PETER KILBY*

PATTERNS OF BREAD CONSUMPTION IN NIGERIA†

The present study is an investigation of the demand for bread and the arrangements for its distribution in tropical Africa's largest country. Beyond its immediate interest as an analysis of bread consumption for some 40 million Africans, the study gives an indication of the nature and strength of forces shaping consumer demand for the larger group of temperate foodstuffs which are exotic to the tropics. Moreover, among new food products bread has made perhaps the greatest inroads into the markets for indigenous staples in developing tropical economies despite its typically higher relative costs: this monograph helps to identify factors responsible for this universal popularity. And finally, owing to its perishability, the bread case is relevant to the introduction of new consumer industries where local supply, rather than the gradual buildup of imports, creates the market; elements in this product innovation include sociological carriers, economic constraints, and a time sequence.

THE PLACE OF BREAD IN THE NIGERIAN DIET AND IN FOOD EXPENDITURES

Nigeria can be divided into two broad dietary zones, based upon rainfall and vegetation, which correspond to the political demarcation between Northern Nigeria and the two southern Regions. Northern Nigeria, an area of dry savannah land, is largely devoted to grain cultivation. Staple food crops are millet, guinea corn, and acha.[1] They are normally ground into flour from which porridge or dumplings are made and eaten with a soup or sauce containing several vegetables, meat or fish, and salt. The southern Regions are humid forest areas well suited to the production of root crops. Accordingly, cassava (manioc) and yams are the staple foods of the area. Cassava is transformed into either gari (peeled, grated, fermented for several days, and fried to produce a dry meal) or foo-foo (soaked for several days, sieved, and boiled to a doughy paste). Yams are usually pounded and then boiled or fried. All these dishes are eaten with a sauce made of palm oil, green leaves, and small quantities of meat or fish. Fresh fruit

* Currently a Foreign Area Fellow at St. Antony's College, Oxford.

† The material in this paper is drawn from a forthcoming study of the Nigerian baking industry. The author wishes to acknowledge the financial assistance of the U.S. Fulbright Commission and the Ford Foundation.

[1] An inferior millet, *Digitaria exilis*, also known as "hungry rice" and *fonio*.

TABLE 1.—PERCENTAGE DISTRIBUTION OF FOOD EXPENDITURES BY INCOME GROUP, LAGOS, 1959–60*

Income group[a]	Number of households	Food as per cent of total expenditure	Composition of food expenditures (*per cent*)					
			Staples	Meat, fish, eggs	Oils and fats	Fruits, vegetables	Other food at home	Bought meals
Lower income								
Under 150	64	46.4	45.4	31.3	3.7	9.1	6.3	4.2
150 to 250	173	46.6	42.4	34.1	4.3	8.0	6.4	4.8
250 to 350	93	41.0	40.6	34.1	4.5	7.5	8.3	5.0
350 to 550	94	41.4	38.6	37.8	4.8	6.8	7.6	4.4
550 and over[b] ...	71	39.4	35.3	38.4	4.8	8.3	7.8	5.4
Middle income								
650 to 950	61	40.3	33.7	37.5	5.8	8.9	9.6	4.5
950 to 1,150	45	42.5	31.8	36.2	5.9	9.5	8.6	8.0
1,150 to 1,350 ...	27	29.7	33.0	34.2	7.0	8.2	9.9	7.7
1,350 to 1,550 ...	13	26.3	32.9	38.3	6.1	10.1	8.1	4.5
1,550 and over ...	3	19.6	30.3	39.1	5.8	8.8	5.7	10.3

* Data from Nigeria, Federal Office of Statistics, *Urban Consumer Surveys in Nigeria: Report on Enquiries into the Income and Expenditure Patterns of Lower and Middle Income Wage-Earner Households in Lagos, 1959–60* (Lagos, 1963), pp. 4, 15, 18, 24, 29, 30.

[a] Basic income per household in shillings per month.

[b] Includes 42 households with basic income over 650 shillings per month.

—bananas, oranges, paw-paw (papayas), mangoes—is also eaten in the South.

The national accounts reveal that for Nigeria as a whole, 70 per cent of consumer income is devoted to the acquisition of food. In Ghana, which is estimated to have tropical Africa's highest per capita income (£85), the figure is 55 per cent. This is about twice the share of income spent on food in developed countries (*6*, pp. 109, 193).

For Nigeria's urban areas, food expenditure patterns can be extracted from household budget studies undertaken by the Federal Department of Statistics (*7*). For the five towns for which complete data are available,[2] the proportion of food outlays to total expenditures on goods and services averaged 46.9 per cent for households of laborers, artisans, and clerks. The highest share of expenditures devoted to food was 61.6 per cent in Kaduna and Zaria for households with a basic income of less than 100 shillings per month. The most recent survey, Lagos 1959–60, included "middle income" households up to a basic monthly income of 1,750*s*. (see Table 1).

The income elasticity of demand for food is notably high—up to a basic income of 1,150*s*. There is the expected shift as incomes increase from the less expensive staples to higher protein foods, oils and fats, and bought meals. Similarly, within each group there is a movement to the preferred, more expensive items: from cassava and millet to yams, rice, and bread in the staples; from beef to pork, mutton, fowl, fish, and eggs in the protein category; and from palm oil to peanut oil, margarine, and butter in the oils and fats group.[3]

[2] The number of households sampled ranged from 389 to 540.

[3] For detailed analyses of urban African food expenditures, see *8*, *9*.

Per capita consumption of bread in Nigeria is approximately 5 lbs. a year, equal to an expenditure of some 5*s*. (*10*, p. 6).[4] However, the bulk of this consumption, almost 90 per cent, occurs in the South, an area containing less than half of the population. On the basis of known baking capacity, inter-regional trade patterns, consumer surveys, and flour shipments to the north, the apportionment of bread consumption is estimated as follows: Lagos 20 per cent, Western Region 38 per cent, Eastern Region 30 per cent, and Northern Region 12 per cent.[5] Within each Region there is a further concentration of bread-eating in the urban areas. And, fortunately, it is for just this group of consumers that some reliable figures are available.

Since 1955 urban consumer surveys have been carried out in thirteen major towns and cities (*7, 11*). For households of laborers, artisans, and clerks the average monthly outlay for bread is 10–12*d*. per individual, representing an annual intake of some 12 lbs. For the high-income groups—senior civil servants, professionals, and the like—the monthly per capita expenditure averages 3*s*., equivalent to an annual bread consumption of 36 lbs.

A quick glance at comparative statistics for other countries furnishes a useful perspective from which to view the Nigerian per capita figure. In spite of the phenomenal growth in bread consumption since 1946 (Chart 1), Nigeria still ranks low among the continent's bread consumers when population is taken into account. Of ten countries in Table 2 Nigeria has the lowest average flour intake. In contrast to Nigeria's and Ghana's apparent per capita flour consumption of 3.9 lbs. and 18.8 lbs., respectively, in 1960, the average figure for Southern Rhodesian Europeans in 1950–51 was 75.6 lbs. (*12*, p. 30).

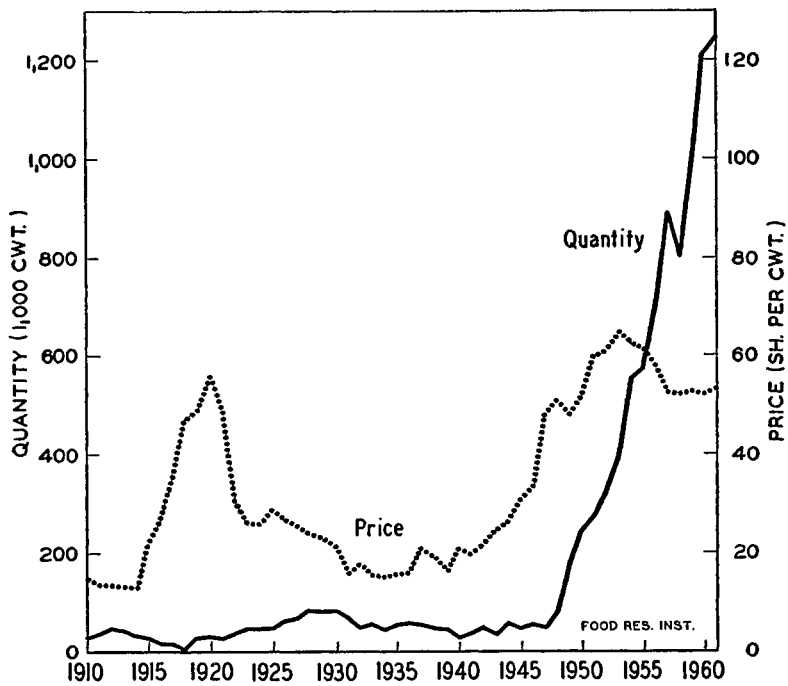
Any attempt to explain the broad differences in levels of flour consumption between these African countries must look beyond the determinants traditionally cited. Variations in income and urbanization are not sufficient to account for the observed disparities in consumption (see Table 2). Two additional conditioning factors must be considered. First, there is an inverse relationship between geographical size (i.e., ease of internal communications) and the speed with which new consumption patterns spread. Thus Sierra Leone and Gambia, despite very low income and little urbanization, exhibit relatively high levels of flour consumption. Conversely Nigeria, with an income-urbanization index roughly comparable to the two smaller territories, has a very much lower flour consumption. Second, the number of European colonizers and the extent to which their cultural values and tastes came to be dominant exert a potent influence upon consumer behavior. This explains the generally higher level, *ceteris paribus*, of bread consumption in the French-speaking countries and among Africans in the multiracial territories.[6]

[4] Based upon a flour-bread conversion ratio of 1.35 and import and population data from *10*.

[5] Earlier estimators, including economists responsible for the national accounts, lacked any information on productive capacity and consequently tended to allocate a higher share to the North—usually about a quarter. Consideration of the following facts, however, strongly suggests a magnitude on the order of the one given above: (1) 10–12 per cent of all flour imports are railed to the North; (2) railway represents by a substantial margin the cheapest carriage from the coast to the North; (3) virtually all of the flour shipments are off-loaded in the urban centers served by commercial bakeries; (4) any flour conversion beyond the 12 per cent would have taken place outside of the bakeries; and (5) wheat flour is several times more expensive than the local grain flours used in native foods.

[6] For consumption patterns of urban Africans in East and Central Africa see *9*.

CHART 1.—FLOUR IMPORTS AND PRICES, NIGERIA, 1910–61*



* Data from Nigerian *Trade Reports*, 1920–60; Nigerian *Blue Books*, 1910–20; and Nigeria, Federal Office of Statistics, *Digest of Statistics*, April 1962.

DETERMINANTS OF BREAD CONSUMPTION

Before proceeding to the formal demand analysis, it is necessary to consider the extent or width of the market for bread in Nigeria. Between 1946 and 1960 total bread consumption increased nineteenfold while annual per capita intake rose from 5 ounces to 5 pounds, still very low in absolute terms. This rapid growth, although made possible by expanding money incomes,[7] is primarily attributable to the extension of the market, the geographic diffusion from the littoral to the hinterlands of a new eating habit. And while the rate of spread is influenced by the size of the country and other economic determinants it is ultimately founded on the simple fact that Nigerians like the taste of bread, in particular smooth-textured, moderately sweet bread. Convenience and favorable associations with the modern Western world ("prestige") add to its popularity.

Approximately 90 per cent of all bread baked is "sugar bread," with "butter bread" supplying the balance. The former tends to be eaten by itself or with a drink, while the latter is usually taken as part of a meal. Loaves come in three principal sizes of 4-ounce (threepence), 8-ounce (sixpence), and 16-ounce (shilling) loaves. Their shares in total consumption, measured by number of loaves,[8] are estimated to be 82½ per cent for threepence, 12½ per cent for sixpence, and

[7] As bread is a semi-luxury for most consumers, it is probable that attainment of a certain threshold of money incomes was a necessary condition for a postwar boom. This also explains why the extension of the bread market did not begin earlier.

[8] In terms of bread weight the respective proportions are 55, 25, and 20 per cent. These estimates derive from production data collected from 59 firms.

TABLE 2.—PER CAPITA AVAILABILITY OF WHEAT FLOUR COMPARED WITH PER CAPITA NATIONAL INCOME, AND PER CENT OF POPULATION IN TOWNS OF OVER 20,000 IN SPECIFIED AFRICAN COUNTRIES, AROUND 1955–60*

Country	Per capita availability of wheat flour (*lbs.*)		Per capita national income		Per cent of population in towns of over 20,000	
	1955–57	1960	Year	U.S. dollars	Year	Per cent
Liberia	2.0	5.1	...	...	...	...
Nigeria	2.4	3.9	1956	69	1953	9.9
Uganda	2.6	4.9[a]	1957	57	...	...[b]
Congo (Leopoldville)	4.9	...	1957	76	1959	9.1
Guinea	8.8	4.9	...	...	...	...[b]
Sierra Leone	9.0	8.9	1957	70	...	...
Cameroon	10.6	7.6	1956	142	1950	4.1
Ghana	13.9	18.8	1957	194	1960	11.6
S.M.M.[c]	17.9	...	...	...	...	...
Ivory Coast	18.5	...	...	...	1955	6.8

* Per capita availability of wheat flour for 1957–59 from W. O. Jones and Christian Mérat, "Consumption of Exotic Consumer Goods as an Indicator of Economic Achievement in Ten Countries of Tropical Africa," *Food Research Institute Studies,* February 1962, p. 59; for 1960 similarly computed as per capita net imports, from FAO, *Trade Yearbook 1962,* and UN, *Demographic Yearbook 1962.*

Per capita national income from UN, *Economic Survey of Africa Since 1950* (1959), p. 15.

Per cent of population in towns of over 20,000 from UN, *Demographic Yearbook 1960,* pp. 349–51, and *ibid., 1962,* p. 380, for Ghana. For Nigeria, from Nigeria, Federal Office of Statistics, *Annual Statistical Abstract, 1960,* pp. 1, 6.

[a] Imports, including interterritorial transfers, from East Africa Customs and Excise Department, *Annual Trade Report, 1960.*

[b] UN, *Demographic Yearbook 1962,* pp. 304–05, shows for Uganda, 1959, 2.4 per cent of the population in the "15 largest towns"; and for Guinea, 1955, 8.3 per cent in "urban centers."

[c] Senegal-Mali-Mauritania.

5 per cent for the shilling loaf. Finally, it is to be noted that very little bread is found in the food markets where housewives do their shopping. It appears that the great bulk of all bread is consumed by itself in the form of a light lunch or snack during the day, while relatively little bread is served with home-prepared meals.

The foregoing interpretation also accords with the fact that something like half of all bread is sold in and around motor parks and other embarkation points: the traveling public appears to be Nigeria's largest group of bread eaters. But if bread is not a staple in the average home, it is nevertheless important in everyday life. Nigeria is a commuting nation—farmers, petty traders, job seekers, visiting relatives, school children, and countless others form a constant stream of humanity carried by road and rail at the rate of some quarter of a million per day (*16,* pp. 77, 187).[9]

For rural consumers in the South bread is a luxury that is increasingly enjoyed in times of prosperity. The cocoa farmers in the West have long been bread eaters (*17,* p. 717). More recently bakers in the East report rapidly increasing sales of the 4-ounce loaf to the major cash-crop producing areas.

Demand: Economic and Social Determinants

As all the potential bread consumers are brought within the confines of the expanding distribution network, further rises in consumption will depend upon

[9] Based upon a passenger-carrying capacity of approximately 400,000 (see *16*).

TABLE 3.—PER CAPITA FLOUR CONSUMPTION AND AGRICULTURAL MONEY INCOME (EXPORT RECEIPTS) IN NIGERIA 1956–57 COMPARED WITH PER CAPITA NATIONAL INCOME 1952/53*

Region	Flour consumption, 1957 (*lbs.*)	Agricultural money income 1956–57 (*s.*)	National income 1952/53 (*s.*)
West	5.7[a]	88	680
East	3.5	43	420
North	.6	33	340

* Import data are from Nigeria, Department of Statistics, *Trade Report 1958*, p. 15; export receipts at producer prices from P.N.C. Okigbo, *Nigerian National Accounts, 1950–57* (Federal Ministry of Economic Development, Enugu, 1962), pp. 54–60; and midyear 1957 population estimates from Nigeria, *Annual Abstract of Statistics*, 1960, p. 6. Estimates of per capita gross national income of the African population are from International Bank for Reconstruction and Development, *The Economic Development of Nigeria* (Johns Hopkins Press, Baltimore, 1955), p. 616.

See text, p. 5, for estimated regional distribution of flour imports, and below for use of export receipts as a measure of agricultural money income.

[a] Excluding Lagos, for comparison with agricultural income.

population growth and a gradual deepening of the market. Given the number of potential buyers, five factors controlling consumer expenditures on bread can be distinguished. The major economic determinants, which alter consumption patterns without modifying existing wants, are the level of consumer income and the price of bread relative to other staple foods. Sociological determinants, which change the wants themselves, are urbanization, occupation, and the socio-cultural differences between Muslim Northerners and predominantly Christian Southerners (*11*, pp. 42 ff.).[10] Although each factor must be analyzed separately, all five combine with other lesser influences to influence the consumer over a period of time. As R. C. Ogley has pointed out (*11*, p. 45):

> The gradual awareness of other possibilities of expenditure, the recognition of differences between [the individual's] habits and those of his new colleagues or neighbours, will induce adjustments in his way of living long after the original stimulus occurred. In Nigeria, moreover, the sustained pressure of advertising and the rapid advance of education and transport, combine to introduce new patterns of consumption even to those who have changed neither income, occupation nor district of residence.

Income is, perhaps, the single most important determinant of the level of bread consumption at any given time. As a representative measure of regional consumer purchasing power (money income), it is possible to use the receipts accruing to producers of Nigeria's principal exports. In order to smooth out severe fluctuations, and because consumer expenditures are influenced by income in the recent past, producers' income for the years 1956 and 1957 is averaged and compared with per capita flour consumption in 1957 (see Table 3). The most recent regional income estimates are shown in order to provide a fuller context for comparisons. (Ideally, regional disparities in Government expenditures and in the income-multiplier should also be given.)

[10] This five-point scheme follows R. C. Ogley's discussion of consumer demand in Nigeria (see *11*, pp. 42 ff.).

TABLE 4.—MONTHLY EXPENDITURES FOR BREAD BY URBAN CONSUMERS IN SPECIFIED NIGERIAN TOWNS, AROUND 1955–60*
(Shillings, and as per cent of total food outlays)

A. LOWER INCOME GROUPS *(per household)*

Town	Date	Laborers		Artisans		Clerks	
		Amount	Per cent	Amount	Per cent	Amount	Per cent
Lagos	1959	5.8	5.9	8.3	6.1	9.1	5.8
Kano	1958–59	1.1	1.0	6.5	5.4	6.2	4.9
Ilorin	1957–58	1.5	1.7	3.8	3.8	5.0	4.7
Calabar	1956–57	...	2.9	...	5.7	...	5.2
Warri	1956	1.2	1.2	.7	.6	1.5	1.2
Sapele	1956	1.0	1.1	1.4	1.1	1.4	1.2
Benin	1956	1.7	1.9	2.0	1.7	1.7	1.5
Zaria	1955–56	1.5	1.4	4.9	3.3	4.3	3.4
Kaduna	1955–56	2.3	1.9	6.2	4.3	6.4	4.7
Ibadan	1955	2.5	2.8	5.9	4.0	6.8	5.7

B. HIGHER INCOME GROUPS *(per adult equivalent)*

Monthly income (*s.*)	Lagos		Ibadan		Enugu-Onitsha	
	Amount	Per cent	Amount	Per cent	Amount	Per cent
Under 100	2.1	5.3	2.2	4.2	2.9	5.3
100 to 150	2.6	4.9	2.8	4.3	3.2	5.0
150 to 200	2.7	4.2	4.2	6.1	3.2	5.8
200 to 300	2.8	3.7	3.2	3.7	3.9	5.1
300 to 400	2.8	3.6	2.8	3.0	3.6	4.1
400 to 600	5.3	5.3	4.3	4.6	3.0	2.9
Over 600	6.8	4.0	6.7	4.1	5.6	3.8

* Data for lower income groups from Nigeria, Federal Department of Statistics, unpublished worksheets; these data were collated and made available to the author by Roderick Ogley. For the higher income groups from I. G. Stewart, R. C. Ogley, and W. D. C. Wright, *Nigeria: Determinants of Projected Level of Demand, Supply, and Imports of Farm Products in 1965 and 1975* (U.S. Dept. Agr., ERS-Foreign-32, 1962), p. 123. See text discussion.

Urban consumer survey data offer an opportunity for more discrete analysis of the relationship between income and consumer behavior. Table 4 is a collection of all available statistics pertaining to urban bread consumption. Unfortunately, information for the lower income groups is classified according to occupation and household rather than by income per adult as has been done for the higher income groups. However, income and size of household are given for each occupational grouping in the four towns (Lagos, Kaduna, Zaria, Ibadan) for which all the survey data have been published. In these four towns, average monthly income per person ranged from 50*s.* to 80*s.* for laborers, 100*s.* to 110*s.* for artisans, and 100*s.* to 150*s.* for clerks. This gives a rough, but nonetheless continuous, income-consumption scale from 50*s.* to over 600*s.*

Before attempting to interpret these statistics, two special features should be pointed out. For Lagos and the three Mid-West towns of Sapele, Warri, and Benin important price considerations, treated subsequently, distort the income effect. In the upper income groups, the very high consumption rate for the cate-

gories above 400*s.* is explained by the fact that these households are largely those of bachelors who heavily favor bread because it is the only staple food which requires no preparation (*11,* p. 81). Once these two "aberrations" have been taken into account a fairly distinct income-consumption relationship emerges. Expenditures on bread increase with income up to a level of three to four shillings per person per month. This consumption rate of three to four pounds-weight of bread per month remains unaffected by further increases in income.

The share of expenditures devoted to bread grows more rapidly than the increase in household receipts, up to a per capita income level of 100*s.* to 150*s.* (the income elasticity of demand for bread is greater than unity), when bread purchases represent some 5 or 6 per cent of total food outlays. As per capita income passes 150*s.* the proportion of expenditure on bread declines correspondingly (i.e., the income elasticity becomes less than unity). Given the prevailing levels of income, it is the early phase of this pattern which is relevant for the country as a whole: all else being equal, bread consumption may be expected to grow at a faster rate than national income.

The second economic influence shaping the pattern of bread consumption is the price of bread relative to other staple foods. Ehrich has analyzed data gathered by the Federal Office of Statistics comparing relative prices per 1,000 calories for foodstuffs in 19 separate localities (Table 5). As the results seem consistent with those obtained in other West African countries, they may be taken to be more or less accurate (*9*).

The price of bread in the South ranges from three to eight times that of the cheapest staple, cassava. The average difference between bread and yams appears to be 150 to 200 per cent. For six cities in the North, not shown, bread was five to six times dearer than the traditional grains. Clearly for the great majority of Nigerian consumers bread must be considered an expensive luxury.

Since the absolute price of bread tends to be constant throughout Nigeria, the

TABLE 5.—RELATIVE PRICE PER THOUSAND CALORIES FOR SELECTED FOODSTUFFS, NIGERIA, 1960*

(*Cassava price per 1,000 calories = 100*)

Town	Cassava	Brown rice	Yams	Bread
Lagos	100	207	187	293
West				
Abeokuta	100	289	283	489
Ijebu-Ode	100	338	—	550
Ibadan	100	295	232	463
Ondo	100	176	—	352
Benin	100	740	390	800
East				
Enugu	100	211	300	488
Onitsha	100	200	272	489
Calabar	100	244	457	550
Aba	100	213	319	550
Port Harcourt	100	233	611	489

* Data from R. L. Ehrich's contribution in *The Market Potential for Wheat Products in Nigeria,* ed. by Agri Research, Inc. (Manhattan, Kansas, 1962), p. 44.

higher the bread index the lower the absolute price of cassava. Thus the high cost of transporting and marketing farm products in Lagos results in a low relative bread price. Contrariwise, the cheapness of cassava in Benin results in a relatively high price. Hence it is not surprising that Lagos has the highest per capita consumption for any city in Nigeria while Benin has one of the lowest. Similarly, the low per capita intake level in the North relative to the South may be due in part to the greater relative cost of bread, as well as to lower money incomes.

In addition to the average level of prices, seasonal fluctuations in the prices of local foodstuffs, caused by peak supplies immediately after harvest and scarcity just before, also influence bread consumption. The foodstuff which shows the greatest price fluctuation is the preferred traditional staple, yams; the yam harvest coincides with an annual decline in bread sales. Other staples also influence bread sales but to a lesser degree. The only published seasonal figures on bread prices which are available are for Lagos, which, because of the high constant cost of distribution in that city, do not mirror the full amplitude of the seasonal movement. In April 1961, data collected by the Federal Office of Statistics in Lagos show a price of yams five-sixths that of bread; in August, four months later, it was one-half (*13,* Table A-13).[11]

Of the three sociological factors which affect taste preferences, urbanization is by far the most potent; as with per capita income, the proportion of town dwellers in any country is usually closely bound up with its state of economic progress. Bread consumption is higher in towns because of its relatively lower cost to urban consumers, higher levels of money income, the presence of Western influences, and the greater availability of bread in the towns. Furthermore, the wage-earner's (and his trading wife's) need to reduce the time devoted to the preparation of food results in a greater reliance on bread because of its time-saving convenience.[12]

Regional urbanization patterns conform to the same ordering as per capita income and relative prices. In the census year of 1953 the proportion of inhabitants living in towns of 20,000 or more was 29, 6, and 3 per cent for the West, East, and North, respectively (*10,* p. 6).

The West, however, presents a special case. Its degree of urbanization cannot be taken as an accurate reflection of the level of economic development. Of 31 towns boasting a population of over 20,000 only 4 are significant centers of transport, trade, manufacturing, or administration. The other, traditional, cities are clusters of kinship groupings which came into being prior to the opening up of the modern economy. In contrast to residents of modern cities, these townsmen are largely farmers who raise cocoa and food crops in outlying farming hamlets (*14, 15*). The large number of these older cities, with their traditional forms of social and economic organization, explains the comparatively low correlation between urbanization and bread consumption in the West.[13]

[11] There is also a falling off of bread consumption, reported by all bakers, at month's end just before pay day.

[12] In towns, where an opportunity cost attaches to food preparation, the type of price comparisons made in Table 5 overstates the cost of bread inasmuch as it includes final processing whereas the prices of other foodstuffs do not.

[13] It is not urbanism as such which influences consumption patterns but rather such factors as specialization and higher money incomes which are *usually* associated with city-dwelling.

Occupation also affects taste preferences and is clearly a vital determinant when comparing the consumption behavior of a farmer and a clerk with equal incomes. But as between occupations within the same setting (i.e., rural or urban) this type of classification, for Nigeria at least, has little relevance beyond providing another method for ordering income groups. Bread may be considered a staple food for only a very limited number of occupational groups. These would include professionals, senior civil servants, the most successful merchants, and wage-earning bachelors. For all other urban dwellers—clerks, artisans, laborers, traders, self-employed craftsmen—bread must be considered a semi-luxury.

No attempt will be made to identify or measure the positive impact of countless Western stimuli in the spread of bread consumption. On the other hand, it seems clear that a major impediment to the spread of bread-eating in the North is Islam. In its emphasis upon the traditional, the unadorned, and the immaterial, Mohammedanism has greatly slowed the force of change and, in particular, the spread of Western values and tastes. This conservatism has been strengthened by a feudal social system and the exclusion of Western (i.e., Christian missionary) education. Of the three Northern occupational groups surveyed in the budget studies, only the clerks ate bread. In fact, most bread consumption in the North must be attributed to the half-million expatriate Southerners employed in the principal cities. Nevertheless, a gradual growth in bread purchases by urban Moslems is occurring and appears likely to continue.

DISTRIBUTION

The distribution mechanism has played a central role in the rapid widening of the market for bread noted earlier. A description of these marketing arrangements is also of interest as it adds to our knowledge of the exact workings of retail distribution in West Africa. The analysis presented here refers specifically to the Ibadan market and to five firms for which detailed information was gathered in 1959–60. We begin by describing the marketing organization of the individual firm and then focus upon the retail vendor, the heart of the system. The efficiency of distribution and its relationship to the growth of the industry are then assessed.

Wholesale Distribution

The vendor system may vary considerably in its complexity. In addition to the baker and the retail hawker there may be such intermediary facilities as wholesale agents, van deliveries, and credit arrangements. All but one of Ibadan's six larger firms, baking in excess of 1,000 lbs. of flour daily, found city-wide distribution essential for the maintenance of full capacity production. This necessitates van deliveries and, usually, agents, and the granting of credit on a selective basis to old proven customers. Nine out of ten of the medium-sized firms, consuming 400–1,000 lbs. of flour daily, also possessed vans although these were frequently out of commission. These firms, however, did not usually employ agents or extend credit. Small firms, consuming less than 400 lbs. of flour daily, normally marketed their entire output through counter sales on a cash-and-carry basis.

TABLE 6.—BREAD SALES OF FOUR IBADAN BAKERIES TO VENDORS AND OTHERS, SPECIFIED MONTHS IN 1959 AND 1960*

Firm and date	Total sales (£)	Percentage sold to				
		Vendors		Super-markets	Schools	Hotels
		In-town	Out-of-town			
Firm A						
Aug. 1959	423	100.0	—	—	—	—
July 1960	1,081	51.2	48.8	—	—	—
Firm B						
Aug. 1959	348	83.5	—	3.0	8.2	5.3
Sept. 1959	424	86.5	—	1.0	7.9	4.5
June 1960	582	88.3	—	—	11.7	—
July 1960	865	90.5	—	4.3	5.2	—
Firm C						
May 1960	3,132	61.7	21.3	5.9	11.1	—
June 1960	2,560	61.4	15.8	8.5	14.3	—
Firm D						
Jan. 1960	2,930	69.2	30.0	.8	—	—
Feb. 1960	2,679	78.3	20.6	1.0	—	—
Mar. 1960	2,446	80.9	17.8	1.3	—	—
May 1960	3,257	85.4	12.6	2.0	—	—
July 1960	2,452	67.5	28.6	4.7	—	—

* Based on information collected by the author.

A breakdown of sales statistics is available for four of the five firms. As can be seen from Table 6, vendors absorb 77–100 per cent of the total output. The two firms producing butter bread, B and C, are the principal institutional suppliers. The bulk of Firm A's expanded production was sold in outlying rural areas. Firm B, on the other hand, was able to market its additional output in Ibadan with the help of van deliveries. Both of the larger producers, C and D, "exported" from Ibadan to neighboring areas 15–30 per cent of their production. Of the fifth bakery, whose monthly sales ranged in the neighborhood of £5,000, approximately 5 per cent of sales went to schools, while the remaining 95 per cent was sold to vendors both in and out of Ibadan. Inasmuch as the five bakeries studied included the best-known brands it is safe to assume that all other firms in the city marketed even larger percentages of total output through hawkers.

Table 7 shows the distribution of sales to vendors by size of transaction for three firms. The high percentage of sales by Firm A in the over-£3 category is explained by agents' purchases, which accounted for all such sales in August and more than half in July. This heavy reliance on agents was not typical for firms of this size.

Firm C is judged to be fairly representative of larger firms. Slightly less than half of sales to vendors is routed through agents, most of the latter being supplied by one of the firm's three vans. Direct counter sales to hawkers, accounting for slightly more than half of sales to vendors, are comprised predominantly of transactions of less than £2.

TABLE 7.—BREAD SALES OF THREE IBADAN BAKERIES TO VENDORS BY SIZE OF TRANSACTIONS, SPECIFIED MONTHS IN 1959 AND 1960*

Firm and date	Total sales (£)	Percentage of sales		
		Under 1£	£1–£3	Over £3[a]
Firm A				
Aug. 1959	423	7	41	52[c]
July 1960	1,081	8	12	80
Firm C				
May 1960	2,600	...	51[b]	50[c]
June 1960	1,977	...	54[b]	46[c]
Firm D[d]				
Jan. 1960	2,028	39	47	14
Feb. 1960	2,099	25	58	17
Mar. 1960	1,978	26	65	9

* Based on information collected by the author.
[a] Includes sales to agents, except in the case of Firm D.
[b] Sales under £2.
[c] Sales over £2.
[d] Excludes out-of-town sales owing to lack of data on size of individual sales transactions.

Firm D, a large firm, employs neither agents nor vans. The absence of intermediaries permits a closer glimpse at the number of retail hawkers and the scale of their operations. Taking January as an example, there were 5,396 counter sales, or more than 200 transactions per day. Of these, 1 per cent were for £3 or more, accounting for 14 per cent of bread sold; 10 per cent were in the £1–3 category, accounting for 47 per cent of bread sold; and 89 per cent of counter transactions were for less than £1, accounting for 39 per cent of bread sold. Thus, the median purchase amounted only to 3*s.* 3*d.* However, most hawkers purchased bread from more than one firm.

Detailed breakdowns of sales are not available for the other two producers. Extensive van deliveries and innumerable agents, both in Ibadan and neighboring towns, were the chief techniques used by Firm E to maintain a monthly sales volume of £5,000. Firm B employed no agents during the period studied.

Retail Distribution

The heart of the distribution system is the retail hawker. It is through him or her that the consuming public makes contact with the industry. Far more Nigerians are engaged in hawking bread than in making it, and it is the vigor of their response to the "commission" that has made possible the meteoric rise of the baking industry.

Most bread vendors in Nigeria are housewives and are known as "mammy traders," but the largest retailers and agents are usually men. The itinerant mammy trader typically stocks from 5 to 10 loaves, representing two to four brand names; the largest vendors who sell from booths in the major motor parks may carry up to 100 or 200 loaves. All of the hawkers specialize wholly in bread except for a few petty traders who also sell small quantities of cigarettes, matches, salt, peppermints, and the like.

Of a sample of 40 hawkers drawn from Ibadan's major bread-marketing areas,

9 male vendors employed trading capital ranging from £2 10*s*. to £5, and 31 female traders from 5*s*. to £3 in trading capital. About 10 per cent of the hawkers sold unwrapped threepenny loaves as well as the differentiated sixpenny and shilling loaves enclosed in printed wax wrappers. Three sellers carried only one brand of wrapped bread, while 11 stocked four.

The volume of a hawker's sales is in most cases not limited by capital, but by the market. Thus in motor parks, where customer density is greatest, £5 worth of bread appears about the maximum any booth can sell in a day, given "normal" competition. Problems of supervision and control preclude the use of more than one or two paid assistant sellers, young "apprentices."

In terms of geographic dispersion, surprisingly few vendors are to be found in the markets where most food items are bought and sold. Instead, the major concentrations of bread-sellers occur in or near motor parks and at the major terminals of transportation. In Ibadan these include the municipal motor parks, the railway station, and embarkation points on major inter-city highways. While this is primarily a reflection of the very large demand for bread among travelers, such transport points are fairly evenly distributed over the city and thus are convenient for other types of consumers as well. Wage-earners are supplied by itinerant traders at their place of employment—commercial establishments, factories, and construction sites.

In terms of growth of bread consumption and the baking industry, on the one hand, and the rise and fall of individual firms, on the other, two aspects of the vendor system are of critical significance. The first concerns the profitability of the bread trade; the second pertains to those factors which influence the hawker's choice of suppliers.

The economics of bread vending, its costs and returns, have played a central role in determining the industry's rate of expansion. At a discount rate of four shillings on the pound (20*s*. cash in exchange for 24*s*. worth of bread) the gross margin received by the retail trader is 16⅔ per cent of sales, or a daily return of 20 per cent on trading capital if every loaf is sold at the standard price. No other retail commodity possesses such a favorable ratio of profit to turnover.[14] It is precisely this relative profitability of bread vending that lies behind the dynamism of the distributive mechanism.

There are, however, a number of costs to be considered. First, there are taxi fares, and, for the larger sellers, stall rents and apprentice allowances. More important are various occupational risks: rain-soaked bread, unredeemed consumer credit, and the auction losses.[15] A problem akin to unredeemed credit is the practice of some travelers who delay their bread purchase until the vehicle has begun to move and, once in possession of the loaf, fumble for their money until it is too late. Auction loss, probably the major selling "cost," is a corollary of selling a perishable product in a market easily saturated.

The phenomenon of auction loss is but another manifestation of the limitation upon the size of trading capital that can be employed in the retail bread trade. The low ceiling upon trading capital results from a market structure character-

[14] For discussions on the general level of margins and rate of capital turnover in West Africa see *1*, pp. 58–61; *2*; *3*, pp. 30, 48.

[15] Owing to the onset of staling, after two days unsold bread is "auctioned" (sold) at half price.

ized by a competitively determined wholesale price, customary retail price,[16] a resultant abnormal retail margin, and free entry of retail sellers. Given such a market configuration, hawkers switch from less profitable lines to bread, causing the number of bread-sellers to swell until the volume of sales per vendor has declined to that point where the absolute return has reached the normal market equilibrium level. Thus limitations upon the amount of capital that can be employed in hawking bread are a consequence of the high retail profit margin.

A second aspect of the vendor system, the retailer's choice of source of supply, has a direct bearing on the nature of competition, both in its forms and in its intensity. The bread of Firm A was being sold by 18 per cent of the hawkers interviewed; for Firm B the figure was 40 per cent, for Firm C, 25 per cent, for Firm D, 58 per cent, and for Firm E, 65 per cent. Four other wrapped brands were also traded. Two of these were imported from Lagos and sold by a single representative whose main business was in patent medicines. The two other locally produced brands were sold by 14 per cent and 32 per cent of the hawkers sampled.

A first set of factors influencing the choice of supplier derives from consumer preferences and has its effect on the volume of the retailer's turnover. The primary determinants of consumer popularity are quality, loaf weight, and, to a much lesser extent, wrapper design. The most important of these is bread quality—"quality" in terms of local consumer tastes. Thus Lion bread, baked by Firm D, the only large producer who did not deliver or extend credit, was reported to be the most popular brand by a 3-to-1 majority of the vendors interviewed. And in 1961, despite reduction in its discount rate that was not matched by other bakers, the sales of Firm D continued to increase relative to those of other producers. Conversely, Firm A, offering the heaviest bread and an additional discount, not only showed the poorest performance in the market sampling, but found most of its customers in Molete, a five-minute walk from the bakery.

A second set of considerations governing the hawker's purchasing decision is that connected with unit costs. A lower wholesale price in the form of a higher commission or hidden rebates widens the vendor's margin. Similarly, delivery and credit represent savings on taxi fares and interest charges that increase the net profit on a given volume of sales. Such cost advantages encouraged wholesale purchases from Firms A and E.

Finally, there is a group of minor, miscellaneous considerations that bear on the vendor's choice of supplier. Thus, as a matter of convenience, most hawkers make counter purchases at the nearest bakery. Individual preferences for the design and color of certain wrappers, personal contacts, and judgments about the relative surplus or deficiency of any particular brand in a given market area also influence the direction of the retailer's patronage.

The Efficiency of the Commission System

In terms of the economic resources utilized in distribution, the vendor system makes maximum use of Nigeria's abundant factor, labor. It taps small quantities

[16] The prices of 3*d*., 6*d*., and 1*s*., which conform to coin denominations, have persisted over the last 25 years.

of capital which, because of their very limited size, can find no other productive employment save in the marginal activity of petty trade, and it economizes on the use of scarce, larger capital aggregations that would otherwise be needed in the form of shops and transport.[17]

The commission system also provides a number of additional benefits that have been of critical importance for the development of the baking industry. First, the throwing-off of retail distribution enabled the individual baker to realize the cost reductions possible with an expanded scale of production, in particular the advantages of the dough-brake, and to accelerate his accumulation of capital through higher entrepreneurial profits. Expressed in another manner, by turning distribution over to independent vendors, the onset of increasing marginal costs imposed by retail distribution is deferred, thus vastly lengthening the horizontal segment of the firm's (and the industry's) supply curve, up to that point where diminishing returns once again set in, this time imposed by wholesale distribution.

And finally, the commission system has been the prime force in widening the market for bread. The super-normal margin has attracted a large volume of resources to the task of carrying the product to dispersed consumers. The relative profitability of hawking bread has resulted in intensive distribution not only near the centers of production, but also, by making use of returning empty lorries and more recently of direct deliveries, rural depots have increasingly developed as points from which retail vending radiates. Moreover, owing to the structure of the wholesale and retail markets, as the supply capacity of the industry expands ensuing competition among producers attracts more effort and resources into the distribution of bread—leading to a further extension of the market. So long as the "spread" effects have not encompassed all the potential consumers in Nigeria, this mechanism results in the maximum rate of expansion of demand.

Outlook for the Future

Taking all the relevant considerations together, the prospects for bread consumption in Nigeria would appear to depend upon the country's rate of economic progress. The spectacular spurt during the 1946–60 period, based upon the geographic expansion of the market, seems to be at an end. While the distribution network is still being extended in the sparsely populated North and in remote rural areas of the East, this is unlikely to contribute more than 2 or 3 per cent per year to total bread consumption. A further autonomous increment of a similar magnitude may be expected as a result of population increase.

This leads us to the conclusion that any substantial rises in bread consumption—for example, sufficient to bring Nigeria's per capita figure up to the average for tropical Africa—will only come as a result of overall economic growth. The latter will determine the level of per capita income, the rate of urbanization, the size of the wage-earning labor force, and the pace of social change, which in turn control the level of bread consumption.

The final outcome may be modified, however, by several specific developments that are not inherent in the growth process. If successful, Government-

[17] For eloquent analyses of the efficiency of the hawker system in West Africa see *1, 4, 5.*

sponsored rice-growing schemes in all three Regions would divert some consumer demand away from bread. On the other hand, competition from a second flour mill, scheduled to begin operations in 1964, should stimulate bread consumption through lower flour prices. The Government's moral and financial interest in the two flour mills may also result in a more liberal policy toward wheat imports than probable future balance-of-payment difficulties might otherwise dictate.

CITATIONS

1 P. T. Bauer, *West African Trade* (Cambridge, 1954).

2 P. C. Garlick, *African Traders in Kumasi* (African Business Series 1, University College of Ghana, Legon, 1959).

3 Astrid Nypan, *Market Trade: A Sample Survey of Market Traders in Accra* (African Business Series 2, University College of Ghana, Legon, 1960).

4 P. T. Bauer and B. S. Yamey, "Economic Progress and Occupational Distribution," *Economic Journal* (London), December 1951.

5 ———, *The Economics of Underdeveloped Countries* (London, Chicago, 1957).

6 United Nations, *Yearbook of National Accounts Statistics 1961* (New York, 1962).

7 Nigeria, Federal Department of Statistics, *Urban Consumer Surveys in Nigeria: Report on Enquiries into the Income and Expenditure Patterns of Wage-Earner Households in Lagos [1953/54], Enugu [1954/55], and Ibadan [1955]* (1959); *Report ... in Kaduna and Zaria, 1955–56; Report ... on Patterns of Lower and Middle Income Wage-Earner Households in Lagos, 1959–60* (1963).

8 T. T. Poleman, "The Food Economies of Urban Middle Africa: The Case of Ghana," *Food Research Institute Studies,* May 1961.

9 Hiromitsu Kaneda and B. F. Johnston, "Urban Food Expenditure Patterns in Tropical Africa," *Food Research Institute Studies,* November 1961.

10 Nigeria, Federal Office of Statistics, *Annual Statistical Abstract 1960* (Lagos, n.d.).

11 I. G. Stewart, R. C. Ogley, and W. D. C. Wright, *Nigeria, Determinants of Projected Level of Demand, Supply, and Imports of Farm Products in 1965 and 1975* (U.S. Dept. Agr., ERS, 1962).

12 B. F. Johnston, *The Outlook for Wheat and Flour Imports in Tropical Africa* (U.S. Dept. Agr., FAS, February 1959).

13 R. L. Ehrich's contribution in *The Market Potential for Wheat Products in Nigeria,* by Agri Research, Inc. (Manhattan, Kansas, 1962).

14 P. C. Lloyd, "The Yoruba Town," *Sociological Review* (London), July 1959.

15 W. R. Bascom, "Urbanism as a Traditional African Pattern," *Sociological Review* (London), July 1959.

16 Stanford Research Institute, *The Economic Coordination of Transport Development in Nigeria* (Menlo Park, Calif., 1961).

17 R. Galletti, K. D. S. Baldwin, and I. O. Dina, *Nigerian Cocoa Farmers: An Economic Survey of Yoruba Cocoa Farming Families* (Nigeria Cocoa Marketing Board, London, 1956).