers on population, export trades and import-saving industries, employment and inflation.

The selection made by the editors from the mass of material now published has been determined by many factors, including topic, length, suitability for student discussion, geographical coverage and ease of access; they express their thanks to those authors who have allowed their work to be reprinted here, and to the editors of the journals concerned. For each paper, only those references have been included which are mentioned in the extracts printed. It has not been thought necessary to provide an index, but the scope of each paper has been indicated briefly in the List of Contents.

## Preface

The editors have in preparation a companion text-book which will be published shortly by the Cambridge University Press under the title *The Economics of African Countries*.

December 1966

E. H. W.

J. I. C.

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## PART IV

### NATIONAL ACCOUNTS

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#### 19. NIGERIAN NATIONAL ACCOUNTS, 1950-7

P. OKIGBO\*

##### The structure of the accounts

##### 1. *Interdependence of the output and expenditure estimates*

... The Nigerian national accounts refer to the gross domestic product obtained from two methods which were highly interdependent. Our estimates of the national expenditure on product are obtained substantially from our output estimates. Some independent estimates of expenditure, for instance on food, could be obtained from household budget studies available for several large townships for single years, and from cost of living studies available for Lagos for several years. On the whole, however, the budget studies were for different places at different points of time—Enugu 1954, Ibadan 1955—and for very few places at that in a country as large as Nigeria. We did not, therefore, feel justified in using them to build up a series except where we had no alternative. We relied on our figures of output valued at retail market prices to obtain expenditure on food and used the budget studies to cross-check our estimates on particular items.

We thus have in reality only one set of tables, because of the interdependence of our output and expenditure estimates and the absence of income estimates. Our output tables are partially based on expenditure estimates and our expenditure estimates are derived for the most part from output tables. It is to be hoped that as refinements are made in the series we have produced the two accounts will be more independent of each other, so that one can truly be used as a check on the other.

The estimates measure gross domestic product as well as gross national product. The former measure gives the value of production within Nigeria, including the activity of Nigerians temporarily resident abroad as well as that of foreigners temporarily resident in

\* In the preparation of this paper I had the assistance of Mr. Bisi Adu of the Nigerian Institute of Social and Economic Research, Ibadan.

Nigeria. It excludes, however, net income from abroad which enters into the gross national product. A further distinction is often drawn between these two measures already referred to and the territorial (or geographical) product. This last is defined by reference to the value of production within Nigeria plus income of foreigners resident in Nigeria less income of Nigerians resident abroad. Our procedure in defining our gross domestic product makes it evident that we have adopted the territorial or geographical concept. As we made estimates of depreciation for only 1956 and 1957, the net domestic (geographic) and net national product are given for these two years only.

## *2. Regional estimates in a Federal territory*

One feature of the Nigerian accounts was the necessity to provide estimates for each of the political regions which make up the Federation. We found it convenient for statistical reasons to merge Lagos Federal territory with Western Nigeria and Southern Cameroons with Eastern Nigeria, because in many branches of activity it is impossible to maintain the division. On the output side, we built up our national figures in most branches of activity from regional data, whilst in other branches it was easy to split the national figures between the regions, except in the case of value added by trade, to which we shall refer later. We were therefore able to show the output of Northern Nigeria (including Northern Cameroons), Western Nigeria (including Lagos), and Eastern Nigeria (including, wherever it was convenient to do so, Southern Cameroons). We could not show the expenditure on product by region, because we could not identify the extent of interregional trade in foodstuffs. However, we were able to show regional expenditure on a number of sub-aggregates and specific items: domestic fixed investment, drink, tobacco, fuel and light, clothing and other non-durable goods, durable goods, travel, education and miscellaneous services.

## *3. Summary tables for the Federation of Nigeria, 1950-7*

Tables 1 and 2 show the gross domestic (geographic) product of Nigeria, 1950-7, at current and at 1957 (factor) cost; Tables 3 and 4 show respectively the expenditure on product at current and at 1957 market prices. We cannot enter here into the details of the estimation or into an interpretation of our findings. A note of warning is, however, in order. In Table 4 we have left the row of net income

Table 1. *Gross domestic product by branch of activity at current prices (£ million)*

	1950	1951	1952	1953	1954	1955	1956	1957
Agriculture	285.7	323.8	327.0	365.6	427.3	455.8	450.9	471.4
Livestock	37.9	44.3	39.2	42.9	48.7	52.5	57.2	57.7
Fishing	6.3	6.7	6.4	6.3	7.4	9.8	12.8	13.3
Forest products	7.5	10.8	8.8	10.3	11.4	12.2	13.8	14.6
Mining and oil exploration	5.5	10.7	11.4	11.2	11.0	10.2	8.2	9.4
Manufacturing and public utilities	3.3	3.5	4.9	6.4	7.1	8.4	12.2	13.1
Communications	1.9	2.0	2.2	2.4	2.3	2.1	2.9	3.1
Building and civil engineering	8.1	12.2	16.8	17.6	28.0	31.4	36.5	43.0
Ownership of buildings	5.9	6.2	6.4	7.1	7.5	8.8	8.2	10.3
Transport	22.8	26.9	29.3	40.5	45.9	54.2	65.2	74.6
Crafts	15.8	15.9	16.0	16.1	16.2	16.4	16.5	16.7
Missions	3.4	4.0	4.6	5.3	6.0	9.0	12.7	15.9
Government	10.8	11.8	14.3	15.0	16.0	21.3	28.7	30.5
Marketing boards	35.5	19.5	36.5	36.2	51.2	16.3	41.0	11.7
Banking, insurance and the professions	0.7	0.7	0.9	1.1	1.4	1.8	2.1	2.5
Domestic services	2.6	2.6	3.0	3.5	3.9	4.4	5.4	5.5
Miscellaneous services	0.7	0.7	0.7	1.0	1.0	1.2	1.8	2.0
Land development	3.5	3.5	4.0	4.7	5.2	5.9	7.0	8.2
Distribution, residual error, etc.	54.2	67.4	82.1	71.8	76.7	105.8	87.5	106.5
Gross domestic product at factor cost	512.1	573.2	614.5	665.0	774.2	827.5	870.6	910.0
Indirect taxes <i>less</i> subsidies	12.2	13.8	16.3	17.9	20.6	23.7	29.4	28.7
Gross domestic product at market prices	524.3	587.0	630.8	682.9	794.8	851.2	900.0	938.7
Net income from abroad	-3.3	-4.5	-3.0	-3.2	-1.4	-0.6	0.9	4.2
Gross national product at market prices	521.0	582.5	627.8	679.7	793.4	850.6	900.9	942.9

Table 2. *Gross domestic product by branch of activity at 1957 prices (£ million)*

	1950	1951	1952	1953	1954	1955	1956	1957
Agriculture	377.6	415.0	430.5	446.0	471.3	483.9	459.8	471.4
Livestock	60.1	57.7	52.5	53.5	55.7	56.5	57.6	57.7
Fishing	9.7	9.8	9.9	10.0	10.2	10.3	12.6	13.3
Forest products	9.4	12.0	10.1	11.9	12.3	13.4	13.6	14.6
Mining and oil exploration	7.6	7.6	8.2	7.9	8.1	9.0	9.6	9.4
Manufacturing and public utilities	3.9	4.0	5.8	6.3	7.9	8.7	12.0	13.1
Communications	2.7	2.7	3.0	2.9	2.6	2.4	2.6	3.1
Building and civil engineering	20.3	25.4	19.4	25.9	37.8	38.3	36.5	43.0
Ownership of buildings	8.9	9.1	9.2	9.4	9.6	9.7	9.8	10.3
Transport	28.6	34.0	35.3	45.4	50.9	60.2	65.1	74.6
Crafts	15.8	15.9	16.0	16.1	16.2	16.4	16.5	16.7
Missions	6.9	7.0	7.6	7.8	8.7	11.4	12.7	15.9
Government	15.0	16.4	19.9	16.5	17.6	23.4	28.7	30.5
Marketing boards	41.0	10.5	28.0	28.8	42.7	25.0	44.9	11.7
Banking, insurance and the professions	1.5	1.2	1.3	1.7	1.7	2.1	2.2	2.5
Domestic services	4.4	4.4	4.4	4.7	4.8	5.0	5.7	5.5
Miscellaneous services	0.9	1.0	1.1	1.1	1.2	1.5	1.9	2.0
Land development	8.2	8.2	8.2	8.2	8.2	8.2	8.2	8.2
Distribution, residual error, etc.	64.6	98.3	122.6	105.7	104.7	112.7	74.1	106.5
Gross domestic product at factor cost	687.1	740.2	793.0	809.8	872.2	898.1	874.1	910.0

**Table 3. Gross national product by category of expenditure at current prices (£ million)**

	1950	1951	1952	1953	1954	1955	1956	1957
Consumers' expenditure	457.1	514.9	536.5	580.3	673.3	743.1	792.7	815.5
Government expenditure on goods and services	17.3	19.3	24.1	27.2	28.4	41.4	43.8	47.6
Gross fixed investment in Nigeria	30.8	37.8	54.0	58.8	71.5	85.7	101.2	113.0
Increase in marketing boards' stocks	-3.8	4.3	0.3	-0.2	-6.8	5.1	-4.3	9.1
Plus exports of goods and services	88.9	114.2	126.3	128.6	154.3	128.2	135.7	129.1
Final expenditure	590.3	690.5	741.2	794.7	920.7	1003.5	1069.1	114.3
Less imports of goods and services	66.0	103.5	110.4	111.8	125.9	152.3	169.1	175.6
Gross domestic product at market prices	524.3	587.0	630.8	682.9	794.8	851.2	900.0	938.7
Plus net income from abroad	-3.3	-4.5	-3.0	-3.2	-1.4	-0.6	0.9	4.2
Gross national product at market prices	521.0	582.5	627.8	679.7	793.4	850.6	900.9	942.9

**Table 4. Gross domestic product by category of expenditure at 1957 prices (£ million)**

	1950	1951	1952	1953	1954	1955	1956	1957
Consumers' expenditure	609.4	650.2	695.9	717.3	774.6	805.5	798.9	815.5
Government expenditure on goods and services	24.0	26.8	33.5	29.9	31.2	45.5	43.8	47.6
Gross fixed investment in Nigeria	48.4	59.7	75.0	79.9	92.9	102.6	108.0	113.0
Increase in marketing boards' stocks	-7.3	6.3	1.5	-0.1	-6.2	4.6	-4.8	9.1
Plus exports of goods and services	99.9	93.6	111.7	114.8	131.9	126.9	138.5	129.1
Final expenditure	774.4	836.6	917.6	941.8	1024.4	1085.1	1084.4	1114.3
Less imports of goods and services	75.1	82.6	108.3	114.1	131.6	163.3	180.9	175.6
Gross domestic product at market prices	699.3	754.0	809.3	827.7	892.8	921.8	903.5	938.7

Table 5. *Gross fixed investment by type of assets at current prices (£ million)*

	1950	1951	1952	1953	1954	1955	1956	1957
New buildings:								
Dwellings		13.4	18.8	19.5	23.7	27.7	35.3	41.9
Other		3.0	4.7	6.0	9.7	9.3	10.0	12.6
Total		16.4	23.5	25.5	33.4	37.0	45.3	54.5
Civil Engineering works								
Roads		0.4	0.5	0.8	3.3	4.5	1.7	2.5
Bridges		0.2	0.5	0.3	0.8	0.6	0.5	0.3
Maintenance of roads and bridges		0.9	1.0	1.3	1.6	1.8	2.0	2.3
Railways		1.7	2.1	2.0	2.3	2.5	2.5	2.7
Ports, harbours and rivers		0.1	0.1	0.2	0.3	0.5	6.0	1.0
Waterworks and wells		0.8	1.0	1.0	1.0	1.3	1.6	1.6
Other		1.2	2.2	1.7	1.4	2.8	1.0	3.1
Total		5.3	7.4	7.3	10.7	14.0	15.3	13.5
Vehicles								
Road		2.8	4.6	5.0	5.0	6.8	9.7	8.1
Rail		0.7	0.4	0.6	1.4	2.6	1.6	2.1
Water		0.8	0.8	0.9	0.6	0.5	0.5	1.3
Air		0.1	0.5	0.4	0.3	0.9	0.5	0.6
Total		4.4	6.3	6.9	7.3	10.8	12.3	12.1
Plant, machinery and equipment								
Plantations and mineral explorations								
		6.7	10.9	11.9	11.3	13.6	17.8	19.3
		1.5	1.9	2.5	3.6	4.4	3.5	5.4
Total of above		34.3	50.0	54.1	66.3	79.8	94.2	104.8
Land clearance by peasants (imputed)								
		3.5	4.0	4.7	5.2	5.9	7.0	8.2
Total		37.8	54.0	58.8	71.5	85.7	101.2	113.0
		30.8						

Table 6. Gross fixed investment by type of assets at 1957 prices (£ million)

	1950	1951	1952	1953	1954	1955	1956	1957
New buildings:								
Dwellings		17.5	23.3	25.5	29.4	32.3	36.9	41.9
Other		4.5	6.6	7.4	11.3	10.3	10.5	12.6
Total		22.0	29.9	32.9	40.7	42.6	47.4	54.5
Civil engineering works:								
Roads		1.1	1.5	1.8	5.2	6.6	2.0	2.5
Bridges		0.4	0.8	0.5	0.9	0.6	0.5	0.3
Maintenance of roads and bridges		1.8	1.8	2.2	2.4	2.2	2.2	2.3
Railways		5.0	5.8	4.3	3.8	3.7	3.0	2.7
Ports, harbours and rivers		0.2	0.2	0.3	0.4	0.6	6.4	1.0
Waterworks and wells		1.4	1.4	1.3	1.2	1.5	1.7	1.6
Other		1.6	2.6	2.1	1.7	3.1	1.0	3.1
Total		11.5	14.1	12.5	15.6	18.3	16.8	13.5
Vehicles:								
Road		3.7	5.2	5.8	6.0	7.8	9.9	8.1
Rail		0.9	0.4	0.7	1.7	2.9	1.7	2.1
Water		1.0	0.9	1.1	0.7	0.6	0.5	1.3
Air		0.1	0.5	0.5	0.4	1.0	0.5	0.6
Total		5.7	7.0	8.1	8.8	12.3	12.6	12.1
Plant, machinery and equipment								
Plantations and mineral exploration								
Total of above		8.6	12.0	14.0	13.6	14.9	19.1	19.3
Land clearance by peasants (imputed)	8.2	3.7	3.8	4.2	6.0	6.3	3.9	5.4
Total		59.7	75.0	79.9	92.9	102.6	108.0	113.0

from abroad undeflated. It would be evident that the entries in this row are sufficiently small not to cause us any anxiety. Tables 5 and 6 show the gross domestic fixed investment by types of assets.

From Tables 2 and 4 we see that the gross domestic product in real terms increased by 32 per cent between 1950 and 1957. Some branches of activity grew faster than the economy as a whole—manufacturing, public utilities, transport and communications, building and civil engineering construction, and Government each stood in 1957 at over 200 per cent of the 1950 output measured at 1957 prices. By contrast, some of the large sectors, particularly agriculture and livestock, grew at a much slower rate than the economy.

### **Special problems: Methodology**

We now turn to the special problems with which we had to deal in our exercise. Discussion of our project with the potential users of our results in Government showed that almost invariably interest was centred on the following sets of questions: What is the national income per head? How does Nigeria compare with Ghana and other African territories? How much higher is our current standard of living than it was ten years ago? Which region in the country is least well off? In short, in the minds of government officials the use of national income figures was to be dominated by welfare considerations, i.e., by international and intertemporal comparisons of welfare.

#### *The definition of product*

The design of national accounts depends to a large extent on how much we focus on measuring welfare or how much on providing a consistent time series. For measuring welfare we may have to define production in its widest sense to cover all output produced by members of the household whether for themselves or for other households. Prest and Stewart's estimates referred to a single year.\* In the absence of any figures for other years, their estimates for 1950-1 could not be expected to show the movement of the Nigerian economy. It did not, therefore, matter a great deal how large their estimate of the gross domestic product turned out to be. In our view, their focus on measuring welfare led them to the amusing but dubious exercise of measuring intra-household services by reference to the

\* A. R. Prest and I. G. Stewart, *The National Income of Nigeria, 1950-51* (Editors).

number of wives and the average bride price. We decided not to be unduly concerned with welfare questions, because we believed that an articulated and consistent time series would be more meaningful in Nigeria. We therefore defined production much more narrowly in our effort to keep subjective estimates and imputations to a minimum. All identifiable product was thus counted in our gross domestic product, including intra-household activity yielding marketable product, but excluding intra-household services of a general nature. Thus we eliminated the output of drummers, beggars, praisers and housewives—and, for purely statistical reasons, prostitutes.

### *Valuation of agricultural production*

In valuing agriculture output we came up against the same problem in another form. First, Prest and Stewart had chosen to weigh the output of farm crops by retail prices. Second, they chose to value food crops in their most processed form, not because these crops were sold in that form, but because it was considered desirable to extend the coverage of national income to include intra-household services. Third, they chose to use retail prices ruling in or near the place where the output was actually consumed.

Our decisions followed different lines. First, since we wished to focus on constructing a time series of agricultural output we decided that weighting by 'producer' prices was preferable to weighting by retail prices. Second, we had chosen to exclude intra-household services of a general nature and there was, therefore, no question of valuing farm output in its most processed form. Food crops were, therefore, accounted for in their natural state, except cassava, which is sold as 'gari' (grated and baked cassava) in Lagos and Western Nigeria and as 'akpu' (fermented and strained cassava) in Eastern and Northern Nigeria. Third, it became evident to us that in the absence of firm figures of interregional trade in these commodities it would be unreasonable to weight farm output by prices ruling in or near the place where the output was actually consumed. We therefore valued the farm output of each region at a single price ruling in the producing region.

We were still left with the problem of selecting the prices to represent 'producer' prices. Ex-farm prices were non-existent and we had to resort to the more manageable expedient of taking for each crop for each year a simple average of the unweighted average of prices ruling over the year in representative markets in the main producing