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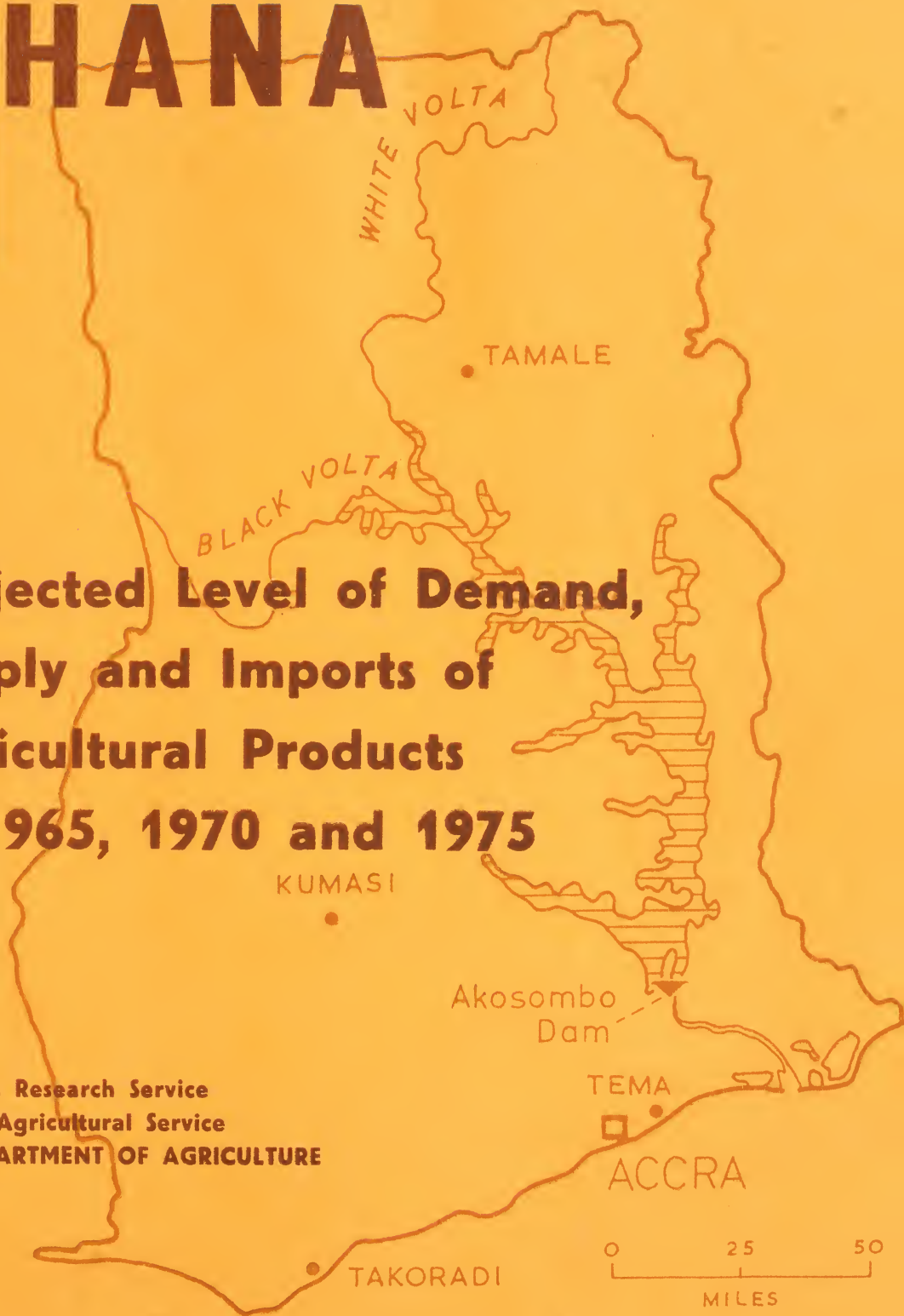
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Projected Level of Demand, Supply and Imports of Agricultural Products in 1965, 1970 and 1975

Economic Research Service
Foreign Agricultural Service
U.S. DEPARTMENT OF AGRICULTURE



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This is an independent study. The views expressed herein are those of the Project Team and do not necessarily reflect those of the United States Department of Agriculture.

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SUMMARY

1. General Situation

Occupying that portion of the West African littoral from 3° W. to 1° E. and extending northwards from the Gulf of Guinea to about 11° N., Ghana covers an area of 91,834 square miles, approximately the size of the United Kingdom or the State of Oregon. It is bordered on the West, North and East, respectively, by the French-speaking Republics of the Ivory Coast, Upper Volta and Togo. Until independence was attained in March 1957, the country comprised the Gold Coast (Colony, Ashanti and Northern Territories) and that part of Togoland mandated to Britain in 1919. Since July 1960 Ghana has been a Republic within the Commonwealth and has remained a member of the Sterling Area.

The latest census (March 1960) recorded a *de facto* population of 6,726,815, which makes Ghana one of the most densely populated countries in Africa, with 73 persons per square mile. However, nearly half the population and four-fifths of the town dwellers are concentrated in the south-central part of the country, within a triangle of railways connecting the three main urban centres: Accra, the capital, Kumasi and Sekondi-Takoradi, the principal port. In this area, one-sixth of all Ghana, the average density was 205 persons per square mile in 1960. By contrast, some 40 per cent. of the land area, broadly the Northern and Upper Regions, were occupied by 20 per cent. of the population at an average density of 30 persons per square mile.

By and large population density, *per capita* income and general levels of living decrease northwards through Ashanti and Brong-Ahafo Regions as forest-type vegetation gives way to savannah, and, eventually, scrubland. Taking the country as a whole there is sufficient cultivable land to maintain a growing population at current nutritional standards. However, there is also considerable scope for raising agricultural productivity and improving the pattern of diets. The main deficiencies in the northern savannah country arise from *insufficient* food, especially in the "hungry gap" before the main cereal harvest. In the forest belt, on the other hand, the main problem is *protein deficiency* and malnutrition, especially among children.

2. Domestic Product and Consumption

Ghana's gross domestic product has increased substantially over the past decade, from about \$750 millions in 1952 to \$1,395 millions in 1961. G.D.P. estimated at 1960 price-levels rose sharply under the impact of record world cocoa prices during the middle 1950's from \$800 millions in 1952 to \$1,050 millions in 1955, then levelled off for two years before a further sharp increase to \$1,315 millions in 1960. Adjusting for population growth, which probably averaged some 2.2 per cent. over the decade, income per head in 1960 was \$195, representing a level some 34 per cent. above that available ten years earlier. The average Ghanaian's standard of living, as measured by personal consumption per head at constant (1960) prices, rose even more rapidly than income per head. This improvement was continued in 1961, when as much as 79 per cent. of G.D.P. was devoted to personal consumption, compared with only 72 per cent. in 1960. However, since both aggregate output and income per head declined slightly in 1961, special measures of restraint had to be imposed towards the end of that year and in 1962 to safeguard a serious deterioration in Ghana's external payments position.

3. Ghana's External Relations

Until 1956 Ghana enjoyed a favourable balance of payments with the rest of the world and accumulated substantial foreign exchange reserves. The book value of these reserves, held largely in sterling, rose from \$234 millions at the end of 1949 to a peak of \$582 millions at the end of 1955. Since 1956, however, these reserves have been drawn down gradually to finance "invisible" and capital transactions and, from 1960, large "visible" trade deficits, which have been associated with a rapid expansion in imports during a period of declining world prices for Ghana's principal export, cocoa. Restrictions introduced in 1961 and reinforced in 1962 contributed effectively to a more favourable balance of payments in 1962; while access to overseas credit facilities and long-term borrowing, for the Volta River Project in particular, enabled Ghana to finance a smaller current deficit without drawing upon official balances, estimated at \$202 millions at the end of 1962.

4. Seven Year Development Plan

The new Development Plan, covering the period October 1963 to September 1970, focuses attention on the need to encourage long-term growth by measures that tackle the more immediate problems of a rapidly increasing potential labour force and a serious imbalance in overseas trade. Moreover, for Ghana, growth is necessary to raise average living standards in terms of nutritionally adequate diets and basic social services (especially elementary education and public health facilities) and to correct wide social and geographical disparities in income. Priority is to be given to an expansion of domestic production of foodstuffs, other staple consumer goods and building materials, thereby correcting the imbalance between the contribution of agriculture and non-agricultural activities to G.D.P. and employment and improving the balance of payments by import substitution and further processing of primary exports. The scale of the projected development will make it necessary for Ghana to cut back spending on certain "inessential" imports, including foodstuffs. The extent of these restrictions will depend upon the future level of foreign exchange earned by exports or made available by private investors and lending institutions overseas.

5. Growth in Domestic Product, 1960-75

The Development Plan aims to raise the overall growth in output from around 5 per cent. per annum in recent years to 5.5 per cent. in 1964-70. By 1970 G.D.P. (at 1960 prices) is expected to be some \$2,200 millions, compared with \$1,315 millions in 1960 and perhaps \$1,750 millions in 1965. By 1975 the figure is likely to be \$2,800 millions, given a long-term growth rate of 5.1 per cent. from 1960 to 1975. With population rising at an average rate of 2.9 per cent. per annum, income per head could increase from \$195 in 1960 to \$250 in 1970 and \$270 in 1975. However, if the Plan is to succeed, much of the increase in average income per head will be required for capital formation so that the growth in *per capita* personal consumption is expected to be much lower. For this reason, population growth rather than improvements in average standards of living will probably be the predominant factor determining aggregate demand for foodstuffs.

6. Imports of Agricultural Products

Imports of food, drink and tobacco products, valued at \$68.5 millions, accounted for 20.5 per cent. of Ghana's total imports in 1962. This percentage has been fairly constant since 1949, although the importance of drink and tobacco has declined with the development of domestic substitutes. Imports of food (including livestock) increased from an average annual value of \$27.7 millions in 1949-53 to a record figure of \$73.5 millions in 1961 (\$65 millions in 1962). Agricultural commodities of special interest to the United States are RICE, WHEAT FLOUR and unmanufactured TOBACCO. In 1962, these three items

accounted for 92 per cent. of U.S. sales to Ghana of food, drink and tobacco and for 48 per cent. of all Ghana imports from the U.S.A. Sales of U.S. rice in Ghana have risen sharply, from 1,407 metric tons in 1958 to a record 68,544 metric tons, valued at \$9.9 millions (c.i.f. Ghana) in 1962. On the other hand, shipments of wheat flour from the U.S.A. to Ghana have declined in recent years, from 35,926 metric tons in 1957 to 10,436 metric tons, valued at \$1.6 millions in 1962. Increasing competition from Canadian wheat flour has been responsible for a decline in the U.S. share of the Ghana market from 84 per cent. in 1949-53 and 68 per cent. in 1954-58 to 21 per cent. in 1962. Until 1958 the U.S.A. supplied almost the whole of Ghana's imports of unmanufactured tobacco; in more recent years, however, U.S. sales have fallen in the face of increasing competition from India and Southern Rhodesia and especially the development of domestic leaf production. By 1962 imports from the U.S.A. had fallen to 474 metric tons (\$1.1 millions), compared with 1,265 metric tons (\$2.6 millions) in 1959.

7. Prospects for Imports of Foodstuffs, 1965-75

Planned expansion of domestic production may be expected to reduce the aggregate level of Ghana's imports of fish, sugar and, possibly, rice by 1970-75. Imports of drink and tobacco have already fallen substantially with the development of domestic substitutes, and a similar experience will face overseas suppliers of processed agricultural commodities, e.g., canned and bottled fruits and vegetables, confectionery, biscuits, canned meats, etc. On the other hand, prospects for a continued expansion in imports of wheat and/or wheat flour and milk are more favourable, provided the Ghana Government is not compelled by balance of payments difficulties to place further restrictions on imports. By 1970 demand for wheat flour (or grain) may reach a level of 96,500 metric tons (which was also the average 1959-61 level). A volume of 124,000 metric tons may be attained by 1975, more than double the 1960 figure. The outlook for a continued expansion in rice imports is more uncertain, since a substantial increase in local production is envisaged under the new Development Plan. The record level of 71,800 metric tons imported in 1962 is not likely to be exceeded, except under abnormal conditions of acute food shortage, but imports may still run as high as 35,000 metric tons in 1970-75.

Commercial imports of preserved milk are expected to increase rapidly, to twice the 1960 level by 1970 and to 270 per cent. by 1975. In addition there could be considerable outlets for dried skim milk imported under special arrangements. Import of meat could also represent an increasing proportion of Ghana's food import bill; present trends suggest a doubling of the 1960 level of imports of livestock and carcass meat by 1975, although domestic substitutes will probably replace imports of canned and processed meats. Imports of unmanufactured tobacco are expected to fall sharply in the later 1960's, with only marginal imports required for blending purposes in 1975.

Details of the balance of demand, supply and imports of selected commodities are summarised in Table VII.4 on page 75.

Conversion Table of Weights and Measures

£1 Ghanaian = £1 Sterling = \$2.80 U.S.

240 pence = 20 shillings = £1 Ghanaian.

2240 lbs. = 20 cwts. = 1 long ton = 1.0160 metric tons.

1 imperial gallon = 1.021 United States gallon.

NOTE.—British spelling and style have been retained throughout.

GHANA: PROJECTED LEVEL OF DEMAND, SUPPLY AND IMPORTS OF AGRICULTURAL PRODUCTS IN 1965, 1970 AND 1975

INTRODUCTION

The primary aim of this study is to examine the main determinants of change in the level of demand for agricultural products at present imported into Ghana and to estimate how far demand for, and supply of, these selected products may develop by 1965, 1970 and 1975. Special attention is given to the following products: wheat flour, rice, sugar, milk products, meat and fish which have accounted for some 85 per cent. of Ghana's food imports in recent years, and to beverages and tobacco.

This study begins with a consideration of the major factors responsible for long-term movements in aggregate demand, *i.e.*, population and *per capita* income. This approach also affords an opportunity for discussing aggregative relationships that have obtained during recent years in Ghana, the composition of domestic product and expenditure, the influence of external trade and capital formation. In Chapter I we develop projections of population under various assumptions before turning in Chapter II to a detailed consideration of gross domestic product and changes in *per capita* income over the period, 1950 to 1961. Chapter III examines Ghana's dependence on external trade and capital imports; while Chapter IV establishes probable lines along which aggregate output and *per capita* income may be expected to develop between 1960 and 1975.

Chapter V deals with the micro-economic aspect of our study. We begin with an appraisal of "cross-section" data on relationships between food consumption and total expenditure of Ghana households and individuals at different levels of income. After further examination of time-series data for imported food, the income-consumption relationships so derived are used to project consumers' demand for total food and for selected items (Chapter VI, Sections A and B). Up to this point the projection model is based simply upon changes in population and income (however defined), estimated *per capita* elasticity coefficients and actual expenditure calculated for a base period. In other words, it projects demand at constant prices and allows only for changes in income and total population; it assumes stability of tastes and the absence of social and economic factors that might disturb the aggregate income-consumption relationship. We defend this limited excursion into econometric techniques on the grounds that, for the inadequate and partial data at present available for Ghana and under the assumptions that we make about probable changes in the determining variables, our method provides as useful a first approximation as alternative and possibly more "scientific" calculations.

We next turn to a separate consideration of domestic production in Ghana and, in particular, to the assessment of those factors likely to influence the supply of foodstuffs in the directions indicated by our independent demand projections. We begin this Section C of Chapter VI with a review of the all-too-limited information available about food farming operations in West African peasant economies and then examine how far domestic food supplies may increase to satisfy basic nutritional *requirements* and market demand. Considerable reliance is placed upon the production targets proposed in the new *Draft Seven Year Development Plan, 1963-70*. Finally, we examine possible discrepancies between supply and demand which may be eliminated by adjustments to imports and prices. The concluding Chapter VII deals with the Ghana market for selected imported commodities and the extent to which import substitution and balance-of-payments considerations may affect their future prospects.

CHAPTER I

POPULATION PROJECTIONS

We begin our study with an appraisal of demographic trends in Ghana, since our demand projections will depend upon movements in population and *per capita* demand. In general, a given increase in the total size of the population will raise aggregate demand at the same rate while *per capita* demand will be affected by income and other influences. It follows, therefore, that we require population data, not only to estimate the direct population effect, but also to derive income and consumption on a *per capita* basis. As we shall see in Chapter II, the calculation of aggregate output and expenditure in Ghana is partly, at least, dependent upon raising *per capita* estimates by population: while any projection of income and expenditure will be related to future changes in the structure and size of population. Moreover, since we are primarily concerned with forecasting demand for foodstuffs which is usually inelastic with respect to changes in *per capita* income, population is likely to be the predominant determinant of movements in total demand.

I.2 Projections of Ghana population to 1975 rely heavily upon assumptions rather than reliable data on past trends. In many high-income countries uncertainty about future levels of population arise principally from the future behaviour of fertility rates, often closely connected with sociological changes such as the incidence and average age of marriage rather than reductions in mortality. In Ghana, where demographic data is less adequate but population growth is largely determined by changes in mortality, the official demographers do not expect the age-sex composition of the population to change significantly over the next fifteen years so that the problem of forecasting is a much more general one of choosing a set of assumptions about mortality trends. The following sections of this Chapter are concerned with a review of data at present available on Ghana's population and the projection of estimates forward to 1975. We have also attempted to estimate population changes between the two census dates, 1948 and 1960, to derive past growth rates and calculate *per capita* magnitudes for subsequent analysis in this study.

A. Census Data

I.3 The most recent Census (20th March 1960) revealed a total *de facto* population of 6,726,815, compared with 4,118,450 recorded in the previous Census undertaken in 1948 (during three or four days of which 8th February was the centre, except for the Northern Territories which were covered in the first three weeks of January). The apparent increase of 2,608,365 or 63.3 per cent. in twelve years represents an annual compound rate of 4.2 per cent., "an extraordinary though not unique increase" according to Dr B. Gil, U.N. Population Census Expert in Accra.⁽¹⁾ Although the 1948 Census is considered to be incomplete, the extent of under-enumeration cannot be ascertained from the present stage of analysis of the 1960 Census and in the absence of comprehensive life tables for Ghana. Indeed, the 1948 Census, which abandoned the simultaneity of enumeration, is thought to be less reliable than the previous 1931 Census. How much of the apparent increase between 1948 and 1960 can be attributed to (i) under-enumeration, (ii) net immigration and (iii) natural increases can only be estimated approximately. Reasonable estimates of net immigration and fertility may be derived from census data but only assumptions can be made for mortality. However, for projection purposes, assumptions about all three components of growth have to be made.

B. Projections, 1960-80

I.4 The Ghana Census Office has provided provisional population estimates for 1960-80 using alternative assumptions of High and Low Mortality, with net immigration (a) nil and (b) at 30,000 per annum and with constant fertility. Table I.1 summarises these projections.

Table I.1
Ghana Census Office Projections, 1960-80
de facto population at March in '000

	High Mortality (I)			Low Mortality (II)		
	(a)	(b)	(c)	(a)	(b)	(c)
1960	6,727	—	6,727	6,727	—	6,727
1965	7,510	160	7,670	7,670	160	7,830
1970	8,491	341	8,833	8,810	341	9,151
1975	9,753	543	10,296	10,289	543	10,832
1980	11,164	760	11,924	12,102	760	12,862
Annual Growth, Per Cent.—						
5 years (1960-65)	2.23	...	2.66	2.66	...	3.10
10 years (1960-70)	2.37	...	2.79	2.76	...	3.15
15 years (1960-75)	2.50	...	2.91	2.90	...	3.32
20 years (1960-80)	2.60	...	2.85	2.97	...	3.31

I.5 Of the columns, (a) assumes nil net immigration; (b) assumes net immigration at an annual rate of 30,000 throughout the period 1960-80. In the absence of accurate immigration statistics, for persons of West African origin especially, the figure of 30,000 was obtained by subtracting the total number of foreign born enumerated in 1948 (180,000) from the 1960 figure (560,000) and by assuming a slight decrease in the number of net immigrants in the future. The figures shown in Table I.1 include the natural increase of immigrants.

I.6 The High Mortality projections start with a mortality level of 30 in the U.N. Model Life Tables, equivalent to an expectation of life at birth of 35 years assumed for 1960, rising to 40 in 1965, 45 in 1970, 50 in 1975 and 52.5 years in 1980. A constant age-sex-adjusted birth rate of 49.6 per 1,000 was assumed throughout 1960-80. For the Low Mortality assumption a constant fertility rate of 47.3 was used. Both rates are taken to be the 1955-60 levels. The Low Mortality projections start with mortality level 45, equivalent to an expectation of life at birth of 42.5 years in 1960, rising to 47.5 in 1965, 52.5 in 1970, 55 in 1975 and 57.5 in 1980.

I.7 According to these projections, the Ghana population could increase during the present decade, 1960-70, within a range varying from 2.37 per cent. to 3.15 per cent. While the minimum rate gives a reasonable lower limit, the upper limit could be increased if the flow of net immigration continued at the rate experienced in the period 1955-60, believed to have been around 50,000 per annum. The actual rate will, of course, depend upon a complex set of economic and political factors and, in particular, on the disparities in growth rates between Ghana and neighbouring countries, principally Togo, Upper Volta and Nigeria which provided some 80 per cent. of the immigrants recorded in the 1960 Census. While it may be reasonable to assume that Ghana may not experience a rate of economic growth greatly different from her neighbours', the fact that she has already achieved a much higher average income per head should continue to provide inducements to would-be immigrants that are not likely to be frustrated by immigration restrictions.

- I.8 Alternative population growth rates lead to substantial differences in the total size of the population. For example, while the difference between the lowest rate (High Mortality—Nil Net Immigration) and the highest (Low Mortality with Net Immigration) is 320,000 for 1965, it rises to 660,000 in 1970 and to 1.1 millions in 1975. The Census Office has emphasised that at the present stage it is impossible to choose one rather than the other alternative. We have therefore attempted projection lines under both assumptions. Alternative growth rates and future population levels based upon different fertility or migration assumptions have been excluded for the sake of brevity and simplicity. Moreover, since we have found it useful to present much of our data in *per capita* terms, we have on most occasions used only one set of assumptions; that based upon High Mortality with Net Immigration at the 1948-60 rate (Column I (c) in Table I.1). Projection from 1960 to 1975 on this assumption produces figures approximately equal to the Low Mortality-Nil Immigration trend shown in Column II (a).
- I.9 The population projections under the two mortality assumptions with constant fertility rates involve only a slight change in the age structure of the population (see Table I.2). The proportion of the population in the 0-14 age group is expected to decline only slightly, to 43.5 per cent. by 1975 compared with 44.5 per cent. in 1960, while the proportion aged 65 years and over will fall from 3.2 per cent. to 2.5 per cent. Alternative mortality and migration assumptions do not materially affect the population structure. This means that adoption of a *per capita* rather than a consumption unit basis will not involve counting heads representing changing consumption requirements, as would be the case if the increase in population involved a large change in the age-sex structure.

C. Population Changes, 1948-60

- I.10 We have already referred to the difficulty of estimating accurate growth rates for the inter-census period, 1948-60. Preliminary estimates made by the Census Office suggest that under-enumeration at the time of the 1948 Census was probably of the order of 10 to 12 per cent., indicating a figure of 4,613,000 (*i.e.*, Census figure of 4,119,000 plus 12 per cent., 494,000). This would reduce the overall increase from 63.3 per cent. (4.2 per cent. per annum) to 45.8 per cent. (3.2 per cent. per annum) and provide a natural increase of 2.75 per cent. if net immigration, estimated at 360,000 for the period, were excluded. However, if the population increased at this rate over the past decade, the growth rates implied in the Census Office projections for 1960-65 under Low Mortality assumptions of 2.66 per cent. (nil net immigration) and 3.1 per cent. (with net immigration) might be too low. Using Low Mortality assumptions for the period, 1948-60, the apparent increase, including estimated migration, is 37 per cent., indicating under-enumeration in 1948 of 777,000 or 19 per cent. Under High Mortality assumptions, the increase would be 29 per cent. from 5,204,000 in 1948. Although the Census Office suggests that under-enumeration of 1,085,000 or 26 per cent. implied in our estimate of 5,204,000 would appear to be rather high for 1948, we have used this High Mortality assumption in calculating *per capita* magnitudes, *e.g.*, income and consumption per head, through the period under review in this study.
- I.11 Table I.3 shows the probable range of population levels and annual growth rates from 1948 through 1960 to 1975 under the same High and Low Mortality assumptions used for Table I.1.
- I.12 Finally, we turn to a brief review of trends in the geographical distribution of the Ghana population as recorded in 1948 and 1960. Census data confirm the generally accepted view that economic development induces urbanization. In 1948, 12.8 per cent. of the reported population lived in urban areas (defined for the 1960 Census as centres with 5,000 or more

TABLE I.2
Ghana Population Projections by Age Groups, 1960-75

Years—	1960 *		1970 Mortality			1970 Mortality			1975 Mortality			1975 Mortality			
	Male	Female	Total	High Mortality		Low Mortality		High Mortality		Low Mortality		High Mortality		Low Mortality	
				(a) Nil Immig.	(b) Net Immig.	(c) Total M + F	(a) Nil Immig.	(b) Net Immig.	(c) Total M + F	(a) Nil Immig.	(b) Net Immig.	(c) Total M + F	(a) Nil Immig.	(b) Net Immig.	(c) Total M + F
Total (all age groups)	3,400	3,327	6,727	8,491	341	8,833	8,811	9,151	9,753	543	10,296	10,289	10,832		
0-4	591	596	1,187	1,474	53	1,527	1,520	1,573	1,712	85	1,797	1,847	1,931		
5-9	498	492	990	1,222	25	1,247	1,285	1,310	1,381	57	1,439	1,453	1,510		
10-14	382	367	749	1,040	15	1,055	1,084	1,099	1,198	32	1,231	1,268	1,300		
0-14	1,470	1,455	2,926	3,736	93	3,828	3,889	3,982	4,292	174	4,466	4,567	4,741		
15-64	1,812	1,767	3,579	4,549	236	4,786	4,690	4,927	5,227	352	5,579	5,454	5,806		
64+	118	104	222	207	11	218	232	244	233	18	251	267	285		
15+	1,930	1,871	3,801	4,756	249	5,004	4,922	5,170	5,460	370	5,830	5,722	6,091		

'000

Source: Summary of Provisional Population Projection made by Ghana Census Office for 1960-80 (private communication, 26th August 1963). Under high and low mortality assumptions, with and without net immigration at 30,000 per annum, and at constant fertility rate (age—sex adjusted birth rate—49.6 per 1,000 women of 15-44 years for high mortality and 47.3 per 1,000 for low mortality).

* Population Census graduated data.

TABLE I.3
Population Projections, 1948-1960-1975
(Project Team Estimates for 1948-60)

	High Mortality (I)			Low Mortality (II)		
	(a)	(b)	(c)	(a)	(b)	(c)
1948	5,204	...	5,204	4,896	...	4,896
1955	5,883	120	5,953	5,628	120	5,748
1960	6,367	} 360	6,727	6,348	} 360	6,708
	6,727			6,727		
1965	7,510	160	7,670	7,670	160	7,830
1970	8,491	341	8,833	8,810	341	9,151
1975	9,753	543	10,296	10,289	543	10,832
Annual Growth, Per Cent.—						
7 years (1948-55)	1.65	...	1.93	2.00	...	2.32
5 years (1955-60)	1.77	...	2.48	2.48	...	3.02
12 years (1948-60)	1.70	...	2.18	2.21	...	2.70
5 years (1960-65)	2.23	...	2.66	2.66	...	3.10
10 years (1960-70)	2.37	...	2.79	2.76	...	3.15
15 years (1960-75)	2.50	...	2.91	2.90	...	3.32

inhabitants), while 6.8 per cent. (279,000) lived in the three largest towns. By 1960, 23 per cent. lived in urban areas and 10.9 per cent. (730,000) in the three principal municipalities. Table I.4 illustrates the differential growth rates between 1948 and 1960. No significant geographical bias has been ascertained in either enumeration, although, of course, the absolute extent of the expansion is overstated because of under-enumeration in 1948. If the estimated figure for the population in 1948 of 5,204,000 can be taken as a more accurate figure than the Census total of 4,119,000, the overall growth rate for 1948-60 is reduced from 63.3 per cent. to 29.3 per cent.; the increase in the urban population, from 666,000 in 1948 (adjusted as 12.8 per cent. of 5,204,000) to 1,550,000, is 132.7 per cent.; and the rural increase is reduced to 14.1 per cent. or 1.11 per cent. per annum. In absolute terms, of the total (adjusted) population increase of 1,523,000, only 639,000 or 42 per cent. is accounted for by the rural population.

TABLE I.4
Population Increases between 1948 and 1960
Analysis by Size of Localities

	Census Data			Adjusted		
	Total	Rural	Urban	Total	Rural	Urban
1948 ('000)	4,119	3,589	530	5,204	4,538	666
Per cent. distribution	100.0	87.2	12.8	100.0	87.2	12.8
1960 ('000)	6,727	5,177	1,550	6,727	5,177	1,550
Per cent. distribution	100.0	77.0	23.0	100.0	77.0	23.0
Per cent. increase	63.3	44.2	192.4	29.3	14.1	132.7

I.13 In addition to the attraction of urban centres, population growth has been fastest in the cocoa-producing regions of Brong-Ahafo and Ashanti, which have drawn immigrants not only from foreign countries but also from other regions of Ghana. In 1960 only 54.3 per cent. of the population of Accra Capital District were born within the region; 15.4 per cent. were born abroad and 30.3 per cent. in other parts of Ghana, mainly the neighbouring

Eastern and Western Regions. On the other hand, Ashanti and Brong-Ahafo drew migrants mainly from the Northern Region and Upper Volta (Volta Republic). The Northern and Volta Regions, with the lowest *per capita* incomes, were probably on balance losing population to the wealthier areas within Ghana at a faster rate than the inflow of immigrants from abroad—principally from Upper Volta and Togo. Depopulation took place between 1948 and 1960 in the Upper Region, which was part of the Northern Region at the time of the 1960 Census. Table I.5 summarises the apparent and “adjusted” changes between 1948 and 1960 in population by regions.

TABLE I.5
Population Changes by Region, 1948-60

	1948 Census		1948 Adjusted (‘000)	1960 Census (‘000)	Apparent Change 1948-60			Adjusted Change 1948-60		
	(‘000)	Per cent.			(‘000)	Per cent.	(per ann.) Per cent.	(‘000)	Per Cent.	(per ann.) Per cent.
Total	4,119	100.0	5,204	6,727	2,608	63.3	4.2	1,523	29.3	2.2
Western (1)	863	21.0	1,093	1,378	515	59.7	4.0	285	26.1	2.0
Western (2)	376	9.2	475	626	250	66.5	4.3	151	31.8	2.3
Central (2)	487	11.8	616	751	264	54.2	3.7	135	21.9	1.6
Accra C.D.	225	5.5	286	492	267	118.7	6.8	206	72.0	4.6
Eastern	667	16.2	843	1,094	427	64.0	4.2	251	29.8	2.2
Volta	496	12.0	624	777	281	56.7	3.8	153	24.5	1.8
Ashanti	580	14.1	734	1,109	529	91.2	5.5	375	51.1	3.5
Brong-Ahafo	247	6.0	312	588	341	138.1	7.5	276	88.5	5.4
Northern (1)	1,039	25.2	1,311	1,289	250	24.1	1.8	-22	-1.7	-0.1
Northern (2)	379	9.2	458	532	153	40.4	2.9	74	16.2	1.3
Upper (2)	659	16.0	853	757	98	14.9	1.2	-96	-11.3	-1.0

Source: 1960 *Population Census of Ghana*; 1961 *Statistical Year Book*.
(1) 1960 Census Region; (2) 1961 Administrative Region.

I.14 Differences in population growth rates have important implications in any assessment of regional production and consumption trends. How far they will continue during the present and next decade will depend partly on the effectiveness of the Government’s Development Plan, which has as one of its aims the correction of regional disparities in economic development within Ghana. The success of the Volta River Project and schemes for bringing to the North a larger share of public investment projects may reduce the shifts of population from these poorer regions. On the other hand, there seems every reason to expect a further concentration of the population in the larger towns by 1970. A major task facing Ghana over the decade will therefore be the creation of employment opportunities in secondary industry, without which serious problems of urban unemployment will arise.

I.15 Since we have no firm basis for estimating further trends in urbanization, we have not attempted to make separate projections for the urban and rural populations of Ghana. We also consider that in forecasting future levels of demand for food in general and for selected imports, the immigrant communities, including non-African residents, are not sufficiently important or distinct to call for special treatment by way of separate projections.⁽²⁾

CHAPTER I
REFERENCES

<i>Note</i>	<i>Para.</i>	<i>Section</i>	
1	3	A	We are greatly indebted to the Ghana Census Office for their assistance and advice. Chapter I is based primarily upon Volumes I to IV of the 1960 <i>Population Census of Ghana</i> and upon provisional projections, 1960-80, prepared by the Census Office.
2	15	C	The 1948 Census recorded some 130,000 persons, 3 per cent. of the total population, as born outside the Gold Coast and British Togoland, of which Africans accounted for 122,000, Asians for 2,000 and others, 7,000. The 1960 Census recorded 560,000 born abroad, including 24,000 of Ghana origin; 541,000 or 8.1 per cent. of the total population were born in other African countries, 3,000 in Asia and 11,000 elsewhere. Taking into account persons of foreign origin born in Ghana—some 290,000, including 2,000 non-Africans—the total “immigrant” population was 827,000, of which Asians accounted for less than 4,000 and others for 12,000. Thus the non-African population resident in Ghana doubled over the 12-year period but constituted only 2 per cent. of all persons of foreign origin and only 0.2 per cent. of the total population.

CHAPTER II

ECONOMIC DEVELOPMENT IN GHANA, 1950-1961

This chapter is devoted to a general survey of the main developments in the Ghana economy during the past decade. Its object is to describe the background against which prediction of future trends may be attempted.

A. Estimates of Ghana's Domestic Product, 1950-61

II.2 The first post-war calculation of Ghana's gross domestic product was made by Messrs Dudley Seers and C. R. Ross for the three years, 1948-49, 1949-50 and 1950-51.⁽¹⁾ They confined their estimates to the monetary economy and provided figures of £98 million, £122 million and £152 million, for the three years respectively. On the basis of the population data then available, those aggregates represent *per capita* income estimates of £23, £29 and £35. Dr David E. Carney later adjusted the Seers and Ross figure for G.D.P. in 1950-51 to include a value of £18 million for subsistence food production and rent, for which no estimates were available.⁽²⁾ Details of this revised estimate of £170 million are shown below in Table II.1.

TABLE II.1
Gross Domestic Product, Income and Expenditure, 1950-51

Gross Domestic Product	Per £m. Cent.	Gross Domestic Income	Per £m. Cent.
Extractive or Export Sector	(74) (44)	Wage bill (recorded employment) (1)	13 8
Cocoa	56 33	Cocoa payments to farmers, etc.	36 21
Forestry	5 3	Profits and surpluses, export duties and rents	37 21
Mining	13 8	Other mixed incomes (2)	74 44
Building	5 3	G.D.P. at factor cost	160 94
Government	7 4	Net indirect taxes	10 6
Public enterprises, including railways	3 2		
Other marketed production (3)	62 36		
Subsistence and rent (4)	18 11		
Total product (at market prices)	170 100	Total domestic income	170 100
Private consumption	122 72	Net payments to foreign factors	
Public consumption	6 3	Interest and profits	-5 -3
Domestic investment	24 14		
Net foreign investment	18 11		
Total domestic expenditure	170 100	Gross national income	165 97

(1) Excludes cocoa, food farms, small-scale trading, etc.

(2) Food farming, distribution, etc.

(3) Includes food farming, distribution, manufacturing and services.

(4) Own consumption of food, housing, etc.

Source: Carney, David E. *Government and Economy in British West Africa*.
Certain components shown by Mr Carney have been re-classified.

II.3 The Government Statistician has also produced various estimates of national income and expenditure but periodic revision of the figures makes it difficult to trace a consistent time series from 1950. Officially-revised estimates for the period 1955 to 1961 are, however,

more reliable and constitute one of the main sources of data for macro-economic analysis. Calculations are based mainly upon the expenditure approach provided by surveys of household expenditure and analysis of public accounts and to date there are no published estimates of domestic product or income derived independently of the expenditure method. The most important component of private consumption, namely expenditure on local foodstuffs including subsistence output, is still calculated by the same method as that used previously, *i.e.*, a constant *per capita* quantum is raised to an aggregate figure and adjusted for annual changes in population and local food prices. This method must be retained until the findings of an Agricultural Census provide an independent source of data on physical output of foodstuffs. Nevertheless, the improved coverage of the National Household Survey, undertaken over a period extending from mid-August 1961 to the end of March 1962, and the use of weighted indices of population and prices represent a considerable improvement in the estimates available for most recent years, 1960 and 1961 in particular. We now have a more comprehensive "map" of the Ghana economy at a point in time (see Table II.2) but must be cautious in deriving detailed *trends* from the short time series, 1955-61, still heavily dependent on population and price movements for one major component, local food production and consumption.

II.4 Estimates of local food production are compiled on the basis of constant *per capita* consumption in real terms. It may be objected that such an assumption is most unrealistic since variations in soil fertility, climate, animal and plant diseases, civil strife, etc., may conspire to change physical output from year to year. Few would dispute the importance of such factors, but it is also probable that under existing peasant farming conditions attempts to measure short-term changes in physical output may also be subject to large statistical errors. Indeed many economists and national income statisticians with experience of African conditions take the view that year-to-year changes in local food production are not likely to be sudden or serious except in circumstances of national calamity.

II.5 Since the official estimates of Ghana's product are calculated from the expenditure side, subsistence output and factor payments in kind are included. Thus the definition of total output is wide enough to give food production and other rural activities (excluding intra-household services) a large "weighting" if we use G.D.P. estimates as an index of production. Small-scale trading activities in local foodstuffs, imported goods and "second-hand" articles are also measured more adequately than is usually possible by the product method. In consequence, changes in the "advanced" sectors of the economy such as manufacturing, service activities and even agricultural export industries are seen to have much smaller effects on economic development. Moreover, since part of the expansion in advanced sectors reflects the transformation of rural activities—food production for consumption on the farm or hut-building—into "factory-work" some reduction in real output in the traditional sector may be expected to accompany advances elsewhere.

B. Composition of Domestic Product and Expenditure

II.6 We have dealt at some length with the statistical problems involved in measuring aggregate output in Ghana since they have a direct bearing upon any projection of future movements in the level and composition of demand and supply. In particular, we have noted the absence of quantitative data on local food production, which is of special interest to this study, and the need to include developments in the first half of the 1950's in any appraisal of long-term growth rates. In presenting what we consider to be reasonably consistent time series of Ghana's G.D.P. from 1950 we have followed the wider coverage and methods adopted by the Government Statistician for the revised estimates, 1955-61. Carney's adjustment of the Seers and Ross estimates is probably still an under-statement of the position

TABLE II.2
Gross Domestic and National Product of Ghana, 1960 and 1961

(a)		1960		1961		(b)		1960		1961	
Expenditure on Gross National Product		£m.	Per Cent.	£m.	Per Cent.	Gross Domestic Product		£m.	Per Cent.	£m.	Per Cent.
Private consumption		340	72.3	394	79.1	Extractive or export sector		(125)	(26.6)	(99)	(19.9)
Public consumption		48	10.2	55	11.0	Cocoa		75	16.0	51	10.2
Domestic investment		(107)	(22.7)	(90)	(18.1)	Other agricultural exports		3	0.6	3	0.6
Fixed capital		96	20.4	104	20.9	Forestry and sawmilling		26	5.5	26	5.2
Stocks		11	2.3	-14	-2.8	Mining		21	4.5	19	3.8
Foreign investment		(-25)	(-5.3)	(-41)	(-8.2)	Building, private		18	3.8	21	4.2
Exports		123	26.2	122	24.5	Government		24	5.1	28	5.6
Less imports		-148	-31.5	-163	-32.7	Public enterprises		9	1.9	11	2.2
Expenditure on gross domestic product		470	100.0	498	100.0	Manufacturing		9	1.9	12	2.4
Net factor payments abroad		-5	-1.1	-7	-1.4	Other industry and distribution		157	12.1	166	13.3
Net indirect taxes		-26	-5.5	-35	-7.0	Food, production and distribution		139	29.6	167	33.5
Gross national expenditure at factor cost		439	93.4	456	91.6	Rent and household services		43	9.1	47	9.4
						Other (residual)		46	9.8	47	9.4
(c)		1960		1961		Gross domestic product		470		498	
Gross domestic income at market prices		470	100.0	498	100.0						
Cocoa payments to farmers		45	9.6	36	7.2						
Other farm cash income		40	8.5	45	9.0						
Subsistence food production		58	12.3	66	13.3						
Rent and household services		43	9.1	47	9.4						
Mixed income of traders, etc.		90	19.2	103	20.7						
Wage bill (recorded employment)		70	14.9	77	15.5						
Profits and surpluses		124	26.4	124	24.9						
of which : Export duties		(20)	(4.3)	16	(3.2)						
Indirect taxes		(26)	(5.5)	35	(7.0)						
Gross domestic income at factor cost		444	94.5	463	93.0						

Source: *Economic Survey, 1961, and Report on the National Accounts of Ghana, 1955*, by D. Walters, U.N. Economic Adviser (typescript, Accra, 1962). Table (c) private estimate using above sources; *Labour Statistics, 1961*; R. Szereszewski's *The Inter-Sectoral Structure of the Economy of Ghana, 1960* (typescript, Accra, November 1962) and P. T. F. Golding's *An Enquiry into Household Expenditure* Economic Bulletin (Accra), vol. VI, No. 4, 1962.

in 1950-51, since he implies a share of 11 per cent. of G.D.P. for subsistence production of food and occupation of dwellings, compared with a proportion of 22 per cent. for 1961, using data from the National Household Survey. Movements in population and the limited information available on output of food crops, as well as *a priori* reasoning would suggest that the relative size of the subsistence sector would decline as the exchange economy developed (as it undoubtedly has done in Ghana over the past decade). Similarly, cash income received by farmers for crops, other than cocoa, probably accounted for a falling share of G.D.P., although the proportion of consumers' expenditure on local food absorbed by distributive margins may well have risen.

II.7 Table II.3 summarises estimates of G.D.P. at current prices. Official estimates have been taken for the period 1955 to 1961; our calculations for the earlier years, 1950 to 1954 are based upon similar assumptions about constant *per capita* output of local foodstuffs and a population growth rate of 2 per cent. per annum. Details for each year from 1950 to 1962 will be found in Table S.1.

TABLE II.3
Expenditure on Gross Product, 1950-61
(expressed as annual averages)

At Current Market Prices	1950-54		1955-58		1959-61	
	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.
Personal consumption . . .	190	70.9	272	75.9	351	75.0
Public consumption . . .	16	6.0	31	8.7	47	10.0
Total consumption . . .	206	76.9	303	84.6	398	85.0
Gross fixed investment . . .	35	13.0	55	15.4	92	19.6
Increase in stocks . . .	1	0.4	...	...	2	0.4
Total capital formation . . .	36	13.4	55	15.4	94	20.0
Domestic expenditure . . .	242	90.3	358	100.0	492	105.1
External surplus . . .	26	9.7	...	...	-24	-5.1
Gross domestic product . . .	268	100.0	358	100.0	468	100.0
Factor payments abroad (net)	-4	-1.5	-2	-0.6	-5	-1.1
Expenditure on G.N.P. . . .	264	98.5	356	99.4	463	98.9

II.8 It will be observed from Table II.3 that the years 1950 to 1961 may be divided conveniently into three distinct phases: the earlier years, 1950 to 1954 when approximately 10 per cent. of G.D.P. was invested abroad and total consumption by households and general Government accounted for some three-quarters of output; a middle period, 1955 to 1958, during which total domestic expenditure on consumption and capital formation absorbed the whole of output so that external trade in goods and non-factor services was approximately in balance; and the most recent period, 1959 to 1961, when overseas balances accumulated in the earlier years were run down to finance domestic investment and public consumption which grew more rapidly than output or domestic savings.

II.9 Over the seven-year period of the new Development Plan, 1963-70, it is hoped that foreign aid will be sufficient to enable the economy to sustain gross investment at a rate representing some 20 per cent. of G.D.P. It is proposed to restrain total consumption so

that it does not exceed 85 per cent. If, however, foreign aid is not forthcoming to fill a 5 per cent. gap, further measures will probably be directed towards reducing imports of consumer goods rather than capital equipment. Detailed discussion of Ghana's external relations and development plans will be postponed until the next Chapter but we may note here that by 1959-61 Ghana had become much less dependent upon exports as a source of domestic income. Whereas in 1950-54 visible exports accounted for about one-third of G.D.P., by 1959-61 they had declined to one-quarter. On the other hand, visible imports had risen slightly from about 24 per cent. to 27 per cent. They represented a fairly constant proportion of total consumers' expenditure at 21 to 20 per cent., and of gross fixed capital formation (46 to 44 per cent.). Tables S.2 and S.3 show the composition of consumers' expenditure and gross domestic fixed capital formation for the years, 1955, 1960 through 1962, as covered in the revised official estimates. Reference to Table S.2 suggests that the structure of personal consumption at current prices showed little change between 1955 and 1961. However, since these estimates rely heavily upon the findings of the recent National Household Survey, 1961-62, they cannot be expected to reflect accurately all changes in consumption of domestic foodstuffs and other locally-produced goods and services. Our own calculations suggest that the share of total consumers' food expenditure devoted to imported items rose slightly over the decade from 11 to 13 per cent., while the relative importance of imported drink, tobacco and textiles declined.

II.10 Although we have not been able to estimate a consistent time-series for G.D.P. by factor income or industrial product for the period, 1950-61, certain components of particular relevance to this study may be distinguished. In the following Table II.4 we relate G.D.P. (calculated by the expenditure approach) to (a) domestic exports, (b) net payments to cocoa farmers and (c) recorded wage and salary earnings.

TABLE II.4
Components of Ghana Domestic Income

	Annual Averages					
	1950-54		1955-58		1959-61	
	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.
G.D.P. at current market prices	268.0	100.0	357.5	100.0	468.0	100.0
Domestic exports, f.o.b.	90.4	33.7	94.0	26.3	113.4	24.2
Cocoa farmers' receipts (net)	29.4	11.0	22.7	9.1	39.2	8.4
Recorded wages/salaries	n.a.	n.a.	45.0	12.6	68.3	14.6

C. Movement in Prices, 1950-61

II.11 Table S.1 shows the development of Ghana's aggregate output at current and at constant (1960) market prices. We have already referred briefly to the difficulty of measuring changes in real output in the rural sector of the economy, where many activities are undertaken outside the exchange economy. A further complication arises from the inadequacy of price data available for market transactions affecting a wide range of consumer goods and services in urban as well as rural areas. Only for Accra are there reasonably reliable statistics of consumer price movements extending over the period under review; and even these are restricted to a cost-of-living index applicable to wage-earning families covered by the 1953

household budget survey. In addition, an index of retail prices of locally produced foodstuffs has been compiled for seven main towns, weighted by the estimated population in these centres in 1954. Reference to the preliminary findings of the National Household Survey, 1961-62, happily confirms that the population weights assigned to the component towns also reflect relative shares in aggregate local food consumption. Moreover, the 1954 Accra index weights approximate closely to those applicable for an average urban family budget derived from 1961-62 survey data.⁽³⁾

- II.12 Wholesale and retail prices for foodstuffs in rural markets are available over a period of years but comprehensive rural price indices have not been published. Wide variation in price levels and movements occur within the same Region or district and for aggregative purposes price movements in Regional "capital" cities provide the only guide to developments in rural markets. Components of aggregate expenditure on Ghana's domestic product have therefore been deflated by reference to changes in the Accra retail price index for items other than local food. Consumption of local food (subsistence and marketed) has been deflated by the weighted index of local food prices. Reference has also been made to import price data for relevant items and to indices of wage earnings and building costs for Government consumption and capital formation.
- II.13 In presenting estimates of G.D.P. at constant prices in Table S.1, we have attempted to distinguish movements in *real income available* from changes in output in physical terms or *real product produced*. The difference arises from the effects of shifts in the terms of trade, *i.e.*, fluctuations in real income due to world price movements and not to changes in physical production in Ghana. Selection of appropriate price indices and base years influence the magnitude and, in certain cases, the net effect of movements in the terms of trade.⁽⁴⁾ However, the year-to-year shifts in Ghana's commodity terms of trade have often been so pronounced that we have made some effort to measure possible magnitudes of gains and losses. Table S.1 and a more detailed discussion of Ghana's terms of trade, summarized in Table III.2, indicate that during the early years of the decade Ghana enjoyed substantial gains from favourable shifts in the terms of trade, while in more recent years potential improvements in real income arising from the expansion in physical output have been diminished by adverse movements.
- II.14 Allowing for a wide margin of error in deflating G.D.P. at current prices, it would appear that both real income available and real product produced have expanded over the period, 1950 to 1961, at approximately the same average compound rate of 4.7 per cent. per annum. During the earlier period, 1950-54, output in quantitative terms rose much more slowly, at around 2.2 per cent. per annum, while favourable shifts in the terms of trade raised the rate of growth in real product available to nearly 6 per cent. By contrast, over the period, 1955 to 1961, physical output increased at a faster rate of around 5 per cent.; while real product available expanded more slowly, at 3.5 per cent. The former concept provides a useful index of the productive performance of the economy after eliminating the effects of "windfall" losses and gains from shifts in the terms of trade. Unless we can predict with some certainty future shifts in Ghana's terms of trade, projection of developments in the economy to 1975 should pay regard to this measure of economic growth.
- II.15 Gross domestic product at constant prices (real income available) is however a more appropriate welfare index. Two adjustments have still to be made before we can assess the net rate of growth in income available to Ghanaians. The first involves deduction of income earned by foreign factors of production. Official balance-of-payments estimates of this component of G.D.P. indicate that net payments abroad of interest and profits were relatively

unimportant for Ghana during the period 1950 to 1961, although they rose sharply in 1960 and 1961. Earnings of immigrant workers and retained profits of expatriate enterprises are, however, excluded from the official estimates. We are not therefore in a position to define national income at current or constant prices with any certainty, although there is little evidence to suggest that foreigners in general have exacted a rising share of G.D.P. The second adjustment involves allowance for capital consumption. Here again no official estimates are published; but it is probable that, with the expansion in capital formation and the shift in emphasis to shorter-lived assets, plant and machinery, capital consumption has accounted for an increasing share of gross output. We may, however, obtain a measure of the improvement in living standards from the trend of consumption at constant prices, which increased by 100 per cent. over the period, 1950-61. Moreover, since we are primarily concerned with the real purchasing power available to the average Ghanaian, it is to a consideration of this determinant of demand that we now turn.

D. Changes in Real Product and Consumption per Head

II.16 Although neither estimates of aggregate output nor population movements are wholly reliable, our calculations, summarized in Table S.4, indicate that the average level of real income available per head rose rapidly during the earlier years of the decade, from about £51 per head at constant (1960) prices in 1950-52 to £61 in 1954-55. The rate of improvement slackened between 1955 and 1958; but during the following two years, *per capita* real income increased sharply, to a peak of around £70 in 1960. Similar trends in the movement in *per capita* G.D.P. at constant prices have been observed for other primary exporting economies where the reversal in export price trends after 1954 has retarded growth rates.⁽⁵⁾ However, in the case of Ghana at least, deterioration in the terms of trade does not seem to have had a pronounced impact on the pace of internal economic development until 1961, when a combination of unhappy circumstances resulted in a sudden check in the growth of physical output per head. The following table illustrates the divergence between *per capita* growth rates when expressed in terms of (a) real G.D.P. produced, (b) expenditure on G.D.P. at constant prices and (c) personal consumption.

TABLE II.5
Indices of *Per Capita* Growth Rates at Constant (1960) Prices
(1950 = 100)

	Real G.D.P. Produced	G.D.P. Available	Personal Consumption
1950	100	100	100
1954	101	117	112
1955	113	121	130
1960	132	134	141
1961	131	128	147
Compound rate per annum—	Per cent.	Per cent.	Per cent.
1950-54	0.2	4.0	2.8
1950-55	2.5	3.9	5.3
1955-61	2.5	0.9	2.2
1950-61	2.5	2.2	3.6
1955-60	3.1	2.0	1.7
1950-60	2.8	2.9	3.5

II.17 Adjusting for population increases, real personal consumption rose by about 50 per cent. over the period, 1950-61, representing an average annual growth rate of 3.6 per cent. Since

both *per capita* real income available and output in quantitative terms expanded more slowly, at an annual rate of 2.2 and 2.5 per cent. respectively, the "average" Ghanaian consumer reaped substantial benefits: first, from the favourable terms of trade during the earlier period, 1950 to 1954, when there was little increase in physical output per head, and then from the increases in real product produced in later years. It would appear from the growth rates expressed in Table II.5, that *per capita* increases of the order of 2 per cent. were achieved in both real income and consumption during the period, 1955 to 1960. A combination of internal circumstances and a sharp fall in cocoa export prices reduced physical output and real income available per head in 1961, although personal consumption rose sharply as the result of record payments to cocoa growers and wage-earners.

II.18 While *per capita* income series indicate movements in the average standard of living, they may provide a meaningless index of improvements enjoyed by the bulk of a country's inhabitants. We have therefore taken *per capita* consumption as a more appropriate measure. Little is known about changes in the distribution of income in Ghana, and while developments in the early 1950's may have favoured upper-income groups (both local and expatriate), subsequent changes in marketing arrangements and improvements in real wages have probably made distribution more equitable in the last few years.⁽⁶⁾

CHAPTER II

REFERENCES

<i>Note</i>	<i>Para.</i>	<i>Section</i>	
1	2	A	SEERS, DUDLEY and ROSS, C. R. <i>Report on Financial and Physical Problems of Development in the Gold Coast.</i> Government Printer, Accra. July 1952.
2	2	A	CARNEY, DAVID E. <i>Government and Economy in British West Africa.</i> Bookman Associates. New York. 1961, p. 30.
3	11	C	Relevant price indices are summarised in Table S.25.
4	13	C	See note 2, paragraph III.22, section D.
5	16	D	Compare, for example, Nigeria's experience in U.S.D.A. ERS-Foreign-32, Chapter II, section F, p. 25; and Chapter III, section D, pp. 36-37. Also HADDON-CAVE, C. P. <i>Real Growth of the East African Territories, 1954-60.</i> East African Economics Review, vol. 8, No. 1.
6	18	D	See BIRMINGHAM, W. B. <i>An Index of Real Wages of the Unskilled Labourer in Accra, 1939-1959.</i> Economic Bulletin (Accra), vol. 4, No. 3. According to this index the real wage rate of unskilled labour was below the 1939 level until as late as the end of 1958.

CHAPTER III

EXTERNAL ECONOMIC RELATIONS

Ghana's dependence on the rest of the world may be illustrated by relating the value of her external trade to gross domestic product. In spite of structural changes in the domestic economy, exports of a narrow range of primary commodities have accounted for about one-fourth of G.D.P. since the mid-1950's, as against as much as one-third in the earlier post-war period. Export proceeds from cocoa, timber and minerals have provided the primary stimulus to economic activity in the past and will continue to be an important determinant of changes in aggregate output and demand during the period of our projections to 1975. Much therefore depends upon the growth in markets in industrialised countries, principally Ghana's traditional customers in the U.K., Western Europe and the U.S.A. While one of the major objectives of the new Development Plan will be to broaden the base of the economy and to diversify exports (in respect of both products and destinations) the rate of growth in the economy may be expected to remain closely linked to the market prospects for one commodity, cocoa, which has continued to represent about two-thirds of the total value of domestic exports over the whole post-war period and still accounts for about 15 per cent. of G.D.P. (A review of the world cocoa situation and long-term prospects for Ghana exports will be found in Appendix A.)

III.2 If exports have tended to account for a declining share of G.D.P., imports of goods have increased, from 23.5 per cent. of G.D.P. in 1950-54 to 27.2 per cent. in 1959-61. Since imports have grown at a faster rate than real income available, a reflection of the deterioration in the terms of trade, Ghana's balance of payments and foreign exchange position have been greatly weakened. Faced with a balance of payments "crisis" in 1961, Ghana, like many other countries in the same position, reacted with measures to cut imports and curtail the drain on exchange reserves. As a longer term policy, special priority in the Development Plan is to be accorded to sectors and projects which either earn or save foreign exchange. However, since future development of the economy will involve a high and sustained level of fixed capital formation, which can only be financed from domestic resources at the expense of an intolerable diminution of average standards of consumption, the Plan also places considerable emphasis on attracting foreign aid and private investment. It is recognised that while import substitution may reduce dependence on overseas supplies for a range of consumer goods, and services such as insurance, transport and travel, demand will increase for producer goods which can only be supplied from abroad. There will thus be a shift in the composition of imports, although the total volume will continue to rise.

III.3 Since our study is primarily concerned with (i) external factors likely to influence the growth of domestic demand for foodstuffs and (ii) Ghana's capacity and willingness to import selected items of food, drink and tobacco, we shall be concerned in this Chapter with those influences most likely to affect the choice between imports of capital goods and other producer materials necessary for capital formation and industrialisation, and consumer goods which may act as incentives to higher labour productivity. We begin our appraisal with a review of the behaviour of Ghana's balance of payments over the past decade.

A. The Balance of Payments, 1950-62

III.4 The period 1950-62 included the largest surplus and the largest deficit ever recorded in Ghana's external trade. Under the impact of rising world prices for cocoa, the current

account was in overall balance until 1955 when a sharp fall in prices reduced the value of Ghana's cocoa exports by 20 per cent. However, while the large surpluses of the early 1950's may be explained in terms of rising cocoa prices, the mounting current deficit of more recent years must be attributed to a rapid rise in the volume of imports and larger net disbursements in respect of "invisible" transactions.

III.5 Ghana's experience has been similar to that of many other primary producing countries. Favourable balances on visible trading account in the early 1950's permitted the accumulation of substantial exchange reserves held by banking institutions and public authorities, notably the Cocoa Marketing Board. The book value of these reserves, held largely in sterling, rose from £84 millions at the end of 1949 to a peak of £208 millions at the end of 1955. This period of large-scale foreign investment by Ghana, averaging some 10 per cent. of G.D.P., was followed by a four-year period, 1956 to 1959, during which overseas reserves were drawn down gradually to finance "invisible" and capital transactions rather than a visible trade gap, which did not become a major factor until 1960. The draft on external reserves which had amounted to less than £7 millions in 1959, increased to £18 millions in 1960 and to £75 millions in 1961. Restrictions introduced towards the end of 1961, and reinforced by further fiscal measures in the middle of 1962, contributed effectively to the more favourable out-turn for 1962. Tapping of overseas credit facilities enabled Ghana to finance the smaller current deficit in 1962 without further recourse to official balances, which were estimated at £72 million at the end of the year.

TABLE III.1
Ghana's Balance of Payments, 1950-62

	Visible Trade Balance (1)	Invisible Balance (2)	Total Current Account	Exchange Reserves	
				Change	Total (3)
1950 . . .	29	-9	20	31	114
1951 . . .	28	-9	19	23	138
1952 . . .	20	-9	11	7	145
1953 . . .	16	-11	5	3	158
1954 . . .	44	-3	41	38	196
1955 . . .	8	-6	2	12	208
1956 . . .	-2	-11	-13	-18	190
1957 . . .	-5	-9	-14	-18	171
1958 . . .	20	-9	11	2	173
1959 . . .	...	-11	-11	-6	167
1960 . . .	-14	-20	-34	-18	149
1961 . . .	-28	-25	-53	-75	74
1962 . . .	-4	-24	-28	-2	72

Source: 1961 *Statistical Year Book*; *Quarterly Digest of Statistics*.

- (1) Exports, including non-monetary gold, f.o.b. less imports, c.i.f..
- (2) Derived as a residual of balance on current account less visible balance, includes investment income and transfer payments.
- (3) Book value of external assets of official and banking institutions as at 31st December. In the above Table annual net increase shown +; decrease -.

III.6 The main factors governing the adequacy of these reserves are (a) the size and persistence of any deficit on current account, (b) the burden and maturity distribution of external indebtedness and (c) Ghana's ability to attract "foreign aid" in the form of grants, long-term

investment or shorter credits. Ghana's continued dependence on a narrow range of primary commodities, subject to large fluctuations in volume and value, require her to maintain a cushion to meet unforeseen and sudden deficits in the balance of payments. It follows therefore that if exchange reserves are to be maintained at their present level (some £72 millions at the end of 1962) the whole burden of financing deficits in balance of payments will have to be met by *net* imports of capital. We shall examine Ghana's foreign aid requirements in Sections E and F below, after reviewing past performance and prospects for her visible trade.

B. Pattern of Visible Trade

III.7 The structure of Ghana's external trade over the past ten years or so may be seen clearly from the tables appended to this report. Analysis of exports is not complicated: cocoa accounts for about two-thirds of domestic exports; minerals, including newly-mined gold, constitute a further 20 to 25 per cent.; and timber, as logs or as more processed products, provides most of the remaining 10 per cent. Exports of other agricultural products are unimportant: kola nuts, oil seeds and copra represent about 1 per cent. Over the period 1949 to 1962 the items mentioned above accounted for 99 per cent. of total domestic exports (see Table S.4). In addition there was a small, but growing source of income represented by re-exports, mainly manufactured consumer goods and fuel destined for neighbouring French-speaking territories, and some bunkers and ships' stores (unrecorded in the Annual Trade Reports as from 1954).

III.8 Table S.5 describes the trend of Ghana's principal exports by volume, value and unit price. Except in the case of cocoa where changes in the size of the Ghana crop are inversely correlated with the export price, Ghana "takes" a world price which is largely unaffected by changes in her relatively small share of world trade. Moreover, export prices for the industrial raw materials which Ghana produces have not shown the same decline that has been such a feature of international trade in primary commodities since the peak levels attained in the early 1950's. On the whole, both quantities and prices obtained for exports of timber, manganese and bauxite have risen steadily over the post-war period. In the case of diamonds, selling prices have reflected variations in quality; while the price of gold has been fixed in terms of sterling since that currency was devalued in September 1949. Thus part of the adverse effect of the decline in cocoa prices since 1954 has been compensated by the opposite trend in prices realised for other exports. The relatively constant share of total exports represented by cocoa reflects the large expansion in volume since 1960.

III.9 The direction of Ghana's external trade over the post-war period can be seen in Table S.6 to have changed markedly. Although the U.K. has maintained its position as Ghana's principal trading partner, its share of total trade has declined, while that of E.E.C. countries has almost doubled. On an individual country basis, the U.S.A. has continued to retain second place as a market for Ghanaian exports but its relative importance fell sharply with the collapse of the cocoa boom after 1954. The extent of Ghana's continued reliance on sales to these three major markets can be judged from the analysis of exports by product and destination shown in Tables S.7 and 8. Eventual loss of preferences in major Commonwealth markets, principally the U.K., and any discrimination against Ghana cocoa in the European Common Market are not expected to have a disastrous effect on exports. On the other hand, the relative importance of markets in Eastern Europe and neighbouring African territories will probably increase. Bilateral trade agreements have created new markets for cocoa in Eastern Europe which have more than doubled over the period, 1949-62. In the case of inter-African trade, the problem is more difficult, given the complementary nature of primary producing economies and the reluctance of neighbouring

territories to endanger tax receipts and local production by significant tariff preferences. The division between franc-zone associates of E.E.C. and sterling non-associates adds a further complication. On balance, therefore, the main change in the relative importance of various markets for Ghana exports over the next decade would seem to depend upon the level of sales of cocoa to trade-agreement countries.

III.10 Imports into Ghana have increased in the past decade at a faster rate than either the value of exports or G.D.P. This high marginal propensity to import reflects the divergence between the pattern of production and the structure of demand within the domestic economy. Over the period 1954 to 1961, for instance, an average growth rate in total output of 5.5 per cent. has been associated with an increase in the volume of imports of 8.5 per cent.⁽¹⁾ This aggregate relationship naturally conceals changes in the degree of dependence for particular commodities. Table S.9 shows the change in the pattern of Ghana's imports by main commodity classes over the period, 1949-62. It will be observed that the proportion of the total import bill spent on foodstuffs remained fairly constant at around 16 per cent. until 1961 and 1962, when it rose to 18-19 per cent. in spite of the heavier import duties levied on foodstuffs from mid-1961. Imports on drink and tobacco, on the other hand, declined in importance as local substitutes developed behind protective duties. The main alteration in the composition of imports has been the decline in the proportion represented by textiles and other non-durable consumer goods and the increase in the importance of machinery and transport equipment. Table III.3 in Section E below analyses total imports by "end-use," a classification that clearly indicates the growing importance of equipment and materials used in fixed capital formation. Since in general capital goods may only be obtained from highly-industrialized countries which in the earlier years of the period supplied most of the consumer goods imported into Ghana, the relative importance of countries of origin have not changed greatly over the past decade or so (see also Tables S.10 and 11). The most significant change has been the sharp rise in imports from E.E.C. countries, largely at the expense of the U.K. since 1954, and the more recent growth in imports from Eastern Europe.

C. External Trade and Exchange Controls

III.11 During the early post-war period Ghana's external trade and exchange policy followed closely that of other members of the Sterling Area. As a dependent territory of the United Kingdom, Ghana's exports of primary produce entered the U.K. (and other Dominions) at preferential rates of duty. Preference for British or other Commonwealth goods was never reciprocated, but the existence of exchange controls governing imports from non-sterling sources and long-established commercial connections with expatriate merchants operating in West Africa provided British exporters with a "preferential" market until the mid-1950's. (Some measure of this "protection" may be seen from the fall in Britain's share of the Ghana market in recent years, summarised in Table S.6.) By 1954 most imports from O.E.E.C. countries had been freed from specific controls, although restrictions still covered imports from Japan and dollar account countries. However, as an important dollar-earner, Ghana was able to import certain products from North America, *e.g.*, wheat flour, canned fish and preserved meat. Imports of Japanese textiles were also increased under specific licences. What restrictions remained on imports from dollar sources were finally removed in 1960; and from that time the Ghana market was open to imports from all sources on the same terms, except for specific licences on Japanese goods (other than industrial machinery), on sugar (in accordance with the International Sugar Agreement) and on U.S. tobacco (to protect the "infant" tobacco-growing industry).

III.12 In July 1961, a "deflationary" budget was introduced with the intention of absorbing some of the inflationary effects of rising Government expenditure, record cocoa producer

payments for the 1960-61 season and a general increase in the minimum wage rate awarded from July 1960. It was hoped that sharp increases in indirect taxation would also reduce consumer demand for imported goods, thereby checking the drain on external exchange reserves. Existing import duties, which were still largely levied for revenue purposes, were raised and new taxes were imposed upon a wider range of consumer goods, including foodstuffs such as wheat flour which had been free of duty since 1949. Internal excise duties on beer and tobacco were also increased, and a new purchase tax was levied upon motor vehicles and other consumer durables. In the event, however, there was no immediate reduction in demand for imported goods; importing houses continued to release stocks at pre-budget prices, which were readily absorbed by traders and consumers in anticipation of future shortages and price increases. By the end of the year prices had stabilised at a new level; inflationary forces had been stemmed not, as was hoped, by higher indirect taxes but by a continued rise in imports of consumer goods.

III.13 Further increases in import duties were introduced in the next Budget of October 1962, designed to give greater protection for local production of import substitutes, in particular, beer, cigarettes, processed foods and rice, imports of which had risen sharply since 1960 as the result of higher prices for local staples and the import duty levied on wheat flour in the previous budget.

III.14 Table S.12 summarises the tariff rates applicable to Ghana imports of selected foodstuffs, beverages and tobacco products. The specific rate of 3d. per lb. levied on *rice* imports from October 1962 represented 45 per cent. of the c.i.f. value of imports over the period October 1962 through March 1963. The duty on *wheat flour* was increased from 2d. per lb. (introduced in July 1961) to 5d. per lb. from October 1962, a rise from 35 per cent. to 90 per cent. of the c.i.f. value. The rate of 3d. per lb. applicable to *refined sugar* represented some 60 per cent. of c.i.f. value, while that on *milk and cream* (at £1 per cwt.) amounted to 11 per cent. of the c.i.f. value. Since estimated revenue from canned and preserved milk and cream is not likely to exceed £200,000 in a full year and there are no close domestic substitutes, it seems difficult to attribute this tax to either revenue or protection motives. On the other hand, the heavier import duties on beer, spirits and tobacco products are expected to encourage consumption of local substitutes without involving a permanent loss of revenue. (Table S.13 shows the trend of customs revenue derived from products of special interest to this study.)

III.15 Exchange control was extended to Sterling Area countries from 5th July 1961. This measure was reinforced by the suspension of all Open General Licences on 1st December 1961 and the imposition of quantitative restrictions on imports from all sources. Various amendments to the exchange control and import licensing arrangements have been made to simplify procedure but some permanent machinery for conserving foreign exchange, securing protection for local production and influencing the *direction* of trade is expected to remain. The Ghana Government has concluded *bilateral trade agreements* with the countries of Eastern Europe and China and is anxious to promote greater inter-African trade. Trade and payments agreements have been concluded with a number of other West African states, e.g., Guinea, Mali and Dahomey, and a common customs area has been established with Upper Volta. An official embargo on trade with South Africa imposed in 1960 has since been extended to Portugal. In the case of bilateral trade with Soviet countries, the main purpose is to open up new markets for cocoa and obtain trade credits and technical assistance for development projects. However, the application of import licensing is also expected to involve a switch in imports of consumer goods from traditional sources to trade-agreement countries. Promotion of greater inter-African trade, on the other hand, may in the longer run provide Ghana with markets for manufactured goods in exchange for livestock and other foodstuffs.

III.16 To date Soviet countries have supplied capital goods, technical assistance and consumer durables rather than foodstuffs or textiles. No doubt Ghana would be willing to allocate a larger share of her food imports to trade-agreement sources if she could thereby obtain more financial assistance or an extension of the aggregate world market for cocoa. However, bilateral trade is subject to severe limitations. First, the nature of the consumer goods are determined by planning decisions in either the supplying or the importing country and not by free consumer choice; secondly, the Ghanaian consumer market is "brand conscious," with the result that unfamiliar brands of, say, processed foods may prove unprofitable lines for state and private trading enterprises; thirdly, the Ghana market for the principal "staple" food imports fluctuates not only with seasonal and longer term trends in disposable income but also with the supply and retail price of close local substitutes for rice, wheat flour, fish, etc. With the planned expansion in domestic food production, imports of these products will become "marginal" to an even greater extent, thereby requiring quick trading decisions of the kind unsuitable for inter-state trading. Lastly, and most important, public agencies responsible for bilateral trade negotiations and control of imports will presumably wish to obtain goods at the most favourable terms of trade; barter arrangements often disguise these terms so that much depends on the efficiency of public purchasing agencies and the reaction of private business and consumer interests.

III.17 To date import licences and exchange controls have been used to support bilateral trade agreements. Imports from neighbouring West African countries have also been favoured; not only in accordance with public policy but also because of the difficulty of controlling overland movements of people and goods. During the past decade, cocoa has been smuggled out of Ghana to take advantage of the higher producer prices available in neighbouring (franc zone) territories, the Ivory Coast and Togo; while many goods subject to higher indirect taxes in Ghana are "imported," e.g. cigarettes. There are thus certain limits to both fiscal and quantitative controls over external trade.

III.18 We have already referred to the sharp fall in imports of certain foodstuffs following the imposition of higher customs duties in 1961 and 1962. During the second half of 1961 fiscal measures alone had little immediate impact; although the effect was apparent during the first half of 1962 when quantitative restrictions were also in operation. In some cases licences were limited to less than half the "quota" based upon past "performance" so that the direct price effects attributable to higher duties were reinforced by further increases in internal trading margins. Average retail prices for many essential goods were subject to official ceilings with effect from 24th July 1961 although supply and demand for certain classes of imported goods were brought into balance at price levels in excess of these limits. Against this background goods imported under trade agreements or produced locally became more competitive with imports from traditional overseas sources.

D. The Terms of Trade

III.19 We now turn to the problem of fluctuations in the terms on which Ghana trades with the rest of the world. It will be recalled that in our discussion of changes in real income available in Ghana (in Chapter II, Section C), an attempt was made to measure the additions to, and deductions from, real product that represented "accidental" shifts in the terms of trade. Our calculations, summarised in Table S.1, indicated substantial gains from favourable movements in the ratio of export to import prices in 1954-55 and, again, in 1958; while in 1956 and in 1961 part of the increase in real product produced was "lost" as the result of adverse movements. At the height of the cocoa boom in 1954 the purchasing power of Ghana's exports in terms of imports appreciated by as much as one-third (32 per cent.) and since exports at that time constituted approximately one-third of G.D.P., the "gain"

represented 12 per cent. of real income available, or some £44 millions at constant (1960) prices. Conversely, the decline in the barter terms of trade in 1956 was equally as pronounced (30 per cent.) but as exports represented a smaller share of G.D.P. (about 25 per cent.) the loss of real income available was smaller at around 7 per cent. Indeed, our estimate of the negative terms of trade effect, shown in Table S.1 at some £8 millions, represents only 2 per cent. of G.D.P. at constant prices, although errors in the deflation of time series could account for some of the discrepancy. In 1958 there was another large shift in the terms of trade which "improved" by some 29 per cent., implying an addition to real income of almost 8 per cent. with exports constituting 27 per cent. of G.D.P. Deflation of time series provide a similar order of magnitude with some £23 millions or 6 per cent. of real income arising from the terms of trade effect. Lastly we may note the smaller impact on real income resulting from the deterioration in the terms of trade in 1961 of some 23 per cent. Structural changes in the domestic economy, and in particular the high level of domestic expenditure, had reduced exports to some 23 per cent. of G.D.P. so that the "loss" of real income was only about 5 per cent., a proportion in line with the figure of £17 millions or 4 per cent. of G.D.P. at constant prices shown in Table S.1.

III.20 We have dealt at some length with the terms of trade effects on real income since gains or losses of, say, 5 per cent. can amount to as much as £25 millions with a G.D.P. of around £500 millions (at 1960 prices) in 1962. It represents the fruits of a year's growth in real output or one-quarter of the fixed capital formation considered necessary to sustain this growth. More important perhaps for the overall stability of the economy and the public expenditure programme, it constitutes the difference between a comfortable surplus on the overall balance of payments (and the Government budget) and acute dependence on foreign aid.

III.21 Although the internal economy may be insulated from the full short-term impact of shifts in the barter terms of trade, over the whole decade under review changes in export prices have been an important factor in first stimulating and then retarding the rate of growth in real output and domestic expenditure. We have already noted the close association between favourable export prices and (large) surpluses on visible trade and the overall balance of payments. Moreover, since at least one-third of total Government revenue has in the past been derived directly from export duties or contributions from the Cocoa Marketing Board's accumulated surplus, the rate of public spending on both current and capital account has been closely tied to export prices. Indeed, the guarantee to cocoa producers of a fixed five-year price since 1959 has meant that the aggregate level of cocoa farmers' income has been left free to fluctuate with the size of the crop, while export tax receipts and marketing board surpluses have varied inversely with the volume of exports. The bumper cocoa crop of 1960-61 (420,000 tons) involved record net payments to producers of £48.4 millions although the "net" price received, 54 shillings per bag (£112 per ton) represented a considerable reduction on the 72 shillings (£134.2 per ton) which prevailed in 1958. The comfortable surplus on the balance of payments in 1958 and on central Government revenue in 1958-59 were associated with a cocoa crop only about half as large as that of 1960-61 when both the external account and the central budget were in deficit.

III.22 So far we have been mainly concerned with distinguishing that component of real income available which may be attributed to shifts in the (net) barter terms of trade, *i.e.*, the ratio of changes in export prices to changes in import prices. Application of a base-weighted *visible* terms of trade index to that component of Ghana output sold abroad provided approximately the same measure of the "gains" as the separate deflation of G.D.P. time-series shown in Table S.1.⁽²⁾ It will be noted that the *total* gain from trade takes into account not only *unit* prices for export and imports (as represented in a *barter* terms of

trade index) but also the volume and relative importance of exports in G.D.P. Thus an apparent changes in the purchasing power of a unit of exports is not, in itself, a reliable guide to the overall gain from trade.⁽³⁾ In particular an apparent deterioration in the net barter terms of trade may be consistent with an overall gain if the total volume of exports is increasing.⁽⁴⁾ The following Table III.2 clearly shows the divergence between the “net barter” and “income” terms of trade for Ghana over the past decade.

TABLE III.2
Indices of Ghana Terms of Trade
1948-54 (1948 = 100) and 1954-62 (1954 = 100)

	Imports		Exports		Terms of Trade	
	Price	Volume	Price	Volume	“Barter” (1)	“Income” (2)
1949	94	154	75	118	80	94
1950	101	152	112	123	111	137
1951	121	168	146	111	121	134
1952	127	167	141	108	111	120
1953	115	205	135	118	117	138
1954	109	208	190	108	174	188
1955	98	127	85	98	87	85
1956	101	123	68	111	67	74
1957	102	153	65	123	64	79
1958	101	118	90	102	89	91
1959	101	157	82	122	81	99
1960	107	171	70	144	65	94
1961	107	188	57	171	53	91
1962	103	161	52	189	50	95

Source: *Quarterly Digest of Statistics*; *Economic Survey*, 1962.

- (1) Barter terms of trade: ratio of export to import prices.
(2) Income terms of trade: barter terms of trade multiplied by export quantum index or export value index divided by import price index. See Note 3, paragraph III.22, section D.

III.23 During the early years, 1949 to 1953, the aggregate increase in “real” export income, measured in terms of imports, was severely limited by the inelasticity of supply of exports—a typical feature of primary production of both tree crops and minerals. However, in 1954 both the “income” and “barter” terms of trade reflected to a similar degree the gain from a fall in cocoa supply. In subsequent years the inverse correlation between supply and export prices was reflected in movements in the barter terms of trade. The gradual rise in import prices after 1955 simply reinforced the trend, with export price changes as the predominant influence. Increases in supply of exports have prevented aggregate real income from falling with export prices. In other words, much of the damage to the Ghana economy that might have followed the sharp deterioration in the barter terms of trade in 1956-57 and again from 1959 to the present time (1963) has been avoided by an expansion in the volume of exports.

III.24 Before leaving this review of Ghana’s terms of trade, two important points should be emphasised. First, although the *barter* terms of trade have deteriorated since 1954, and especially since 1958, taking the period as a whole the import purchasing power of a *unit* of exports was still greater in 1961 than in 1949 and the “real” cost of cocoa in consuming countries (if deflated by a general wholesale price index for primary commodities or industrial

raw materials) has remained well above the pre-war level. Secondly, the import purchasing power of *total* Ghana exports has shown a steady if somewhat erratic upward trend. Naturally, much depends upon the period under review and the selection of 1954 as a base year for the official indices obviously presents data for subsequent years in a poorer light. However, even the years 1955 to 1961 show, on balance, a considerable gain in the purchasing power of exports.

III.25 What of the period ahead to 1975? Present indications suggest that a cautious, but on the whole optimistic, view may be taken about shifts in the barter terms of trade. The new Seven Year Development Plan assumes that cocoa prices will not fall below £200 per ton (f.o.b.) and might be held somewhere near the post-war average of £240 per ton if an effective international cocoa agreement were concluded. The planners have prudently adopted the lower figure in making projections for balance of payments and aggregate real income. Our own appraisal of world cocoa prospects suggest that an f.o.b. price of around £180 per ton, slightly higher than the actual level of £171 per ton reached in 1961 and considerably better than the price of £159 of 1962, would be a more appropriate figure if the volume of cocoa exports is to expand at around 3 per cent. per annum or by 34 per cent. from 1960 to 1970 and by 57 per cent. to 1975. On the other hand, the market for a wider range of manufactured imports could become more competitive and Ghana should continue to *benefit* from the “poor” prices received by exporters of other primary products, e.g., temperate foodstuffs and textile fibres. Planned changes in the composition of Ghana imports suggest, however, that Ghana will be prepared to sacrifice some “favourable” import prices for staple, non-durable consumer goods in order to foster domestic substitutes.

E. Dependence on External Trade

III.26 The new *Development Plan* makes some approximate estimates of the likely development of imports over the period, 1964 to 1970. It is assumed that imports of non-durable consumer goods, mainly foodstuffs and textiles, will account for a smaller proportion of imports as the result of increased domestic production, while imports of “less essential” consumer durables will be restricted by quantitative controls and high indirect taxation to their present proportion. However, the process of substituting local products for imports of finished goods will require larger imports of raw materials, e.g., textile fibres, yarns or “grey” cloth, chemicals, mineral oils, etc., which will not be available locally so that, on balance, the scope for a large shift in the pattern of imports in favour of capital goods is expected to be severely limited, especially during the earlier years of the planning period. Table III.3 summarises the official statistics of imports analysed by end-use. The item non-

TABLE III.3
Analysis of Ghana Imports by End-use

Annual Averages Total Imports, c.i.f.	1949-53		1954-58		1959-62		1964-70 (Planned)	
	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.
Non-durable consumer goods	28	48	39	46	42	42	70	37
Durable consumer goods	5	9	8	10	8	8	13	7
Fuel and lubricants	3	6	5	6	4	4	14	7
Non-durable producer goods	8	13	11	13	15	15	31	17
Durable producer goods (materials and equipment)	15	24	22	25	31	31	61	32
Total imports	60	100	86	100	101	100	189	100
of which re-exports	2	3	1	1	2	2	...	...

Source: *Annual Trade Reports*; *Draft Development Plan* (for 1964-70).

durable producer goods includes materials used in domestic food-processing industries which have been shown under imports of consumer goods in Table III.4.

III.27 It is not expected that the proportion of visible imports required for capital formation will rise substantially above the 31 per cent. attained in recent years, 1959 to 1962. The main task facing Ghana will be to find sufficient foreign exchange to sustain this proportion of a total level of imports which is expected to rise by about 88 per cent. to an annual average level of £189 millions in 1964-70, compared with £101 millions in 1959 to 1962, when accumulated exchange reserves and new trade credits were used to finance a record volume of imports for both capital *and* consumption uses. The import-content of gross fixed capital formation may rise slightly, from 44 per cent. in 1959-61 to 46 per cent. in 1964-70, while fiscal and quantitative measures will aim to reduce the proportion of personal consumption devoted to visible imports from 20 per cent. to 17 per cent.

III.28 The following Table III.4 relates imports by end-use to expenditure on G.D.P. It will be observed that over the period 1950 to 1961 there was little change in the visible import content of either personal consumption or fixed capital formation. A sharp rise in personal consumption on imported foodstuffs in 1959-61 was balanced by a decline in the propensity to import textiles, drink and tobacco. The high import-content of fixed capital formation has been maintained by a growth in the relative importance of investment in machinery and transport equipment for which there are only limited domestic substitutes.

TABLE III.4
Ghana's Dependence on Imports
Average Annual Ratio of Imports to Components of G.D.P.

	1950-54		1955-58		1959-61		1964-70	
	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.
G.D.P. at current prices	268	100	358	100	468	100	660	100
Visible imports retained (c.i.f.)	63	24	89	25	127	27	189	29
Personal consumption	190	100	272	100	351	100	482	100
Imports of consumer goods (c.i.f.)	40	21	55	20	71	20	83	17
Gross fixed capital formation	35	100	55	100	92	100	133	100
Imports of capital goods (c.i.f.)	16	46	23	41	41	44	61	46

Source: *Quarterly Digest of Statistics; Draft Development Plan.*

III.29 Foreign exchange requirements of capital formation are, however, not limited to visible imports. Overseas payments to contractors and personnel employed on construction and installation are likely to represent an important element of investment in "productive" sectors of the economy. Much of the technical assistance rendered by trade-agreement countries takes this form and it is estimated that as much as 60 per cent. of the £68 millions to be spent on the Volta River Dam will require foreign exchange, including £6 millions for interest payments during the construction period. A further problem arises with the obligation to repay external debt, so that Ghana's capacity to import goods and services depends upon her exports and *net* receipts on capital account.

III.30 The Development Plan envisages little change in the pattern of visible exports during the next seven years. In the longer run it is hoped that greater diversification will be possible as secondary industry is developed; but, initially, the programme of industrialization of

exports will concentrate upon further processing of existing primary exports. Such a policy of maximising export proceeds clearly has many attractions for developing countries such as Ghana: the wide margin between "raw" and processed materials suggests that domestic employment and income can be increased by further "value added" before exportation: while physical transformation may reduce the degree of instability associated with international commodity markets. In the case of cocoa, it is proposed that conversion of 100,000 tons of beans into cocoa butter and other products will enhance export proceeds by about £100 per ton, adding another £10 million to aggregate cocoa earnings and affording an opportunity to hold stocks and negotiate direct sales with manufacturers in consuming countries. The seven-year Plan envisages an expansion in timber exports of 150 per cent., with the entire increase taking the form of a six-fold expansion in sawn-timber products. In the case of minerals, there are plans for a gold refinery, a ferro-manganese plant and, most important, an aluminium smelter at Tema which will provide the main initial market for the hydro-electricity generated at the new Volta River Dam and for an expansion in output of local bauxite.

III.31 Further processing of cocoa and minerals involves considerable investment in plant capacity. In the case of the aluminium smelter, a sum of £45 millions has been estimated for fixed assets, to be made available to the Volta Aluminium Company by U.S. Government and the aluminium companies concerned. Even if the complicated financial arrangements for the Volta River Project and aluminium smelter are ignored, part of the gains from higher export proceeds will be required for overseas payments of profits, interest and loan redemptions. Moreover, foreign customers may be reluctant to pay a high premium for primary materials processed in Ghana; they may have their own processing capacity to be protected by possible discrimination against processed products.⁽⁵⁾ Rather than spell out in detail possible gains and losses from further processing and diversification of exports, we have adopted the following approach to the assessment of Ghana's export prospects over the years to 1970 and 1975.

III.32 The Development Plan suggests that a feasible growth rate for exports over the period, 1964-70 is of the order of 7 per cent. per annum. On the assumption that cocoa prices will be maintained at an average level of £200 per ton (f.o.b.) and that the average volume can be increased to 450,000 tons, Ghana would obtain £90 millions per annum from cocoa bean exports, representing 57 per cent. of total export income, compared with £68 millions or 59 per cent. of total exports over the recent period, 1959-61. Although more attention will be devoted to the production of alternative agricultural exports, e.g., rubber, bananas, coconut products and coffee, a large contribution to export income is not envisaged from these sources. With existing exports of kola nuts and oil seeds, agricultural exports other than cocoa might provide some 5 per cent. of total exports or an average income of £8 millions per annum.

III.33 Exports of timber in sawn or further processed forms are expected to add substantially to export income and provide the basis of an important local manufacturing industry. The total average value of timber exports is expected to increase by about 40 per cent. from £15 million in 1959-61 to £21 million in 1964-70. Sales of minerals in primary export form should rise but since Ghana's full mineral potential is not known, the Development Plan estimates suggest that minerals will continue to account for a stable proportion of total exports—some 22 per cent. in 1964-70, compared with 23 per cent. in recent years. Table III.5 compares the level and composition of exports estimated for the planning period, 1964-70, with actual experience over the years 1959-61.

TABLE III.5

Pattern of Ghana's Exports : Average Annual Values

	Actual, 1959-61		Planned, 1964-70	
	£m.	Per Cent.	£m.	Per Cent.
Cocoa beans . . .	68.2	59.4	90.0	57.3
Timber	14.7	12.8	20.9	13.3
Gold	11.0	9.6	12.6	8.0
Diamonds	8.6	7.5	10.3	6.6
Manganese	6.4	5.6	10.1	6.4
Other domestic exports .	4.5	3.9	13.3	8.5
Re-exports	1.4	1.2		
Total exports	114.8	100.0	157.1	100.0

Source: *External Trade Reports; Draft Development Plan.*

III.34 Our appraisal of world prospects for cocoa over the next decade (see Appendix A) suggests that Ghana may be able to export an average annual volume of cocoa beans of 450,000 long tons during the years 1964 to 1970 at an average f.o.b. price of around £180 per ton, compared with an average of £213 per ton in 1959-61 and £159 in 1962. The average export proceeds of £81 millions would therefore fall short of the Development Plan estimate of £90 million, based upon a f.o.b. price of £200 per ton. Further domestic processing of 90,000 tons could make up the difference at a premium of £100 per ton. In 1959-61 exports of cocoa butter and paste averaged £1.2 million (included in other domestic exports in Table III.5 above).

III.35 The timber industry offers perhaps the widest scope for further domestic processing. In 1959-61 exports of logs had an average value of £9.1 millions, compared with £5.6 millions for sawn timber and £300,000 for veneers, plywood and other manufactured woods. World demand for West African tropical hardwoods has developed rapidly since the Second World War and Ghana is well placed to exploit the Western European and North American markets. Taste is an important determinant of demand in high-income countries; while quality, efficiency of forest practice and export procedure are probably more important than price differentials of 5 to 10 per cent.⁽⁶⁾ In 1962 Ghana's log exports were adversely affected by faulty organization of marketing and a return to private trading has been made (1963). Large-scale logging and saw-milling enterprises are well developed in Ghana⁽⁷⁾ and the prospects for exporting sawn and processed timber have been further improved by the recent abolition of E.E.C.'s common external tariff which previously discriminated against Ghana timber, particularly her sawn products. If the official target of a six-fold expansion in sawn timber exports is achieved by 1970, total timber exports over the years 1964-70 would increase in value from £14.7 million in 1959-61 to over £40 millions in 1970. The Plan's estimated average value of £21 millions for 1964-70, comprising £9 millions from logs and £12 millions from sawn products, would therefore appear to be well within reach. Although exports have been estimated at constant prices, in fact, Ghana may also benefit from rising unit prices, especially for timber species in limited supply.

III.36 We are not in a position to re-appraise prospects for Ghana's mineral exports. The official estimates allow for some increase in output but do not take account of additional income arising from further processing or "windfall" increases in world prices. Obviously a rise in the U.S. dollar price of gold would benefit Ghana.

III.37 Rather than include an estimate for aluminium production, expected to exceed 200,000 tons by 1970, in Ghana's domestic exports, it is perhaps more appropriate to include only the

additional sales of bauxite or alumina since the Tema smelter operated by V.A.L.C.O. is in most respects an "enclave" akin to an export market although located on Ghana soil. Sales of hydro-electricity in the earlier years are expected to cover interest and capital repayments abroad for the Volta River Dam. After about 1972 Ghana's balance of payments and visible trade should reflect the growth in income from electricity sales to V.A.L.C.O., estimated at about £2.5 million per annum and well in excess of the overseas interest element on the Volta loans.

III.38 Projection of visible imports and exports at feasible growth rates of 8.5 per cent. and 7 per cent., respectively, indicates a cumulative deficit of some £220 millions or £31 millions per annum in 1964-70, as against an average deficit of £14 millions in 1959-61. The deficit on invisible trade is not expected to exceed the level of £14 millions in 1962, but a further £9 millions per annum may be required for repayment of existing foreign loans, making a total sum of £54 millions per annum to be financed by a net inflow of funds on capital account.

F. Finance for Development

III.39 We have seen that the Development Plan projections for Ghana's balance of payments on current account indicate a possible cumulative deficit of £320 millions for the period, 1964-70, to which may be added a further £60 millions to repay existing foreign loans. Since it is hoped to maintain existing foreign exchange reserves at around the present level of £72 millions, the *gross* sum of £380 million will have to be found by donations, public borrowing and private foreign investment. Obviously unforeseen improvements in the terms of trade would reduce Ghana's dependence on capital imports to finance a given level of imports and loan repayments; however, the structure of Ghana's exports would appear to rule out any large improvement in export prices to 1970, so that the main problem facing Ghana's external relations will be the difficulty of attracting the necessary capital inflow. It will be recalled that the Plan estimated imports of capital goods over the period 1964-70 at some £425 millions or £61 millions per annum, indicating that £105 millions or almost one-quarter of the imported capital goods would be financed from domestic savings, which in addition might be expected to cover the internal element of fixed capital formation estimated at an average of £60 millions per annum or a total for seven years of £415 millions (at 1960 prices). Thus £520 millions or 62 per cent. of total gross fixed capital formation during the Plan period, calculated at £840 millions, would be financed from domestic savings.⁽⁸⁾

III.40 If we assume for the moment that the Ghana Government will be committed to a development programme that requires an annual rate of fixed investment of £120 millions (*i.e.*, £840 millions between 1964 and 1970), it may not be too difficult to find overseas finance for some 38 per cent., *i.e.*, around £46 millions per annum. Indeed, Ghana is already assured of the necessary foreign finance to complete the Volta River Dam, the Tema Smelter and an extensive range of industrial projects for state or joint state-foreign enterprise undertakings. In February 1962 the Volta River Agreement was signed, making available a total of £35 millions in foreign loans, *i.e.*, approximately one-half of the cost of the dam project. £13.2 millions is to be loaned by U.S. Government agencies, £5 millions by the U.K. and £16.8 millions by the World Bank. Including initial working capital, a further £60 millions is estimated for the V.A.L.C.O. smelter, to be financed by the consortium of aluminium companies from their own resources and by borrowing from the U.S. Government. These two projects represent the largest specific injections of foreign capital into Ghana and account for the only important official loans raised so far from World Bank or American sources. Moreover, since Ghana had little need for foreign loans or grants during the colonial period, it was never an important recipient of C.D. & W. grants or public loans raised in the United Kingdom. From 1959, however, the Ghana Government began to utilise trade credits, mainly from Britain, Western Germany and Russia, and by the end of 1962 a total of £48

million had been spent, with a further £90 millions still available. Ghana therefore can implement a development programme with sufficient foreign reserves to cover perhaps £160 millions or half the net overseas deficit of £320 million during the period, 1964 to 1970. In addition, it has some £72 millions of public and banking reserves held abroad, which cover loan repayment obligations estimated at £60 millions. Existing loan repayment obligations will place a heavy burden on available foreign exchange resources during the earlier years of the Plan, 1964 to 1967 especially, so that Ghana will welcome either longer-term credits or greater equity participation in investment projects. A new Capital Investments Act, 1963, seeks to encourage direct foreign investment in approved ventures, particularly in manufacturing industries that either raise exports or provide import substitutes. Given the appropriate environment, both existing expatriate enterprises and new entrants should be able to satisfy the Plan's "target" of a minimum of £120 millions from foreign private investors over the years 1964 to 1970.

III.41 Between 1970 and 1975 the whole outlook is more uncertain but provided the Plan's emphasis on investment in "productive" sectors of the economy is maintained the 1970's might find Ghana's foreign exchange position less stringent. The economy already possesses much of the "infrastructure" of a modern state—ports, roads, telecommunications, official buildings, etc. The Volta River Project is expected to be completed by the end of 1965; while water supplies, necessary for rural development, have been given a high priority in the early years of the New Plan.

CHAPTER III REFERENCES

Note	Para.	Section	
1	10	B	<i>Draft Development Plan</i> . Chapter 12, p.1. Our own calculations imply a somewhat higher growth rate for real output from 1954 to 1961 of about 7 per cent. On the other hand, the growth in real income available was rather slower by our reckoning—around 4 per cent.—which indicates an even higher marginal propensity to import.
2	22	D	In Table S.1 real domestic product produced has been calculated by deflating consumption and investment components of domestic expenditure by appropriate price indices then adding real exports and subtracting real imports, <i>i.e.</i> exports and imports deflated by their respective price indices. This aggregate represents the quantum of goods and services produced by domestic activities and excludes the effects of movements in the terms of trade. Real income available to Ghana, including the terms of trade effect, has been estimated by deflating the net balance of external trade in goods and non-factor services by the import price index and deflating domestic expenditure (as for real product produced). This approach, which expresses both "temporary" net foreign investment and net foreign borrowing in terms of imports at constant prices, is more meaningful for a country like Ghana than alternative methods of deflating the external balance, <i>e.g.</i> by an implicit G.D.P. price index, by a capital goods index or by an export price index (for net export surpluses). See R. C. GEARY, <i>Introduction to Studies in Social and Financial Accounting</i> . Income and Wealth Series, IX. Bowes & Bowes, London, 1961. G. STUVEL, <i>The Use of National Accounts in Economic Analysis</i> . Income and Wealth Series, IV. London, 1955.
3	22	D	See, for a discussion of income and barter terms of trade, G. S. DORRANCE, <i>The Income Terms of Trade</i> . Review of Economic Studies, XVI, p. 50, 1949-50.
4	22	D	See J. VINER, <i>Studies in the Theory of International Trade</i> , Chapter IX, pp. 563-564.
5	31	E	For example, the E.E.C. common external tariff on bauxite, alumina and unwrought aluminium have been fixed at nil, 11 per cent. and 9 per cent., respectively; the rate for cocoa beans is 5.4 per cent., compared with 22 per cent. for cocoa butter.
6	35	E	F.A.O. <i>Europe's Timber Trends and Prospects, 1950-75</i> . UNASYLVA 17 (3), 1963.
7	35	E	See <i>Statistical and Economic Review</i> (The United Africa Company, London), No. 10. Statistics of U.A.C.'s timber operations in West Africa are published regularly in this Review.
8	39	F	The Draft Development Plan shows a figure of £375 millions for foreign capital imports. Presumably this is gross of foreign debt repayments (of £60 millions), some of which might be deferred thereby increasing net resources available from abroad.

CHAPTER IV

INCOME PROJECTIONS

The preceding three chapters have been mainly concerned with past trends in the Ghana economy. We have, in particular, emphasised the importance of movements in population and changes in the *average* standard of living which have been related closely to the expansion of world market for Ghana's export production, notably cocoa.

IV.2 In Chapter I future movements in population were calculated on the basis of various mortality and immigration assumptions. Although in the longer run the rate of growth in population will not be independent of changes in living standards, we have assumed that over the period of our projections to 1975 population growth will not be affected by shorter term changes in real *per capita* consumption. The assumption of population growth to 1970 at an annual compound rate of 2.6 per cent. would not be inconsistent with a (small) increase in average living standards, including improvement of medical facilities financed "collectively" through current Government expenditure. Nevertheless it may be less appropriate to relate population projections based upon low mortality and excessively high net immigration assumptions to very low rates of improvement in *per capita* real incomes and consumption over a period extending to 1975. Projection of rates of change in *per capita* income and consumption have been calculated after adjustment for population increases so that unless we have further evidence (not so far available) to the contrary, it would seem more consistent with underlying relationships to "marry" slower population growth to lower income projections and rapid increases in population to higher rates of improvement in living standards.

A. "Planned" Growth Rates, 1963-70

IV.3 The Development Plan, 1963-70, envisages an overall growth rate for G.D.P. of 5.5 per cent. per annum, to be achieved by fixed investment at 3.5 times this rate, *i.e.*, $5.5 \times 3.5 = 19.25$. The overall marginal capital-output ratio, 3.5:1, is derived from analysis of changes in gross fixed investment and gross domestic product over the period 1954 to 1962 when G.D.P. rose in real terms at a rate of about 5 per cent. per annum. The Plan does not provide details of investment requirements for the private sector and, if anything, probably over-estimates the capital-output ratio for peasant agriculture. The savings ratio of 19.25 per cent. of G.D.P. may be divided into two components: 9.10 per cent. of G.D.P. to maintain real income overhead at the pre-plan level of about £70 (in 1960 prices), given a population growth rate of 2.6 per cent.; and 10.15 per cent. to increase *per capita* income at a net rate of 2.9 per cent. *Per capita* income in 1970 at constant (1960) prices would therefore increase by some 20 per cent. to £87. However, in order to realize savings from domestic sources to finance some 60 per cent. of gross investment, it is hoped that consumption will be confined to 87.4 per cent. of G.D.P., by restricting the growth of personal consumption to 3.5 per cent. and Government's current expenditure to 4.5 per cent. per annum. Given a population growth of 2.6 per cent., *per capita* personal consumption would increase by only 0.9 per cent. and by less than 0.4 per cent. if population increased at a higher rate of 3.1 per cent.

IV.4 Thus in terms of improvements in real personal consumption *per capita* the planned growth may not be too ambitious. In India, for example, it is planned to raise aggregate

private consumption by as much as 4 per cent. per annum for a population that is rising at around 2.2 per cent., implying an improvement of 1.8 per cent. per annum in *per capita* terms; on the other hand, the new Nigerian National Plan, 1962-68, envisages more conservative growth rates, *i.e.*, 4 per cent. for G.D.P., 2.8 per cent. for aggregate private consumption and, therefore, perhaps only 0.5 per cent. for *per capita* consumption if population is rising at, say, 2.4 per cent.

IV.5 Since the long-term objective of the Ghana Government is the creation of a modern, socialist economy, a transformation period of at least twenty years is envisaged, with the first seven-year plan concerned primarily with the following immediate objectives: raising G.D.P. by expanding domestic production of food, other staple consumer goods and building materials; correcting the imbalance between the contribution of agriculture and other activities to G.D.P. and employment; and improving the weak balance of payments situation by import substitution and further processing of primary exports.

IV.6 The planners have found it useful to adopt a simple growth model which relates changes in income to rates of fixed investment. This capital-output approach is now frequently employed by planners in developing countries and is useful in setting out growth requirements in terms of domestic savings. The actual capital-output ratio, estimated from statistical relationships for past periods, may not be valid for future projections purposes however; and in Ghana much will depend upon the supply of other factors of production, for example, skilled labour and entrepreneurial ability.

IV.7 Nevertheless, the fact that the planned growth rate of 5.5 per cent. is a target rather than a forecast may influence opinion both in Ghana and elsewhere in a direction favourable to its achievement. When we recall that a "long-term" growth rate in real output of nearly 5 per cent. per annum was achieved over the past decade, 1950-61, without comprehensive planning and during a period of considerable political change and uncertainty, the slight acceleration to 5.5 per cent. over the next decade may not be over-ambitious. Moreover, much of the expensive "overhead" social capital or infrastructural which "inflated" the capital-output ratio from the mid-1950s should contribute towards income generation. With the completion of the Volta River Project and the Tema complex of secondary industries by, say, 1967, favourable conditions should exist for a further improvement in growth rates, including average living standards for the urban labour force. A higher rate of overall growth of around 7 per cent. per annum has been "forecast" for the second phase of Ghana's development from 1970, which means doubling real output in ten years. Given an increase in the labour force of around 3 per cent. per annum such an achievement, which implies an average growth in productivity per worker of 4 per cent., may be asking a great deal of an economy still based largely upon the cutlass and hoe of the peasant farmer.

IV.8 We shall return to the problem of setting possible limits to growth rates for the Ghana economy beyond the confines of the immediate planning period, 1964 to 1970, in Section B, below. The feasibility of growth rates to 1970 suggested in the Plan may be judged in aggregate terms by reference to the performance of the economy in the recent past and under the assumptions made by the planners about the future availability of domestic resources, foreign aid and export prospects. Moreover, while the rates (summarised in Table IV.1) may appear "feasible" to the planners and "reasonable" to other outside economic observers, they have still to be realised. At this stage (1964) little information on individual projects to be included in the Plan is available for detailed appraisal and some of the sector or project targets may be difficult to attain. For example, planned increases in production along new lines, such as in cereal cultivation and new manufacturing ventures, may prove more

difficult for Ghana than further expansion of well-tried plantation crops. For this reason projection of aggregates in the broadest terms may be made with greater confidence than construction of trend lines for particular sectors.

TABLE IV.1
Projection of Expenditure on G.D.P., 1960-70
at constant (1960) market prices

	£ millions			Annual Growth Rates (Per Cent.)		
	1960	1970	1964-70	Actual 1955-61	Plan 1964-70	Decade 1960-70
Personal consumption . . .	340	530	3,325	4.8	3.5	4.5
Public consumption . . .	48	116	715	8.5	4.5	9.0
Total consumption . . .	388	646	4,040	5.2	3.6	5.2
Domestic savings . . .	82	124	580	4.5	(9.0)	4.3
Gross domestic product .	470	770	4,620	5.0	5.5	5.1

IV.9 Apart from reference to past trends, an alternative way of setting limits to the growth of aggregate output during the period, 1964-70, is provided by probable changes in export receipts. The Plan's "feasible" growth rate of 7 per cent. for the period, 1964-70, would mean that visible exports would increase by some 60 per cent. from £115 millions, the average for the period 1959-62, to some £183 millions in 1970. At first sight a 7 per cent. growth in exports may not appear consistent with an overall increase of 5.5 per cent., in G.D.P., although the main emphasis of the Plan itself will tend to reduce the relative importance of exports as a component of total output. In volume terms an expansion of 7 per cent. per annum is well within Ghana's capacity—the *volume* of exports increased at an even faster rate of 9 per cent. between 1954 and 1961 and for the whole decade achieved an average growth rate of around 6 per cent. per annum. The problem is, however, essentially one of selling a larger volume of cocoa on a world market which is unlikely to grow as fast. Our appraisal of export prospects suggests that, given an average export price for cocoa of around £180 per ton from 1962, real income available from exports should rise by about 4.9 per cent. per annum over the decade as a whole, compared with an overall growth in G.D.P. of just over 5 per cent. On this basis visible exports would represent a fairly constant proportion of 24 per cent. of G.D.P.

B. *Per Capita* Income and Consumption, 1960-75

IV.10 For the purposes of this study we have constructed projection lines for aggregate output and personal consumption which conform with the growth rates suggested in the new Development Plan. Reference to Table IV.1 indicates that the "changes in gear" envisaged for the planning period, 1964-70, would be largely absorbed in average growth rates for the decade 1960-70 as a whole. These in turn show little change on the rates estimated for the previous period, 1955-61. Beyond the confines of the immediate planning period, 1964-70, we may only guess subsequent movements in the broadest aggregates. Alternative projections may be made under various assumptions. A crude extrapolation of the trend line, 1960-70, would show total output increasing less rapidly than in 1964-70 but with consumption absorbing a larger share. A more optimistic view of the 1970's would suggest, however, that Ghana might be able to maintain a higher level of output from a lower rate of investment,

i.e., the completion of investment projects planned for 1964-70 would reduce the capital-output ratio required for a given growth rate. On this basis consumption could increase at approximately the same rate as total output, which is probably a more realistic assumption given the growth of population and the need for incentives to raise productivity.

IV.11 Appraisal of prospects for cocoa and other visible exports suggested that by 1975 export earnings could be between 75 and 100 per cent. higher than in 1960 (or the average for 1959-61). On the basis of the slower growth rate, equivalent to 3.8 per cent. per annum, exports of £200 millions in 1975 would be consistent with a G.D.P. of around £1,000 millions if they accounted for 20 per cent. The higher growth rate of 4.7 per cent. would bring exports to £225 millions in 1975, *i.e.*, 22.5 per cent. of G.D.P. at £1,000, compared with a proportion of 24.2 per cent. in 1959-61 and 23.7 per cent. "planned" for 1964-70.

IV.12 Table IV.2 describes the trend and composition of Ghana's output, 1960-75, under various projection assumptions. Estimates for 1967 represent the annual averages "forecast" under the plan, 1964-70. The deficit on external trade in goods and non-factor services of £37 millions is the *net* gap between domestic output and domestic expenditure. Additional foreign exchange would be required to service external debt, including loan repayments, so that the gross foreign aid required could average £54 millions in 1964-70. Of the projected levels for 1975, alternative "A" is an extrapolation of 1960-70 trends shown in Table IV.1 above; "B" carries forward "planned" rates for 1964-70; while "C" represents the projection used in this study. For this alternative, we have assumed that personal consumption will grow over the whole period, 1960-75, at a rate which follows more closely movements in aggregate output and that the "divergence" envisaged for 1964-70 will not be maintained. Similarly, we consider that Government expenditure on current goods and services (including defence) will not be confined to an annual increase of 4.5 per cent., as envisaged for 1964-70, but will expand over the period, 1960-75, at the 1955-61 rate of 8.5 per cent. If Ghana is to develop into a modern state, a more rapid expansion in general Government services may be necessary, while the enlargement of the "stock" of "social assets" will also induce a higher level of current expenditure on maintenance. The border-line between productive investment in fixed assets and "intangible" development expenditure on, say, technical training and agricultural extension services is often difficult to draw and we would expect Ghana to devote a larger share of output to "collective consumption" by the 1970's. The increasing claims of replacement will also tend to maintain the proportion required for gross fixed capital formation. Excluding increases in stocks of £11 million (included in the official estimate of gross capital formation for 1960 and in the figures shown in Table IV.2) the growth rate for fixed investment for the period, 1960-75, would be 4.4 per cent. per annum.

IV.13 Under the "conservative" assumptions implicit in alternative "C," visible exports would account for 20 per cent. of G.D.P. in 1975, while cocoa exports would decline more sharply from 14 per cent. in 1960 to 10 per cent. Since no allowance is made for changes in the terms of trade, real output produced and income available are assumed to be the same. Lastly, we may refer to the "Local Food" and "Imported Food," both valued at constant (1960) market prices, which have been included in the table in order to assess the relative importance of these components under various assumptions. "Local Food" estimates of £178 millions for 1967 and £207 millions for 1970 represent a 64 per cent. increase on 1960, which is one of the targets for physical output recommended in the draft plans for agricultural development in 1964-70. However, since it is proposed to shift the emphasis from root crops to cereals, livestock and fisheries, the increase in "net product" would be of the order of 170 per cent. In order to assess the consistency of our income projections,

TABLE IV.2

Projection of Ghana Output and Expenditure, 1960-75, at constant (1960) prices

	1960		1967		1970		Alternatives : 1975			Change 1960-75 ("C")			
	£m.	%	£m.	%	£m.	%	"A"	"B"	"C"	Per Ann. %	Cum. %		
1. G.D.P.	470	100	660	100	770	100	985	100	1,006	1,000	5.1	112.8	
2. Personal consumption	340	72	475	72	530	69	660	67	630	63	657	4.5	93.5
3. Public consumption	48	10	102	15	116	15	179	18	145	14	162	8.5	237.0
4. Capital formation	107	23	120	18	140	18	179	18	234	23	181	3.5	69.1
5. Import surplus (net)	-25	-5	-37	-6	-16	-2	-33	-3	-3	...	...	...	...
6. Visible exports f.o.b.	114	24	149	23	183	24	200	20	225	22	200	3.8	75.4
7. Cocoa exports f.o.b.	67	14	82	12	87	11	97	10	97	10	97	2.5	44.8
8. Local food r.v.	126	27	(178)	(27)	(207)	(27)	(340)	(35)	(340)	(34)	...	...	...
9. Imported food r.v.	33	7	...	...	...	...	...	...	...	...	...	...	...

N.B.—Items 2 through 5 are *components* of G.D.P.; items 8 and 9 at retail prices are part of 2. Personal consumption; 6 and 7 are important *determinants* of change in the level of G.D.P.

we have assumed that, by and large, the "physical" target represents a reasonable growth rate of just over 5 per cent. per annum for the decade 1960-70, so that expenditure on local food would represent a constant proportion of G.D.P. but a slightly expanding proportion of total personal consumption. The more ambitious targets involving a change in the pattern of local food production are assumed to be capable of attainment by 1975, in which case expenditure on imported food would decline rapidly unless (i) the proportion of total consumption devoted to food rose with income or (ii) total G.D.P. increased at a faster rate. We shall be concerned with these aspects of our study in later chapters; at this stage it would appear that, given the successful achievement of the agricultural development plans, a growth rate of 5.1 per cent. for aggregate output in the early 1970's may well be a lower, rather than an upper limit.

IV.14 To project future levels of G.D.P. and personal consumption in *per capita* terms, the aggregate estimates summarised in Table IV.2 are combined with the population projections discussed in Chapter I. It will be observed from Table IV.3 that the application of population projections under assumptions of low mortality and net immigration permits a very small rise in personal consumption per head. Indeed, there is no change between 1965-70, a tendency which may be inconsistent with planned improvements in food farming and industrial productivity. For the purposes of this study the slower population increase of 2.91 per cent. per annum (Column I (c) of Table I.1) has been adopted for 1960-75. On this basis it would appear that *per capita* income would be some 39 per cent. higher in 15 years, while the level of personal consumption would increase by 36 per cent. Our task in the following chapters will be to assess the probable extent of changes in demand for various agricultural products, given these growth rates in personal expenditure (disposable income) and in the total number of consumers.

TABLE IV.3

Projected Growth in *Per Capita* Income and Consumption, 1960-75

	1960	1965	1967	1970	1975	Increase, 1960-75	
						Per Ann. Per Cent.	Cum. Per Cent.
G.D.P. at 1960 prices (£m.)	470	590	660	770	1,000	5.1	112.8
Personal consumption (£m.)	340	447	475	530	657	4.5	93.2
Population, mid-year, ('000)—							
I (c) High mortality rate	6,770	7,720	8,150	8,890	10,366	2.9	53.1
II (c) Low mortality rate	6,770	7,880	8,360	9,210	10,950	3.3	61.8
<i>Per capita</i> G.D.P. (£)—							
With I (c) population	69.4	76.4	81.0	86.6	96.5	2.2	39.0
With II (c) population	69.4	74.9	78.9	83.6	91.3	1.8	31.6
<i>Per capita</i> personal consumption, (£)—							
With I (c) population	50.2	57.9	58.3	59.6	63.4	1.6	26.3
With II (c) population	50.2	56.7	56.8	57.5	60.0	1.2	19.5
Index numbers: 1960 = 100—							
Population I (c)	100.0	114.0	120.4	131.3	153.1	...	...
Per capita personal consumption I (c)	100.0	115.3	116.1	118.7	126.3	...	...

N.B.—Population projections: I (c) High mortality with net immigration; II (c) Low mortality with net immigration (see Table I.1).

CHAPTER V

ANALYSIS OF CONSUMERS' DEMAND

In this Chapter we examine the micro-economic aspects of our study. Previous chapters have dealt with population and income, the major economic factors that are considered to be responsible for movements in aggregate demand; we now turn to a more detailed investigation of patterns of consumer expenditure and to the measurement of statistical relationships between demand and household or *per capita* levels of living. Our approach follows closely the methodology used in other recent projection studies of demand for food and agricultural products⁽¹⁾ and draws heavily upon the experience of our Edinburgh colleagues who were responsible for the companion study of Nigeria.⁽²⁾

A. Scope of Analysis

V.2 It will be convenient to begin with some definition of the scope of the analysis on which this Chapter is based. Our terms of reference provide for the study of the main determinants of demand for agricultural products imported into Ghana. We have defined "agricultural products" to be the equivalent of food, drink and tobacco, since much of the data relating to consumers' expenditure cover broad groups of commodities, among which "food," "drink" and "tobacco" consistently appear. Included in this definition, therefore, are purchases of meals and drink taken away from home and consumption of a few non-agricultural items such as salt and, in some cases, fuel wood and charcoal for cooking. Our definition is sufficiently wide to cover both domestic output and those imports of animal and vegetable products that are classified under "food, beverages and tobacco." On the other hand, it excludes many commodities that may be said to be agricultural in origin, for example, vegetable fibres and textiles, clothing, footwear, soap and other products of wood, rubber, etc.

V.3 This practice may be defended on a number of grounds. Much of the data on consumers' expenditure on "non-food" items are either not available in sufficient detail or cannot be relied upon because they often comprise very irregular and occasional purchases. Moreover, these goods contain a substantial element of processing, so that only a relatively small proportion of final consumers' expenditure represents the output of agriculture. Lastly, by confining our analysis to final consumer demand for "food, drink and tobacco" in Ghana, we shall not be concerned in this Chapter with other final demands such as exports or intermediate demands for local or imported "raw materials" of agricultural origin.

B. Methods and Assumptions

V.4 We now turn to the methodology and assumptions used in projecting consumer demand, with special reference to foodstuffs. The first point of interest will be to establish relationships between consumption and various determinants such as changes in population, income, relative prices, tastes, etc. A projection model may then be postulated which takes account of the significant parameters and explanatory variables. To some extent the discussion in earlier chapters has anticipated this subject. We have already examined some aspects of the structure of the Ghana economy and made projections for population and income, the main economic factors considered to be responsible for longer-term movements in consumer demand at constant prices. However, before we can proceed with projections of aggregate demand which combine population and income effects, it is necessary to remind ourselves

of those aspects of economic theory and applied statistics that support the analysis of consumers' demand.

V.5 Let us begin with the economic factors which affect the level and composition of consumers' expenditure, income and price, respectively. The main feature of demand for food is its tendency to increase at a smaller proportionate rate than income. The concept of income elasticity expresses this relationship and provides a valuable tool for prediction of future consumption trends. Income-consumption relationships, or elasticity coefficients, may be derived from either time-series or cross-section studies. The former approach would seem the more appropriate for projection studies since it involves an analysis of consumer behaviour over time; whereas cross-section analysis of family budget data is static and consists solely of comparisons of different categories of consumers at a given time. In practice, however, there are a number of difficulties which restrict its application to a limited range of products or countries for which time-series data are available. For Ghana, even the basic figures of aggregate incomes, population and consumption by broad commodity groups are not available as reliable time series. A more fundamental problem, however, is the difficulty of isolating the income effect from changes in consumption attributable to other factors. Unless these can be identified and evaluated and the original data adjusted, the observed income-consumption relationships may provide a misleading guide to future consumption trends. Nevertheless we have adopted the time-series approach to derive relationships between movements in cash income of cocoa farmers and wage and salary earners, on the one hand, and imports of selected foodstuffs of special interest to this study (see Section F, below).

V.6 Although the theory of demand has long emphasised the importance of price-consumption relationships, demand projections are usually made under the rigid assumption of constant prices. Neither changes in relative prices nor changes in price elasticities are considered, since it is rarely possible to make realistic assumptions about long-term price movements or to have available sufficient data on the many complex relations between prices and consumption. Fortunately it is safe to assume that the effects of price changes on the distribution of consumers' expenditure are not important in respect of broad categories such as food, clothing, etc. Moreover, as demand for all food is normally price inelastic, price changes may be expected to influence the composition of food expenditure rather than the total volume purchased.

V.7 Most projection studies allow for the influence of price at the final stage of reconciliation between demand and supply. In the case of Ghana, public policy will aim to expand domestic food production by various measures of "protection," particularly for products which are close substitutes for imported foods. We shall therefore examine possible price effects when we come to review the Ghana market for selected food imports in Chapter VII.

V.8 In addition to economic factors affecting the level and composition of demand, there are a number of sociological influences which economists sometimes describe under the omnibus terms, consumers' "preferences" or "tastes." In Ghana, as in other developing countries, the most important of these factors are probably connected with occupation, urbanisation and ethnic or religious characteristics. For instance, an expansion in the non-agricultural labour force employed in factories and offices may be expected to modify traditional eating habits, with greater emphasis on processed foods, bottled drinks and convenient "snacks." Since occupation is closely tied to geographical distribution of the population and urban-rural differences in patterns of consumption have long been a notable feature of family budget inquiries, many demand studies proceed on the basis of

separate projections for urban and rural consumers respectively.⁽³⁾ Where the unit of analysis is the household, it is also necessary to specify household size as a determining variable. Similarly, it may be necessary to take account of differential growth rates as between ethnic or religious groups. These and other factors which may be expected to change steadily over time may be introduced in the form of a time trend. For example, the pressure of advertising and the demonstration effect of other consumers may modify consumption habits among those who have enjoyed no (substantial) change in income, status, etc. It follows, therefore, that any estimate of future demand for particular foods should take account not only of income but also of other, non-economic, factors.

C. Surveys of Ghana Expenditures—Concepts and Definitions

V.9 Any analysis of consumers' expenditure in Ghana must begin with the cross-section data available from family budget surveys undertaken in various parts of Ghana over the period, 1953-62 (see Table S.14). These micro-economic studies provide the only reliable data for measuring relationships between food expenditure and total consumer expenditure. We have already referred to the difficulty of aggregating partial studies to obtain macro-economic relationships but, in the absence of independent censuses of distribution, any investigation of consumption patterns must begin at the household level.

V.10 Most of these family budget surveys were conducted by the Government Statistician in order to determine appropriate weights for retail price indices. Thus the data do not always lend themselves easily to comparative studies of food expenditure patterns. However, since the aim of the urban surveys, at least, was the compilation of wage-earners' cost-of-living indices, consumption of foodstuffs is analysed in considerable detail. In the case of the two major rural surveys the objectives were less specific, with more regard paid to sources of income and changes in cash expenditure over a period of several months. Unfortunately, few details are available on consumption of food produced within the household, with the result that any relationships between food consumption and income must be limited to cash transactions. Subsistence output is, however, valued (at local market prices) in the National Household Survey of 1961-62.⁽⁴⁾

V.11 Our choice of operational variables was severely restricted by the scope of the survey data available. Since most of the surveys gave size of households but not age or sex details, we could not analyse expenditure in terms of weighted consumer units or adult equivalents (however defined). As the living standards that a given *household* income will provide may depend upon the age-sex distribution as well as size of family, analysis in *per capita* terms is obviously a less reliable measure, especially in respect of consumption of drink and tobacco or "luxury" foods which tend to be consumed mainly by adult, male members of lower-income families. Total expenditure (including, where possible, consumption of own-produced food) rather than income has been used to classify families and persons for cross-section and regression analyses. The usual conceptual problems of defining income were aggravated in Ghana by evidence of under-reporting of income (in cash and "in kind") and difficulties in distinguishing between income and total receipts, which included withdrawals from savings, loans, gifts and repayments. A usual characteristic of lower-income budget studies, not by any means confined to Ghana, was the tendency for reported expenditure to exceed reported income. This feature in itself raised a number of interesting questions about the *net* direction of remittances between families at different levels of "income" or between rural and urban locations. Data on *actual* reported expenditure over the duration of the survey were used to classify households for cross-section analysis and to reveal expenditure patterns. We rejected alternative tabulations of "normal" expenditure, which included estimates of average annual household expenditure on clothing and durable goods,

on the grounds that this measure might be even less accurate. Our own experience with a small sample of middle-income householders in Accra indicated a general tendency to under-report (consciously or unconsciously) certain forms of expenditure, particularly on drink and tobacco or meals consumed away from home, and the likelihood of larger "errors and omissions" was obviously greater if householders were requested to recall purchases made up to twelve months previously.⁽⁵⁾

V.12 None of the surveys may be representative of expenditure patterns throughout a full year. Most covered a thirty-day enumeration period which therefore reflected any seasonal bias in income or availability of consumer goods. A detailed analysis of an official study of movements of staple foods into Accra during a twelve-month period from 1st October 1957 to 30th September 1958 revealed considerable seasonal variation in food supplies, while another study of maize price movements indicated a pronounced seasonal pattern, with peak prices in the second quarter of the year.⁽⁶⁾ Although consumer demand for all food may be price-inelastic, considerable substitution obviously affects consumption of particular commodities. Budget surveys undertaken in March, as many were, may reveal a proportion of food expenditure devoted to imported items higher than in, say, September, when local food is more plentiful and cheaper. The "income effect" of high food prices will similarly reduce the proportion of expenditure devoted to non-food items at any given "income" level. However, while relative prices are important in determining the average propensity to consume, analysis of consumers at different levels of income (total expenditure) at a point in time reveals the *marginal* propensity to consume and the elasticity of demand with respect to income.

V.13 We have not sought to use Ghana family budget data for purposes other than derivation of income-consumption relationships. While the survey periods may give an accurate picture of actual consumption patterns for a specific sample of households during a short space of time, they cannot be used to show aggregate patterns of consumption for, say, a whole year, except in the broadest terms. Furthermore, we have not attempted to draw detailed comparisons between the various surveys.

V.14 Most of the published data measured purchases in money terms (*pq*) rather than in quantities (*q*). This method has a number of practical advantages. Ghana householders are more likely to be able to report the *money cost* of purchases without necessarily knowing the quantity by weight or volume. Since food is purchased mainly from small (open-air) traders who retail in small lots—a cigarette-tin of rice, a tuber of cassava, a piece of yam, a finger of plantain or a penny-worth of sugar lumps—accurate measurement of quantities is rarely possible at either the retail or eating stage. Secondly, changes in quality can be reflected in money terms, thereby explaining why one household spends more on the same *quantity* of a commodity when, presumably, the same market opportunities are available for all the families in a small sample. Thirdly, specific items can be compared directly with total expenditure and with each other.

V.15 We have not been able to derive price effects from Ghana family budget data. While "implicit" unit prices for a wide range of consumer goods may be calculated from published material available for the earlier urban and rural studies, variations in patterns of consumption between different survey locations (and dates) cannot be attributed merely to price differences even for households with similar incomes and social characteristics. There are differences in tastes and in the range of choice open to consumers of even staple foodstuffs. However, relationships between relative prices and relative consumption of close substitutes may be assessed.⁽⁷⁾

D. Analysis of Ghana Expenditure Data

- V.16 Comparison between different Ghana family surveys reveals a consistently high proportion of total expenditure devoted to food. This is hardly surprising, given the low level of income available to most Ghanaians and the importance of subsistence food farming in rural areas. However, cross-section analysis showed that Engel's Law operated among Ghanaian households, *i.e.*, the proportion of income (total expenditure) devoted to food declined as higher levels of *family* income were attained. Nevertheless, this proportion was remarkably constant over a wide range of total expenditure levels within lower income samples; and for families in the lowest expenditure "brackets" it might appear that Engel's Law was invalid, *i.e.*, the proportion of total expenditure devoted to food did not fall (see Tables S.15 (a) through (f)). Part of the explanation for this may be found in under-reporting of expenditure on non-food items or, what has the same effect, under-statement of income, especially from sources additional to that of the basic income of the head of the family. In Ghana, as in Nigeria, many women are traders whose earnings are not likely to be disclosed to other members of the family or to official survey enumerators. Indeed, the whole concept of the household or family differs markedly from the "elementary" structure found in developed countries, with the result that any micro-economic investigations of consumer behaviour is faced with special problems.
- V.17 A notable characteristic of Ghana households was the close association between income and size of "family." Opportunities for raising total household income depend largely upon the number of potential contributors to total receipts rather than the capacity of a single "bread-winner." However, the number of mouths to be fed will also increase, so that differences in *per capita* living standards are likely to be much less than differences in household income before taking account of size and composition.
- V.18 Although our analysis of expenditure on a *per capita* basis is obviously a rough and ready adjustment for household size and composition, it brings out more clearly the income effects. Analysis of data for wage-earning households in Accra (1953) and Kumasi (1955) shows that total expenditure on food rises substantially with *per capita* income. A linear regression fitted to the data for these centres gives an elasticity co-efficient of 0.85 (Accra) and 0.64 (Kumasi). Co-efficients of this order contrast sharply with those found for high-income countries of around 0.4 to 0.5.
- V.19 Moreover, whereas budget studies in western countries usually reveal a decline in relative expenditure on bulky, starchy staples and an increase in expenditure on more expensive products such as animal protein foods, in Ghana there was only a slight tendency to follow this pattern as income increased. Indeed, among lower-income households in the urban areas of Ghana *per capita* expenditure elasticities were much the same for starchy staples as for protein foods. Considerable discussion of this feature has taken place among economists and nutritionists in Ghana. It has been suggested that since food has little relation to social status, and traditional obligations of hospitality require most households to feed dependents, there is little scope for changing over to more "expensive" diets as income rises.⁽⁸⁾ However, closer examination of urban budget data indicates that while apparent *per capita* intake of calories from starchy staples may increase in the lowest income classes, it declines as higher (wage-earning) levels are attained. As one writer puts it: ". . . as income rose, the dry manioc (cassava) products are increasingly supplanted in the diet by the bulkier staples (chiefly plantains and yams), thereby creating on a weight basis the impression of greater consumption. Exit then, the "cassava law" and all its discomfiting corollaries: they rest on an illusion."⁽⁹⁾ It would appear therefore that consumers spend more to obtain the same calorie intake in more palatable form, replacing gari (dry cassava) by fresh cassava tubers, or by plantains and yams within the same food group.

V.20 We have endeavoured to distinguish wherever possible consumption on imported food. The official budget surveys made a distinction between local and imported food but their definition placed rice and bread in the former category. Cheaper cuts of meat and all fish (other than tinned) were also shown as local, although in fact most of the carcase meat consumed in the urban areas and forest zone of Ghana is derived, like much of the fresh, smoked and dried fish, from abroad. Where possible in our analysis, we have allocated rice and bread to the imported category since these items account for a large part of total food imports. However, we have retained carcase meat and fish, other than tinned, under the local heading. As a general rule for factory-processed foods, where the local product is a close substitute for the imported item, we have treated the product as an import-type item. Thus all bottled beer, tobacco products, canned foods, as well as white rice and wheaten bread, are regarded as "importable" items. (A full definition of food items included in various Ghana budget surveys is given in Appendix B.)

V.21 However defined, demand for imported food is more income-elastic than that for local food. This is not surprising since domestic production of food is limited in both a quantitative and qualitative sense. First, domestic resources devoted to food production have, in the past at least, been insufficient to provide for the expansion in demand for basic staples. In consequence higher local food prices have stimulated consumption of close importable substitutes such as rice and wheat flour. Secondly, as *per capita* incomes have risen, a wide range of "exotic" goods, for which there are no close local substitutes, have been purchased, for example, sugar, milk products, as well as more processed products formerly restricted to a small upper-income group—canned and bottled food, drinks and tobacco.⁽¹⁰⁾

E. Results of Cross-Section Analysis

V.22 Table V.1 summarises the *per capita* expenditure elasticities derived from the surveys covering various sectors of the Ghana population. Further results are shown in Table S.16. Regressions obtained by the "least squares" method provided linear relationships between income (total expenditure) and consumption of "food, drink and tobacco." The coverage of these components of expenditure is listed in Appendix B to this Report.

V.23 We began our analysis with data available from the official sample surveys of urban wage-earning families and rural households. These data were restricted to cash expenditure by families in the lower-income range. In addition there was our own middle income survey which was analysed on a household and consumption-unit basis. We were, however, presented with the problem of aggregating these partial relationships to obtain demand functions for the population as a whole. In the absence of adequate data on total income (however defined) and its distribution between different income groups (including those sectors of the population covered by budget inquiries), we decided to proceed on the very simplified assumption that the relationships derived from a small sub-sample taken from the National Household Survey, 1961-62, were representative of demand functions for the whole population (see Appendix C). Although this sub-sample was limited to one week's expenditure by 165 households drawn at random from 990 processed returns, when analysed by region, urban and rural strata it provided average household and *per capita* expenditures that compared closely with those shown in the larger 990-household sample which could not be analysed by income (expenditure) groups (see Table S.17). A further check was provided by deriving demand functions from the larger 990-household sample, using the variation in *per capita* total expenditure between regions as a substitute for a cross-section by income (expenditure) levels. Table S.18 compares these findings with the results of the cross-section of 165 households analysed by *per capita* expenditure.

TABLE V.1

Summary of *Per Capita* Expenditure Elasticities (*e*) and Correlation Coefficients (R^2) from Cross-section Studies

Surveys: Location and Date	Local Food		Imported Food		Total Food*		Drink and Tobacco	
	<i>e</i>	R^2	<i>e</i>	R^2	<i>e</i>	R^2	<i>e</i>	R^2
Urban—								
Accra (1953)	0.81	0.96	0.98	0.90	0.85	0.96	1.67	0.77
Kumasi (1955)	0.52	0.25	1.41	0.93	0.64	0.26	2.25	0.89
Sekondi-Takoradi (1955)	0.45	0.62	1.52	0.75	0.63	0.75	2.96	0.73
National H.S. (i)	0.59	0.92	1.11	0.92	0.78	0.98	1.46	0.99
(1961-62) (ii)	0.58	0.93	1.17	0.92	0.76	0.98	1.56	0.99
Rural—								
Oda-Swedru (1955-56)	0.50	0.96	1.31	0.93	0.59	0.96	2.39	0.89
Ashanti (1956-57)	0.31	0.79	1.07	0.92	0.39	0.85	1.51	0.76
National H.S. (i)	0.68	0.96	1.11	0.93	0.78	0.98	0.78	0.96
(1961-62) (ii)	0.72	0.97	1.32	0.93	0.78	0.98	0.92	0.95
National—								
N.H.S. (1961-62) (ii)	0.64	0.95	1.30	0.96	0.77	0.97	1.24	0.98

* Total food includes meals taken away from home.

(i) Regression equation excludes "consumption of own produce."

(ii) Total income and consumption, *including* "consumption of own produce."

V.24 Reference to Table V.1 indicates that the *per capita* elasticities derived from the "National" sub-sample compare closely with those obtained from earlier cross-section studies for similar income groups or urban-rural strata. Although these "National" demand functions must be regarded as provisional, subject to revision in the light of further analysis of the National Household Survey data, they represent the first estimates which cover a wide cross-section of incomes extending over the whole of Ghana. Moreover, by contrast with the earlier urban and rural budget inquiries, this survey took fuller account of income from, and consumption of, own produce. The preliminary results of the 1961-62 survey show that some 31 per cent. of total expenditure among rural households took the form of consumption of own produce, although in urban areas the proportion was only 7 per cent. In terms of food consumption, the inclusion or exclusion of own consumption does not materially affect the position in the urban areas: 52 per cent. of cash expenditure was devoted to food, compared with 55 per cent. when own consumption was included (in "income" and consumption). In Accra the proportions were 50 per cent. and 51 per cent., respectively. On the other hand, for the rural areas the corresponding percentages were 48 and 64.⁽¹¹⁾ This difference would therefore be large enough to alter considerably both the composition of food consumption and, possibly, the income-consumption relationships. In order to assess the importance of this factor among both urban and rural consumers, we computed elasticities which excluded "own consumption" from both sides of the equation. We found that in respect of total food the results differed little from the total "cash-plus-kind" expenditure elasticities.⁽¹²⁾

F. Time-Series Analysis of Demand for Imported Foods

V.25 We now turn to an examination of factors influencing demand for imported foods. Some of the limitations of the cross-section approach have already been observed. We have seen, for instance, that income-consumption relationships for specific food imports could not be derived from data currently available in Ghana budget surveys and that the rather

narrow definition of "imported food" adopted in the official inquiries excluded important items of special interest to this study. Another limitation of the cross-section approach was the neglect of demand factors other than income.

V.26 On the other hand there were available for analysis by the alternative time-series approach detailed statistics of Ghana imports, valued at points of entry (c.i.f.) and, for many commodities, expressed also in volume terms. We were, therefore, in a position to relate either quantities or values for selected items to different determinants of aggregate demand. By contrast with the cross-section approach which associated variations in actual consumers expenditure with variations in household or *per capita* income, time-series of imports referred to apparent consumption for the economy as a whole. However, since the analysis dealt almost wholly with food imports destined for final consumer demand, it was assumed that intermediate demands for industrial use or inventory accumulation were either negligible or constant as a proportion of total imports. In addition the unit of analysis was "disaggregated" to the level of *per capita* demand by reference to the population estimates derived under High Mortality assumptions, shown in Table S.21. Since the selected import items under review comprised in the main "homogeneous" products which could be expressed in quantity terms, we avoided the problem of "marking up" c.i.f. values to obtain expenditure variables. However, for "total imported food" both an import quantum and a deflated retail expenditure measure were adopted.

V.27 The next step was to identify and measure changes in the determining variables. The absence of reliable data on personal income or aggregate personal consumption meant that any association using macro-economic data might be fortuitous and misleading; we therefore selected a component of personal income (personal consumption) which was likely to be both relevant and reliable for time-series analysis of food imports. There were available for Ghana accurate records of net cash payments made by the Cocoa Marketing Board to cocoa farmers extending over more than a decade; another, somewhat less reliable, indicator of movements in cash income consisted of estimates of wages and salaries paid to recorded employees, which was believed to be consistent in coverage for the shorter period from 1954 through 1961.⁽¹³⁾ Appraisal of family budget and other relevant data indicated that consumers in receipt of cash incomes in these two forms accounted for a major share of the Ghana market for imported foods and were, in addition, representative of other cash earning households, notably small traders and food farmers whose incomes were closely tied to changes in the two major cash-earning sectors. Together, net cocoa payments and gross wages in 1961 accounted for approximately 32 per cent. of personal consumption, or 38 per cent. excluding subsistence.

V.28 As the analysis was to be conducted in real terms, the "cash income" variable was deflated by the only cost-of-living index available, *i.e.*, the Accra Retail Price Index. The aggregate real cash income series for the eight-year period, 1954-61, was then adjusted to a *per capita* basis using the same population estimates that had been applied to the import-quantity variable.

V.29 We then proceeded to plot time-series of *per capita* consumption of selected imported foods against *per capita* real cash income and price movements for the period, 1954-61. Although retail price data would have been most appropriate, these were limited in coverage and reliability. In most cases official retail (and wholesale) price data for specific foods and for broader categories such as "local staples," "meat and fish," etc. were based upon simple averages ruling in main urban markets. Implicit import prices were therefore used, on the assumption that changes in landed cost (c.i.f. prices plus any element attributable to import

duty) would be reflected at the final retail stage. The Accra cost-of-living index was then applied to obtain “real” prices. (A summary of the tabulations involved will be found in Table S.25.)

V.30 The time-series were then inspected to determine whether changes in the level of *per capita* imports were associated with changes in the level of other specified variables. Of the commodities investigated, namely, rice, wheat flour, sugar, evaporated milk, cattle, canned meat, salted/dried and canned fish, movements in the level of imports appeared to relate more closely to changes in *per capita* cash income than to any other factor, except in the case of cattle, canned meat and canned fish.

V.31 The price of rice showed a downward trend (relative to both the cost of living and the price of wheat flour) and this may have been a factor in accounting for the proportionately large increase in *per capita* imports of rice. There was no overall trend in the price of wheat flour relative to the cost of living, although towards the end of the period the price rose relative to that of rice; however, this did not appear to have a marked effect on wheat flour imports. The price of sugar (relative to the cost of living) showed no overall trend and imports appeared to be closely related to the level of cash income. The “real” price of unsweetened (evaporated) milk showed little variation; but the sharp fall in the price of sweetened (condensed) milk in 1961-62 was probably responsible for part of the decline in unsweetened milk imports. Imports of both cattle and canned meat were both at the same *per capita* level in 1962 as in 1954 and imports of cattle appeared to be quite unresponsive to changes in either price or cash income; imports of canned meat were also unrelated to other variables, with the possible exception of “real” price. *Per capita* imports of canned fish were affected by non-specified factors (see Chapter VII, Section F) since the falling trend took place against a decline in price (relative to both the cost of living and the price of imported salted and dried fish). Imports of salted and dried fish did not reflect the relatively large price variations that took place over the period.

V.32 Intensive statistical analysis of consumption-price relationships was not practicable in view of the limitations on data, particularly the absence of reliable retail price series and cross-section income elasticities. Our appraisal of graphs indicated that changes in income were the most important influence on import demand. However, over the period under review consumers’ tastes were changing as incomes increased and a very close correlation between these factors may be assumed. We have confined our statistical analysis to the variable, income, which will therefore also be an indicator of changes in tastes.

V.33 Table V.2 summarises the results of our analysis, obtained by applying the various demand models for selected food imports and using time-series data for the years 1954 through 1961. The equations fitted to the consumption and income series were:

- (a) $y = a + b.x$
- (b) $y = a + b. \log x$
- (c) $\log y = a + b. \log x$
- (d) $dy = a.dt + b.dx$

Where y = *per capita* import quantities :

x = *per capita* real cash income (cocoa and wage payments) ;
 dy = change in *per capita* import quantities each year ;
 dx = change in *per capita* real cash income each year.

“ a ” and “ b ” are the parameters, estimated by the least squares method.

Equations (a) through (c) assume a direct relationship between *per capita* consumption of imports and *per capita* income. Equation (d) introduces the effect of time on the level of imports, where "a" is the parameter relating changes in the level of imports to time. As expected, this first difference equation proved to be a poor fit since it introduced a second explanatory variable. Direct comparison between equation (d) and the other three is not therefore necessarily an indication of the "best" model. Of equations (a), (b) and (c), in almost every case the linear function fitted the data with the highest correlation coefficient, although the semi-log and double-log models were usually almost as good.

TABLE V.2
Summary of Time-series Analysis for some
Principal Food Imports (i)

Models	R ²	a	b	e (1961)	R ²	a	b	e (1961)
	Wheat Flour				Rice			
(a)	0.71	-6.97	1.86	1.42	0.82	-29.38	2.90	2.95
(b)	0.73	-43.46	23.70	1.19	0.82	-86.52	37.09	2.48
(c)	0.71	-1.03	1.51	1.51	0.76	-15.64	6.85	6.85
(d)	0.26	0.30	1.35	1.40	0.24	1.03	1.54	0.35
	Refined Sugar				Unsweetened Milk			
(a)	0.89	-15.89	2.38	1.81	0.83	-2.17	0.32	1.71
(b)	0.89	-62.54	30.33	1.52	0.82	-8.43	4.08	1.43
(c)	0.86	-2.83	2.15	2.15	0.81	-4.83	2.15	2.15
(d)	0.51	1.11	0.79	0.62	0.13	0.18	0.08	0.15
	Total Food Imports (ii)				Total Food Imports (iii)			
(a)	0.91	-2.49	0.42	1.64	0.96	-2.73	0.55	1.46
(b)	0.91	-10.82	5.41	1.38	0.96	-13.48	7.00	1.22
(c)	0.89	-3.79	1.90	1.90	0.96	-2.74	1.65	1.65
(d)	0.54	0.04	0.40	0.93	0.74	0.11	0.44	0.57

- (i) For further details for these and other categories, see Table S.23.
(ii) Ghana total c.i.f. imports of food (S.I.T.C. Section O) deflated by the food component of the import price index (1954=100). See *Statistical Year Book*, 1961;
(iii) Retail value of imported food, including processing margins, deflated by the imported food component of the Accra Index of Retail Prices (June, 1954=100). See Table B.1 for coverage and definition of imported food.

V.34 We proceeded to estimate future levels of *per capita* demand on the basis of the parameters derived from the equations (a), (b) and (c) giving the best fit and form (d). To illustrate the relationship between changes in consumption and income which might be applicable to Ghana at the present time, we have also computed the elasticity coefficient for 1961. This relationship will, of course, reflect changes in tastes as well as in income.

V.35 Projected levels of *per capita* demand for imports have been estimated under the assumption that a linear relationship between *per capita* cash income and *per capita* personal consumption applicable to the period, 1954-61, will be maintained. It was necessary to make some assumption about the future behaviour of this determining variable since our parameters are related to it and not directly to projections of *per capita* personal consumption. We have adopted this approach, rather than any alternatives, for example, the assumption that *per capita* cash income will change over the period, 1960-75, at the same rate as total personal

consumption, on the grounds that cash income from wage employment, if not from cocoa farming, will continue to grow at a faster rate than total personal disposable income as measured by personal consumption (see Table S.22).

CHAPTER V
REFERENCES

- | Note | Para. | Section | |
|------|-------|---------|--|
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| 2 | 1 | ... | <i>Nigeria: Determinants of Projected Level of Demand, Supply and Imports of Farm Products in 1965 and 1975</i> . ERS-Foreign-32. U.S. Department of Agriculture. August, 1962. Chapter III. The Analysis of Consumers Expenditure. |
| 3 | 8 | B | Cf. <i>Long Term Projections of Demand for and Supply of Selected Agricultural Commodities, 1960-61 to 1975-76</i> . National Council of Applied Economic Research. New Delhi, April 1962; <i>The Philippines: Long-term Projection of Supply of and Demand for Selected Agricultural Products</i> . ERS-Foreign-34. U.S. Department of Agriculture. |
| 4 | 10 | C | GOLDING, P. T. F. <i>An Enquiry into Household Expenditure and Consumption and Sale of Household Produce in Ghana</i> . Economic Bulletin (Accra), vol. VI, No. 4, 1962. |
| 5 | 11 | C | <i>Survey of Food Expenditure by Middle-Income Households in Accra, 1962</i> . Ghana Study Paper No. 1. Economic Research Unit, University of Edinburgh. December, 1962.
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| 6 | 12 | C | POLEMAN, THOMAS T. <i>The Food Economies of Urban Middle Africa: The Case of Ghana</i> . Food Research Institute Studies (Stanford University), vol. II, No. 2, May, 1961, pp. 164-172 and <i>Supplement</i> based on unpublished data on census of produce movements undertaken by the Government Statistician, Accra.
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| 8 | 19 | D | HILL, POLLY. <i>Some Puzzling Spending Habits in Ghana</i> . Economic Bulletin (Accra), June, Nov., Dec., 1957. |
| 9 | 19 | D | POLEMAN, op. cit. p. 161. |
| 10 | 21 | D | JONES, WILLIAM O. and MERAT, CHRISTIAN. <i>Consumption of Exotic Consumer Goods as an Indicator of Economic Achievement in Ten Countries of Tropical Africa</i> . Food Research Institute Studies (Stanford University), vol. III, No. 1, Feb. 1962. This study illustrates, <i>inter alia</i> , the post-war expansion in Ghana's imports of "exotic" foods—sugar, wheat flour, evaporated milk, tinned fish and meat and her leading position in terms of "per capita availability" of these products among tropical African countries. |
| 11 | 24 | E | GOLDING, op. cit. pp. 25-26. Tables 6 and 7. |
| 12 | 24 | E | LAWSON, ROWENA M. <i>Engel's Law and its Application to Ghana</i> . Economic Bulletin (Accra), vol. VI, No. 4, 1962, p. 41. Mrs Lawson suggests that if food produced for home consumption is excluded, an upward bias is given to the income elasticity of demand for food. However, the results of our analysis of the "National" subsample do not support this view; demand functions computed on the basis of cash expenditure alone may therefore have considerable relevance for projection purposes (cf. Kaneda and Johnston op. cit. pp. 262-268) and will not necessarily distort elasticity co-efficients computed for expenditure on food. |
| 13 | 27 | F | Basic statistics of employment, earning and wage rates in respect of December of each year for recorded private employers and public authorities are published in the annual <i>Labour Statistics</i> , produced by the Central Bureau of Statistics. Generally speaking, the labour returns are limited to <i>employees</i> working for an agreed cash wage or salary <i>outside</i> cocoa and food farms, the African diamond industry and domestic service. Information is not collected in respect of self-employed persons and members of the armed forces. Total disbursements on wages and salaries in December have been "raised" to an annual basis by simple multiplication by 12, except for 1955 and 1956 for which special adjustments were made to take account of the strike periods which affected the gold mining industry. |

CHAPTER VI

PROJECTED DEMAND AND SUPPLY IN 1965, 1970 and 1975

We now turn to the task of estimating within broad limits how the demand for and supply of agricultural products may develop in Ghana by 1965, 1970 and 1975. Section A of this Chapter is concerned with the projections of aggregate consumers' expenditure on all food, drink and tobacco under the assumptions that have been made for likely changes in population (see Chapter I) and movements in *per capita* disposable income (Chapter IV), using various demand models which express the relationship between *per capita* income and *per capita* demand. Some of the economic implication of these models, discussed briefly in the previous Chapter V, are also considered within the framework of the theory of demand. In Section B the discussion is extended to the problem of estimating demand for imported foods, using demand models fitted to time-series data. We then turn to a separate consideration of domestic food production in Ghana, beginning this Section C with a reminder of the all-too-limited information available about supply conditions in a "peasant" economy. After considering some Development Plan "targets" an attempt is made in the final Section D to assess the extent of Ghana's continued dependence on imported foods.

A. Projected Demand for Food, Drink and Tobacco

- VI.2 Population growth will be the predominant factor influencing total demand for foodstuffs in Ghana during the period, 1960-75. Since little change is expected in the age-sex structure of the population, total demand for food should increase at the same rate as total population. For the period to 1975 this growth rate is forecast at between 2.9 and 3.3 per cent. per annum, depending upon the mortality assumptions adopted. In addition to the effect of population growth, changes in *per capita* real income will also raise *per capita* demand for food. However, since improvements in average real personal expenditure have been projected to 1975 at an annual rate of 1.6 per cent., the "income effect" will play only a secondary role in determining total demand for food, irrespective of the value of the elasticity coefficient or the type of demand function chosen. Even if *per capita* demand for food rose at the same rate as *per capita* personal expenditure between 1960 and 1970 (under the assumption of a constant elasticity of unity), the "income effect" would account for only one-third of the total average annual increase of 4.5 per cent. in aggregate demand, compared with two-thirds represented by population growth.
- VI.3 In this Section we shall be concerned with projections of consumer expenditure on all food, drink and tobacco, under the assumptions that have been made in the preceding chapters for likely changes in *per capita* levels of personal expenditure and population growth to 1975. In Chapter V we explained the reasons for relying primarily on cross-section data obtained from the preliminary analysis of the recent National Household Survey, 1961-62. Table S.19 shows the correlation and regression coefficients, estimated by the least squares method, using (i) a linear function, (ii) a semi-log adjustment and (iii) a double-log adjustment.
- VI.4 The third type of function, which implies a constant elasticity coefficient over the whole range of "income," gave the best fit when the dependent variable represented all food expenditure on the categories, local food and proteins. When compared with elasticities estimated in the straight-line model, the double-log coefficients for all food and local food

were high, although comparable magnitudes have been calculated from data obtained in earlier urban budget studies in Ghana.⁽¹⁾ Nevertheless, when *per capita* levels of demand for all food are projected to 1975 under the assumption of moderate increases in "income," there was in fact little difference in the results given in the various models (see Table S.20). However, in the case of local food, starches and proteins the double-log parameters and projections may not provide a consistent interpretation of consumer behaviour in Ghana. Demand is clearly very closely correlated with *per capita* income (at least for the wide income range covered in the National Household sub-sample); but it is not easy to reconcile an elasticity of only 0.75 estimated in the double-log model for proteins, with 0.97 for starches, 0.86 for all food and 0.77 for local food, here defined to include the same meat and fish component and other items, largely starches, unless there is more to the so-called "cassava law" than we and others are prepared to accept.⁽²⁾ In any event, projections to 1975 which show a growth rate for *per capita* expenditure on starches which is higher than that for proteins and for all food are probably misleading.

VI.5 In low-income countries such as Ghana it may be expected that a semi-log adjustment would be appropriate for those categories of food which are necessities. This implies that both the elasticity coefficient and the marginal propensity to consume decline when total expenditure increases. However, since this model did not fit the data as well as the other equations, and did not provide significantly different projected levels of demand under our "income" assumptions, we have not placed any special emphasis upon it.

VI.6 In the simple arithmetic function the regression coefficient "*b*" represents a constant marginal propensity to consume, while the elasticity coefficient at the mean given by $\frac{bx}{y}$ varies with levels of total expenditure, *x*. For moderate changes in this "income" variable, such as those assumed in our projection to 1975, there is little difference as between the three models, since all curves may be assimilated to a straight-line relationship. Nevertheless, we are inclined to be more explicit about the assumption of a constant marginal propensity to consume. In the first place, any projections of demand based upon parameters estimated "about the mean" require the purely methodological assumption that improvements in "income" affect the whole income range in proportion to the present population and that any changes in population are similarly distributed. In forecasting improvements in average levels of living we have adhered closely to the Development Plan proposals which involve such a policy. Moreover, since the expansion of domestic food production will mean higher incomes for farmers in the poorer regions, such as Northern Ghana where there are still serious problems of seasonal food shortages and under-nutrition, a "straight-line" relationship between increases in disposable income and food consumption appears to be a useful guide-line.

VI.7 Table VI.1 presents estimates of future levels of aggregate demand at constant (1960) prices. Since there is little difference in the accuracy with which the arithmetic and double-log functions fit the data, we have taken the former, which alone of all types of functions has the (theoretical) advantage of satisfying the additivity criterion.⁽³⁾ In the case of all food, the official estimate of total consumers' expenditure in 1960 has been taken as a base of 100 and future levels estimated by applying the aggregate demand index shown in Table S.20 (Row A (i)). The projection is in terms of expenditure at the retail stage. It was not possible from the preliminary data available in the National Household Survey to calculate elasticities in terms of calories or at the farm level. While *per capita* demand in terms of calories in 1975 may show only a slight rise on current levels because of substitution by "quality" foods, including "importables," the predominant population effect will require a considerable increase in basic starchy staples.

TABLE VI.1

Projected Level of Aggregate Demand for all Food, Drink and Tobacco
(Summary of Table S.20)

Expenditure	Category	1960	1965	1970	1975
All food—	(1)				
£m.		159.0	202.7	238.8	292.7
Index		100.0	127.5	150.2	184.1
Local food—	(2)				
£m.		139.0	174.0	204.5	248.7
Index		100.0	125.2	147.1	178.9
Local food—	(3)				
£m.		126.2	158.0	178.1	225.8
Index		100.0	125.2	147.1	178.9
Imported food—	(4)				
£m.		32.7	44.7	60.7	66.9
Index		100.0	136.7	185.6	204.6
Drink—	(5)				
£m.		8.5	11.6	13.9	17.5
Index		100.0	136.7	163.2	205.3
Tobacco—	(6)				
£m.		9.5	12.7	15.2	19.0
Index		100.0	134.1	159.6	199.5

- (1), (2) Defined according to official estimate for 1960 of consumers' expenditure on all food and local food, including subsistence (see *Economic Survey*, 1962, Table 6, p. 26).
- (3) Project's estimate of expenditure on food actually produced in Ghana, calculated for 1960 by subtracting our estimate of actual imports at retail value from official estimate for all food (see Table B.2).
- (4) Project's estimate by simple subtraction of (3) from (1). Growth rates are implicit.
- (5), (6) Project's estimates for 1960 based upon local production and import statistics. Sum of (5) and (6) is the same as the official estimate for drink and tobacco; coverage excludes consumption of traditional drink, etc.

VI.8 As explained in Chapter V and in Appendix B, the item, local food, shown in Table VI.1 follows the National Household Survey definition and, as such, may be taken to cover actual local production, "overland" imports (which are often difficult to quantify—or control) and rice, for which there are plans for domestic self-sufficiency during the present decade. An approximate measure of the projected level of demand for food *actually produced in Ghana* was also estimated under the assumption that the expenditure elasticity derived from the National Household Survey would be broadly applicable to the commodities included under local food for 1960 in Table B.2. By simple subtraction of this category from the estimates for all food, orders of magnitude for expenditure on imported food were derived. The projected level for 1975 shows an increase of 105 per cent. over 1960, compared with that of 145 per cent. obtained from the "time-series" projections of demand for all imported food at the retail stage (shown in Table S.24).

VI.9 In the case of drink and tobacco, the assumption of a constant marginal propensity to consume also provided the most appropriate interpretation of the relationship between changes in "income" and "consumption." Neither of the alternative models fitted the data very closely and both implied relatively slow rates of growth in *per capita* demand. Although drink (alcoholic beverages and soft-drinks) and tobacco may be defined as

“importable” commodities, they could not be included in the “time-series” analysis, since local substitutes have now largely replaced imported products. Put in the simplest terms, aggregate consumers’ expenditure on “factory-made” beer and soft-drinks and on cigarettes may be expected to double between 1960 and 1975, given the income and population growth assumed.

B. Projected Demand for Imported Foods

VI.10 Projected levels of demand for imported foods have been estimated from time-series data relating apparent *per capita* quantities consumed to movements in *per capita* cash income derived from (net) payments to cocoa farmers and recorded wages and salaries. As explained in Chapter V and in Appendix B, the budget survey data available for Ghana were largely restricted to consumers *expenditure* and defined imported food in a restrictive sense. On the other hand, there was readily available a long history of “firm” and comprehensive import statistics which formed the basis for the evaluation of demand functions in quantity terms. However, since estimates of recorded wage-bill payments could not be carried back to the period preceding 1954, our projections are based upon demand models fitted to time-series covering the years 1954 through 1961.

VI.11 Before the parameters in the various equations could be used for projections, it was necessary to specify future movements in the “income” variable. In the case of the “cross-section” projections reviewed in Section A of this Chapter, we had forecasts of levels of *per capita* personal expenditure, derived in the main from the Draft Development Plan, 1964-70 (see Table IV.3). However, for imported foods we have specified a direct relationship with a particular component of this personal disposable “income,” *i.e.*, cash income available to cocoa farmers and (mainly urban) employees.

VI.12 A variety of assumptions could be made about future movements in cash income and its relationship to total consumer demand as expressed by personal expenditure, including or excluding subsistence. We could, for example, project *per capita* cash income to 1975 at the same average annual compound rate of 1.6 per cent. as *per capita* total personal expenditure. Alternatively, specific assumptions about future levels of various components of cash income and total personal disposable income might have been attempted by closer scrutiny of Development Plan targets and comparative studies of development experiences in other countries. Instead, we estimated future levels of *per capita* cash income by fitting a simple arithmetic function to the time-series of cash income and personal expenditure for the period, 1954-1961. This relationship implies that *per capita* cash income will grow at a rate of 1.4 per cent. for every 1 per cent. rise in total personal expenditure (disposable income) between 1960 and 1975.

VI.13 Tables S.21 and S.22 summarise the relevant series used to estimate *per capita* cash income to 1975. The linear relationship is not used to forecast future levels of cocoa income or wage-bill receipts; it is simply one method of projecting *per capita* cash income, given the statistical association between two series over the years 1954 to 1961. Indeed, we expect cocoa farmers’ incomes to grow very slowly over the present decade; while the relative importance of wage receipts should rise with the number of non-farm employees. Both components of cash income are expressed on a *per capita* basis (by reference to the whole population of Ghana, using high mortality assumptions) and in 1954 prices. *Per capita* personal expenditure is assumed to grow at 1.6 per cent. per annum between 1960 and 1975, compared with 3.5 per cent. estimated for 1954-61, which means, given the parameters of this model, that *per capita* cash income will rise by 2.3 per cent. per annum between 1960 and 1975, compared with 5 per cent. for 1954-61.

VI.14 These estimates of future levels of *per capita* cash income have been substituted in the various regression equations to derive projected levels of *per capita* demand for imported foods. Table S.23 summarises the parameters obtained by experimentation with all four models; while Table S.24 shows the projected levels of *per capita* and aggregate demand for those imported items which revealed a high correlation between the variables, using a variety of models which best fitted the data. As will be observed by reference to Chart I, for the four principal imported commodities the projected levels of demand to 1975 are very close, given the same "income" assumptions for all three equations.

TABLE VI.2
Projected Demand for Imported Foods, 1965, 1970 and 1975
(Summary of Table S.24)

Imported Food Category/Commodity	Demand Model	Per Capita Consumption				Aggregate Consumption			
		1960	1965	1970	1975	1960	1965	1970	1975
		Lb.				Million lbs.			
By quantity—									
Rice	(b)	10.2	17.7	19.1	22.2	69.2	136.3	169.9	229.8
Wheat flour	(b)	18.4	23.1	24.0	26.0	124.3	178.3	212.2	269.3
Sugar, refined	(a)	16.4	23.6	24.2	28.7	111.2	182.2	223.9	297.2
Milk, unsweetened	(a)	2.2	3.2	3.4	3.9	14.9	24.4	29.9	39.8
Cattle (1)	(c)	0.02	0.02	0.02	0.03	105.6	166.0	203.6	271.6
Fish, salted/dried	(a)	2.0	3.0	3.2	3.8	13.3	23.6	28.8	38.9
By retail value at 1960 prices (2)—		£				£ millions			
All imported foods	(a)	4.8	6.5	6.8	7.7	32.4	49.7	60.7	79.4
Meat, total (3)	(a)	1.7	2.1	2.2	2.4	11.1	16.2	19.5	25.1
Fish, total	(a)	0.6	0.9	0.9	1.0	4.2	6.6	8.1	10.7

- (1) Cattle in numbers of heads (*per capita*) or '000 heads (aggregate demand).
(2) Retail values at constant (1954) prices in Table S.24 are expressed in 1960 prices above.
(3) Imported livestock, carcase and other meat products.

VI.15 A summary of projected levels of *per capita* and aggregate demand in quantitative terms is reproduced in Table VI.2. It will be observed that in all cases levels of demand in 1960 are estimated from equations fitted to the time-series for 1954-1961 and not the actual *per capita* apparent consumption in that particular year (see Table VII. 2). This divergence accounts for the small discontinuity in the projection lines shown in Chart I. In addition to various fairly homogeneous commodities which could be expressed simply in volume terms (*i.e.*, lb. per head), we have also estimated future levels of total imported foods, meat and fish expressed as import quanta and at constant retail prices. Table S.24 shows that under the "income" assumptions adopted, Ghanaian demand for all food imports (*c.i.f.*) by 1975 would be some 156 per cent. higher than in 1960. At the retail stage, at constant 1954 prices, aggregate demand in 1975 is projected to a level 145 per cent. higher than 1960.

C. Domestic Supply of Agricultural Products

VI.16 We now turn to a separate consideration of domestic food production in Ghana and to the assessment of some factors likely to influence supply in the directions indicated by our independent demand projections. In a market economy it is logical to give precedence to demand, although it is obvious that any discrepancy between demand and domestic supply must be reconciled by changes in prices and/or imports. Moreover, while it is possible to project demand under various specific assumptions about the behaviour of relevant variables

with the aid of econometric techniques, projection of agricultural production presents more difficult problems.

- VI.17 In the case of Ghana even the most simple of projection techniques—extrapolation of past trends—cannot be applied to those farm products produced for domestic consumption. Indeed, no *single* comprehensive census of agricultural production is yet available for Ghana, although a pilot survey is now taking place in preparation for a full census in 1964-65. Under West African peasant farming conditions it is particularly difficult to define, let alone measure, yields or acreages under mixed and successive crops, and neither F.A.O. nor other experts have as yet much experience with large-scale censuses.
- VI.18 It is usual therefore for African Government statisticians, concerned primarily with measuring the contribution of agriculture total output, to estimate production not “on the ground” or “at the farm gate” but at some stage nearer final consumption, *i.e.*, at recognised markets, as exports f.o.b. or from family budget studies. In Ghana, as in other Commonwealth African countries, export products are well documented by Marketing Boards or in Customs Returns. The same is true of certain cash crops sold to large domestic processing establishments; for example, tobacco and limes. However, even in the case of cocoa and other tree crops grown in forest areas, it is not possible to measure acreages or tree numbers, and hence yields. It is not surprising therefore that methods of recording mixed and successive crops have still to be tested and that only the most approximate estimates of production are available, based partly on sample surveys of farms, on experimental farm records, on “deemed” output necessary to satisfy dietary requirements or on family budget data.
- VI.19 Various estimates of production and acreages under main staples, analysed by region, have been attempted during the past decade in Ghana, using the above methods and the “informed guesses” of agricultural officers. Figures prepared in Ghana for F.A.O. in respect of 1950 are believed to be based upon this “impressionistic” approach. In general, information on the geographical distribution of production and acreage under main crops is more reliable than the overall coverage or any time-series. Preliminary analysis of the National Household Survey reveals the pattern of expenditure by region, and subsequent analysis of the whole sample should include data on food *quantities* consumed, distinguishing regions, urban and rural households, cash and subsistence transactions. Movements of foodstuffs, including livestock have also been recorded in various sample surveys.⁽⁴⁾ These studies emphasise the extent to which local specialization in commercial food farming takes place for Accra and other large urban centres. They illustrate the great flexibility of food distribution in Ghana which enable urban consumers to receive adequate supplies of the cheapest staples throughout the year.⁽⁵⁾
- VI.20 Available information on production, produce movements and market prices suggest that over the decade, 1951-60, total domestic output of staple foods rose broadly in line with population. However, over the longer post-war period, 1948-62, at least three distinct phases may be discerned from movements in local market prices (see Table S.25). First, a period of rapid increase in local food prices from 1948 to 1951, which suggests that domestic food supplies were inelastic with respect to increases in demand, arising from the expansion of cocoa farmers’ incomes especially. However, from 1951 to 1960 the annual rise in local prices was much slower, particularly in the earlier years 1952 to 1955, despite the fact that personal cash incomes were increasing rapidly. During this period commercialised food farming developed rapidly, assisted partly by an improved road transport system. Many cocoa farmers also extended cultivation of food crops, including cassava. In 1961 adverse

climatic conditions led to a serious reduction in food production and sharp increases in urban market prices occurred. However in the following year supplies improved, so that further price increases were moderate, in spite of the restrictions placed upon imported foods towards the end of 1962.

VI.21 It would appear therefore that over the post-war period as a whole total output has risen with the expansion of the rural labour force, which has worked a larger area of land by traditional farming methods. There is little evidence (from price changes) of a persistent imbalance between demand and supply of basic energy foods, roots and tubers, plantains, etc., which can be grown easily throughout the forest zone and the coastal areas. Acute shortages on a national scale have been limited to years of poor harvests, 1947-48, 1950-51 and 1961-62, which through price increases had the effect of stimulating local production as well as imports.

VI.22 However, this does not mean that domestic food production, distribution and seasonal storage facilities have been adequate to avoid widespread problems of under-nutrition in the northern part of the country or deficient nutritional standards for the vast bulk of population. Since traditional peasant farming methods are not likely to close either the seasonal "hungry gap" in the North or the low level of nutrition elsewhere, the Ghana Government plans "revolutionary" changes in farm practices and the organization of marketing. Ambitious food production targets have been set in the new Development Plan, aimed at eliminating nutritional deficiencies in the present diet, reducing food imports and providing for the growth in population. The long-run nutritional objective provides for a daily intake of 2,700 calories per head, which is reckoned to be about 50 per cent. greater than the current intake. However, it is hoped that most of the increase in staple foods will come from cereals, legumes and oils, which also provide proteins, to be grown on large-scale, state farms in the savannah areas. The other important development of food supplies planned for the seven years to 1970 involves a large expansion in fisheries, which are expected to make up most of the deficiency in animal proteins. There are also plans to expand livestock production—a ten-fold increase in domestic meat supplies has been suggested between 1963 and 1970—but since the present cattle population is patently insufficient for this, the main emphasis will probably be directed towards raising pig and poultry output. Since domestic milk production is not likely to be possible in the foreseeable future, fish powder and soya milk have been proposed as local substitutes. Rapid expansion of protective foods—fruits and vegetables—together with cane sugar is also envisaged.

VI.23 We have not attempted to reproduce various official targets, since these are liable to be adjusted from time to time. Experience of large-scale farming and ranching ventures in other tropical African countries over the post-war period suggests that ambitious targets involving state-management, large-scale use of machinery, fertilizers, better seed and rotations are extremely difficult to achieve quickly. Again, replacement of shifting cultivation by "settled" farming systems require a high degree of co-operation and the application of expensive extension services. It can be done in existing areas of close settlement, which are in any case often areas of high agricultural potential, given requisite Government action or popular enthusiasm. The success of the Swynnerton Plan in the Central Province of Kenya or the development of commercialised food farming in Buganda and the Eastern Province of Uganda are cases in point. However, a great deal of experimentation with alternative crops, types of seeds and farming systems will be required before Ghana can attain rapid expansion along new lines.

VI.24 One question which has so far received little attention in the plans for agricultural expansion is the problem of producer prices. Since the Government are concerned about

wage-cost inflation, it is hoped to keep down food prices in the main urban consuming centres. It is hoped that the provision of extension services, access to credit and organised markets will be sufficient incentive for small farmers, while larger-scale schemes will be financed entirely within the state sector. Since, however, food prices in rural areas are often higher than in larger market towns, especially the coastal centres, some increase in urban food prices may be necessary. Imposition of high duties and quantitative restrictions on competing imports should divert some additional supplies to more competitive markets and provide price incentives for greater output of import substitutes. It will be important at this point for Government to restrain pressure on urban wages and prices that would restore the former farm price parities. Given the necessary price incentives during the initial stages of the expansion programme, domestic food supplies are likely to be adequate to maintain an expanding population at the current nutritional standard.

VI.25 We are, however, unable to assess how far these nutritional standards can be raised simply from local supplies over the next decade. All we can do is to compare our projections of aggregate demand with various targets proposed by Government as capable of achievement by 1970 and offer a few comments. We defer until the next and final chapter an appraisal of the market for selected imported commodities of special interest to this study.

D. Balance of Demand and Supply

VI.26 In this Section the successive steps in the analysis are combined in order to assess the extent of discrepancies between supply and demand. Although it is usual to prepare separate projections, in the last analysis demand and supply are not independent. What is not available from domestic production and imports cannot be consumed and price adjustments are necessary to reconcile the two sides. In Ghana, as in other low-income countries in which agriculture is the main economic activity, there is, in addition, a close connection between the rate of growth in total output (G.D.P.) and final consumers' demand, on the one hand, and the expansion of agricultural production, on the other. It follows, therefore, that a relatively high growth rate for G.D.P. and personal consumption, projected at 5.1 per cent. and 4.5 per cent., respectively, for the period 1960-75 in Ghana, will require a relatively high growth rate for agricultural production.

VI.27 We might quantify such a rate as 3.6 per cent., which would be consistent with that estimated for the increase in aggregate demand for local food. It will be observed that if the relevant aggregate demand projections for local food at 1960 retail prices are now inserted in row 8 of Table IV.2 they are broadly in line with the aggregative relationships previously estimated to 1970. This is, of course, hardly surprising since both demand for and supply of local food will be determined mainly by population growth. Indeed, adopting a cautiously optimistic view of Ghana's ability to satisfy future demand for staple foodstuffs, we place most reliance on the opportunities for expanding employment and raising productivity in agriculture. However, if the "agricultural revolution" is successful by 1975 Ghana should have sufficient output to replace almost all imports and at the same time fulfil higher nutritional standards.

VI.28 We cannot assign definite values to other determinants of supply, and the estimated supplies of "importable" commodities shown in the Table VI.3 are taken from the Draft Development Plan. At this initial stage of the Plan it is impossible to say how far these targets are capable of achievement. Our guess, based largely on past experience, is that import substitution will be successful in reducing the absolute size of the local "deficit" in fruit and vegetables, fish, beverages and tobacco and, possibly, sugar and rice. In the case of wheat, milk products and meat, Government policy will aim to restrain demand by fiscal

TABLE VI.3
Comparison between Demand Projections and Estimates of
Future Domestic Food Supplies

	1960	1970	1975
At 1960 retail prices—			
Domestic food supply (1)	126	207	340
Demand for—			
All food	159	239	293
Local food	126	178	226
Imported food (2)	33	61	67
In quantities—			
'000 tons (long)			
Rice—			
Supply target (3)	—	62.5	...
Import demand	30.9	75.8	102.6
Sugar—			
Supply target (4)	—	60.0	...
Import demand	49.6	100.0	132.6
Fish—			
Supply target (5)	36.0	250.0	...
Total demand (6)	58.5	109.3	142.6
Import demand	21.7	53.6	77.8

- (1) Domestic production at 1960 retail prices, estimated under assumptions used for income projections discussed in Chapter IV (see Table IV.2).
- (2) Import demand projected as shown in Table VI.1 (note (4)). Import demand at retail level estimated from time-series data (Table VI.2) shows a higher rate of growth to 1975. The relevant values are: 1960, £32.4 m.; 1970, £60.7 m.; and 1975, £79.4 m.
- (3), (4), (5) Production targets shown in *Draft Development Plan* (Table 45, Chapter IV—Agriculture). Rice and sugar targets for large-scale farms only.
- (6) Includes domestic catches and imports (see section F, Chapter VII).

and quantitative measures. The two main considerations influencing policy are likely to be, first the overall balance of payments position and, secondly, the extent to which particular imports compete with local substitutes. The first consideration may not necessarily involve drastic reductions in all foodstuffs, since Ghana's dependence on foreign aid and markets suggest the need for judicious acts of reciprocity. Bi-lateral trading agreements are also likely to modify the direction of trade in foodstuffs. The main factor influencing public policy must, however, be the rate at which local production can be expanded. Where there is both a real need (on nutritional grounds) and a substantial demand, the Government is not likely to deny consumers access to those foods for which there are insufficient local substitutes.

CHAPTER VI
REFERENCES

<i>Note</i>	<i>Para.</i>	<i>Section</i>	
1	4	A	KANEDA, H. and JOHNSTON, B. F., op. cit. p. 263.
2	4	A	See paragraph 19 of Section D in Chapter V and notes 8 and 9.
3	7	A	HOUTHAKKER, H. S. <i>The Influence of Prices and Incomes on Household Expenditure in Various Countries</i> . Stanford University Memorandum, B.2, April 1959, and <i>The Present State of Consumption Theory</i> . <i>Econometrica</i> , 1961, vol. 29.
4	19	B	<i>Annual Report of the Department of Agriculture, 1956-57</i> . Government Printer, Accra, 1959. Estimates of Production and Acreages of Main Staples (1950) shown in Appendix IV, p. 67; Total Trade over Five Volta River Ferries (1951-56) at Appendix III.A, p. 65; Pwalagu Ferry traffic in main staples indicates food shortage in "hungry" area north of Pwalagu (now Upper Region), 1944-56, Appendix III.B, p. 66. Also NICULESCU, B. M. <i>Food Supplies to Sekondi-Takoradi</i> . Reports to National Food Board. Includes study of food movements by road vehicles in 1955 and <i>Ghana, Produce Movement Census, October 1957-September 1958</i> , with special reference to food supplies for Accra, discussed in Poleman, Thomas, T., op. cit. pp. 164-173 and <i>Supplement</i> ; also in <i>Field Survey Work in the Ghana Statistics Office</i> . Statistical and Economic Papers, No. 8, January 1961, pp. 88-94.
5	19	B	POLEMAN, THOMAS T., op. cit. p. 172.

CHAPTER VII

THE MARKET FOR SELECTED IMPORTED COMMODITIES

In this final chapter we consider in greater detail the Ghana market for certain imported agricultural products, including those in which the United States has a substantial and/or continuing interest. The scope of this study will be confined mainly to some eight commodity groups, which in recent years have not only represented over three-quarters of Ghana's import bill for the S.I.T.C. items: food, beverages and tobacco, but have also accounted for most of the agricultural imports supplied by the U.S.A. The following Table VII.1 lists these selected items and indicates their importance in Ghana's import bill and in U.S. exports to Ghana. Detailed statistics of Ghana's imports of food, beverages and tobacco, analysed by type of product and source of supply are provided in Tables S.26 through S.33.

TABLE VII.1
Ghana Imports of Selected Commodities, 1962

	Total Imports, c.i.f.		Imports from U.S.A.		U.S.A. Share of Imports Per Cent.
	£'000	Per Cent.	£'000	Per Cent.	
A. Rice	3,762	16.3	3,520	78.4	93.6
B. Wheaten products	2,913	12.6	581	13.0	19.9
C. Sugar	2,669	11.5	—	—	—
D. Milk products	1,781	7.7	115	2.6	6.5
E. Meat products	4,493	19.4	92	2.0	2.0
F. Fish products	3,064	13.2	72	1.6	2.3
Other food items	4,459	19.2	104	2.3	2.3
Total food	23,140	100.0	4,485	100.0	19.3
G. Beverages	622	...	1	...	0.2
H. Tobacco	704	...	398	...	56.5
Total imports	119,102	...	9,385	...	7.9
Food, drink and tobacco as percentage of total	...	20.5	...	52.0	...

Source: *External Trade Statistics of Ghana, December 1962.*

VII.2 Domestic production and (often unrecorded) overland imports from neighbouring countries satisfy the market demand for staple energy foods, other than rice and wheaten products, for fresh fruit and vegetables, including pulses, oilseeds and nuts, and for salt and spices. As the relatively small domestic livestock industry does not depend upon imported feeding-stuffs, most of the residual food items excluded from special study represent processed foods, e.g., confectionery, canned and preserved fruits and vegetables, food beverages, etc.

VII.3 Some of these items are consumed largely by upper-income groups and comprise temperate foods, to which expatriates are accustomed and are prepared to pay an increasingly high revenue tax, e.g., fresh potatoes, familiar brands of canned goods, etc. Other items, notably canned and bottled fruit and fruit juices, confectionery and biscuits are now subject

to heavy protective duties and are losing ground to local substitutes. Quantitative restrictions have also affected the market for these and other imported processed foods that formerly at least enjoyed an extensive market among lower-income groups and in rural areas. At the time of the National Household Survey, 1961-62, purchases of all imported foods (including livestock, fish, rice and bread) accounted for some 9 per cent. of total expenditure in the sample of 990 households with annual incomes below £600 and for 24 per cent. of cash purchases on food (see Appendix B). In aggregate terms consumers in Ghana spent something like £44 millions (at retail prices) on imported foods in 1961, when the food import bill reached a record figure of £26.2 millions, c.i.f. This represented a *per capita* expenditure of £6.3 at the retail stage, or £3.8 c.i.f. before duty, processing and distribution margins. While it is difficult to estimate accurately the contribution of imports to total food requirements, perhaps as much as one-sixth of all calorie intake and over one-half of animal proteins were obtained from imported supplies.

A. Rice

VII.4 We begin this review of the Ghana market for selected imported commodities with rice, which is of particular interest to American exporters of agricultural products to West Africa. This "case-study" illustrates many of the difficulties involved in forecasting future levels of imports in the face of measures to increase local food production and reduce imports.

VII.5 Ghana imports of rice have increased more rapidly than her demand for other basic foodstuffs, so that by 1962 this commodity represented 16 per cent. of the c.i.f. value of all food imports and 3 per cent. of total expenditure on recorded imports. What is especially interesting, however, is not so much the rapid rise from an average annual level of 3,805 tons, valued at £251,800 in 1949-53 to 9,605 tons, worth £656,900, in 1954-58, but the manner in which imports have continued to grow even more rapidly in recent years, 1959-62. In Table S.23, which summarises our time-series analysis, the arithmetic and semi-log models show a close correlation between changes in imports and changes in cash income during the period, 1954-61. At the same time the steady decline in the price of imported rice, relative to that of close substitutes, has reinforced the "income" effect. This "substitution" effect was mainly responsible for the sharp increase in apparent *per capita* rice consumption in 1962 (see Table VII.2).

VII.6 Official estimates made from time to time in Ghana indicate some expansion in local rice production, from 22,000 tons (grown on 49,000 acres) given in the report to F.A.O. in connection with the 1950 World Census of Agriculture, to 30,000 tons in 1960. The *Economic Survey*, 1953, shows an estimate of £2.2 millions for the value of rice produced for local consumption in 1950-52; while the *National Household Expenditure Survey* findings suggest a total value for consumers' expenditure in 1961-62 of about £6 million, of which about two-thirds would represent imported supplies (see Table B.1). Price data are too inadequate for much refinement in calculation and little is known about any price premium enjoyed by imported long-grained white rice over locally-produced brown rice. From the nutritional aspect the local product is superior but urban consumers, at least, express a marked preference for the uniformly-graded, long-grained American rice, which has proved a very successful venture for importers since the United States supplies began to make an impact on the Ghana market in 1959. Starting with less than 1 per cent. of the import market in 1956, the United States accounted for 85 per cent. by 1961 and 94 per cent. by 1962 (see Table S.26).

VII.7 The future level of rice imports will depend largely on the success of the Government's aim to make Ghana self-sufficient by 1970. Although no accurate estimate of the current

level of rice production is available, a figure of 30,000 tons is often quoted for 1960, representing output by small-scale farmers. The *Draft* Development Plan provides for a target output by large-scale producers, *i.e.*, the State Farms, Workers' Brigade and Farmers' Co-operatives, of 7,500 tons in the first year (1964), rising to 62,500 tons in the seventh (1970). On the assumption that there is no change in small-scale production, the discrepancy between total domestic production (92,500 tons) and projected demand in 1970 would be some 13,000 tons, which would involve an absolute decline in imports from the 1960 level of 28,800 tons. However, the *published* Development Plan target of 72,000 tons would mean imports of 34,000 tons in 1970, given the same level of aggregate demand of 106,000 tons.

TABLE VII.2
Apparent *Per Capita* Consumption of Selected Commodities, 1949-62

	lb. per annum					
	Annual Average		1959	1960	1961	1962
	1949-53	1954-58				
Population (mid-year) (million)	5.52	6.14	6.60	6.77	6.95	7.14
A. Rice	11.06	...	...	19.45	...	...
(a) Local	9.51*	...	...	9.93	...	...
(b) Imported	1.55	3.45	11.34	9.52	14.94	22.19
B. Wheat flour	9.87	14.04	19.86	18.67	19.85	15.38
C. Refined sugar	6.13	11.15	15.23	18.41	19.95	18.97
of which cube sugar	n.a.	n.a.	n.a.	n.a.	6.52	6.40
D. Milk products (1)	1.16	1.83	2.52	2.59	3.84	3.69
of which unsweetened, evaporated milk	0.77	1.49	2.12	2.17	2.85	2.55
E. Meat products	...	14.83	...	15.65	...	14.31
(a) Local (2)	...	3.14†	...	3.87	...	4.23
(b) Imported, of which	9.41	11.69	11.74	11.78	14.79	10.08
1. Livestock (3)	7.34	7.84	8.51	8.80	11.56	7.89
2. Chilled and frozen meat	0.06	0.22	0.44	0.57	0.87	0.73
3. Dried and salted meat	1.22	2.51	1.89	1.57	1.47	0.77
4. Canned meat	0.79	1.12	0.90	0.84	0.90	0.69
F. Fish products	...	14.57	18.06	17.50	25.88	25.86
(a) Local marine catch (4)	...	9.71	12.02	10.32	10.96	19.64
(b) Imported, of which	3.31	4.87	6.03	7.17	14.92	6.21
1. Chilled and frozen fish	0.02	0.09	0.21	0.92	7.58	1.31
2. Salted and dried fish	1.41	1.32	1.25	2.58	2.86	2.57
3. Canned fish	1.88	3.46	4.57	3.67	4.48	2.33

... Not estimated; * 1950; † 1957.

- (1) Represents evaporated, condensed and dried milk only.
- (2) Consumption based upon estimated "off-take" for slaughter and carcase weight.
- (3) Estimated carcase weights.
- (4) Excludes fresh water catches.

VII.8 At this stage it is difficult to say how successful these large-scale production schemes will be. Given a favourable physical environment, the 1970 production target of 72,000 tons (including small-farm output) might be achieved in certain years in the early 1970's. However, the size of the import gap will probably fluctuate between wider limits—in some "bad" years approaching the demand projection lines; in others, falling below the level of imports attained in recent years. Whatever the absolute level of imports, U.S. suppliers appear to be particularly well placed to take advantage of the market that they have established on the basis of price and quality.

B. Wheaten Products

- VII.9 Although apparent *per capita* consumption of wheaten products in Ghana is still exceedingly small by comparison with traditional wheat-producing countries, it is relatively high by tropical African standards. Indeed, if African countries with sizeable non-African populations are excluded, Ghana ranks after the Ivory Coast and Senegal, where the French bread-eating tradition has been emulated by more prosperous sections of the local population.⁽¹⁾
- VII.10 Moreover, while imports of all wheaten products have shown a substantial increase, of some 160 per cent. between 1949 and 1961, this commodity group has represented a declining proportion of total food imports by value—13 per cent. in 1961, compared with as much as 26 per cent. in 1949. Two distinct phases may be discerned in the behaviour of wheat flour imports, which constitute the most important component of wheaten products: first, a rapid increase from a pre-war level of some 9,000 tons (average 1937-39) to 24,400 tons in 1949-53, which may be partly attributed to “food shortages” in the rapidly expanding urban areas, and, second, a further sharp increase from 1956 (35,000 tons) to a peak level of 61,600 tons in 1961. During this latter period rising cash incomes were probably the predominant factor, although the extension of bakeries and bread-eating habits to smaller towns and lower-income families were also contributory influences. However, substitution of rice or local staples took place in 1962, when price increases (and a deterioration in the flour-content of bread loaves) followed the imposition of a 2d. per lb. import duty in July 1961, subsequently raised to 5d. per lb. in October 1962. Flour imports in 1962 fell sharply to some 49,000 tons, representing an apparent *per capita* consumption of just over 15 lbs. per annum, compared with nearly 20 lbs. in 1961, and over 22 lbs. for *imported* rice in 1962.
- VII.11 By comparison with wheat flour and rice, imports of other cereal products are unimportant. Since the mid-1950's imports of other wheaten products, cabin bread, biscuits, etc. have fallen as the result of the development of local biscuit and cake bakeries, which have been protected by high import duties since 1960 (see Tables S.12 and S.27 (a)).
- VII.12 The future outlook for imports of wheaten products thus depends almost entirely on Ghana's demand for wheat flour (or grain equivalent). There is no possibility of wheat being grown in Ghana in the foreseeable future so that imports will continue to meet all domestic requirements. This means that the long-term prospects for wheat imports may be more promising than for other major food imports, with the probable exception of milk products. Public policy will aim to restrain internal demand, not only to conserve scarce exchange reserves but also to “protect” local production, especially maize and other cereals which are partly consumed in the form of “bread”. Much therefore depends upon the degree of consumers' attachment to local staples and to the activities of “mammy” traders who bake on a small scale. These women have become increasingly important in the bakery trade and now account for some 70 per cent. of all bread baked from wheat flour; the remaining 30 per cent. is produced by “master bakers,” mainly Lebanese, who concentrate mainly on the larger urban markets. Part of the recent success of Canadian flour, which has now ousted U.S. flour from its predominant position in the Ghana market, has been attributed to a policy of capturing this expanding “mammy” trade.
- VII.13 Although there are no plans to grow wheat in Ghana, there will be a switch from the importation of wheat flour to grain when the proposed flour mill at Tema is established. Arrangements have been made for a West German group to build a £40 million factory complex, to manufacture various food products, and a flour mill with an annual milling capacity for 60,000 tons of flour is included. As a by-product of the mill, and together

with the proposed groundnut oil mill and fish cannery, an animal feedstuff unit will be developed to produce some 30,000 tons of animal feed per year. North American wheat may be expected to constitute the bulk of the supply for the new mill, which would require some 83,000 tons of wheat to operate at full capacity, given an extraction rate of 72 per cent. However, since the demand for animal feed is limited, it would seem likely that a higher extraction rate might be used. There could also be greater competition from new sources of supply, e.g., Australia or France. Although Ghanaian consumers prefer bread made from North American flour, attempts are being made to introduce soft wheat. With the present price differentials for the various types of wheat, a 50-50 mixture of soft and hard wheat could lead to a useful reduction in import costs.

VII.14 Given the existence of a local flour milling industry by the end of 1965, it would appear reasonable to assume a minimum level of wheat imports equivalent to the Tema mill's flour production capacity of 60,000 tons. This is approximately the level imported in the "peak" year, 1961, but considerably below our projected level of 80,000 tons for 1965. Considerations of trading reciprocity, as well as internal factors suggest, however, that a forecast of import demand for wheat (flour-equivalent) which follows our demand projection lines may also be regarded as "conservative." These projections based upon time-series data indicate an aggregate demand for wheat flour of some 95,000 tons in 1970, increasing to 120,200 tons by 1975.

C. Sugar

VII.15 The absence of local sugar production and refining capacity has meant that virtually all imports are in refined form. According to the Trade Returns for 1962, only 100 tons of unrefined sugar were imported into Ghana, compared with 60,435 tons of refined sugar, valued at £2,665,000. Until 1956 the U.K. supplied the whole market, but as a result of competition from French refineries and purchases from Eastern European countries imports from the U.K. have since fallen, from 79 per cent. of the market in 1959 to 43 per cent. in 1962 (see Table S.28).

VII.16 Over the period 1949 to 1962 the volume of Ghana's imports of refined sugar increased substantially, by some 380 per cent. However, the marked decline in import prices from 1951 to 1961 involved a much slower increase in import costs. As a result, sugar has accounted for a relatively stable share of Ghana's total food import bill—some 12 per cent. Apparent *per capita* consumption of imported sugar in Ghana rose from some 6 lbs. in 1949-53 to a nearly 20 lbs. in 1961. A slight decline to 19 lbs. occurred in 1962, following the imposition of the 1961 import duty and other restrictions. Our analysis of time-series data indicates a strong measure of association between *per capita* cash income and sugar consumption and a high income-elasticity of demand. Under the assumptions adopted for projection purposes, *per capita* consumption is expected to increase by some 75 per cent. between 1960 and 1975, from 18.4 lbs. to 32.2 lbs.

VII.17 Household budget studies in Ghana reveal the widespread consumption of imported sugar by low-income groups in rural as well as urban areas. This is facilitated by the practice of retailing small lots of five or six cubes for a penny (1d.) to consumers with very small cash incomes. In 1961 cube sugar accounted for one-third of the volume and nearly one-half of the value of refined sugar imports, an indication of the relative importance of the "petty trade," which is extremely flexible in adjusting the number of cubes per penny-lot in response to wholesale price changes. Moreover, in contrast to granulated sugar, cubes are free from adulteration before sale. For this quality and "bulk-breaking" convenience consumers pay a high retail margin, estimated for Accra markets in 1961 at 67 per cent. over landed

cost, compared with 24 per cent. paid by consumers who could afford to purchase a full 1 lb. box of 96 cubes, then retailing for 1s. Moreover, in that year the import price of cube sugar was about 70 per cent. higher than that for granulated sugar, which suggests that increases in household and *per capita* income could lead to greater consumption of cheaper, granulated sugar.

VII.18 Apart from its use by “domestic” distillers of gin and its addition to bakery products, sugar is also used by large-scale enterprises producing bottled beer, soft drinks, confectionery and preserved fruits. Increased domestic production of these products have been responsible for part of the expansion in sugar imports. The Development Plan targets for domestic sugar production involves the establishment of processing capacity for 60,000 tons of refined sugar by 1970, approximately the level of current imports, to be supplied entirely from large-scale State Farms. Definite commitments for technical assistance and long-term credits have already been made with three foreign organisations that could result in Ghana having sufficient capacity for 48,000 tons of refined sugar by 1967. A fourth factory is planned to come into operation in 1969, bringing the total potential output of refined sugar to 60,000 tons.

VII.19 On the demand side, our projections suggest that there will be an increase in consumption (both intermediate and final) of the order of 100 per cent. between 1960 and 1970, which would mean an aggregate demand for some 100,000 tons (see Table S.24). A large proportion of this estimated consumption could be supplied by domestic production, but as Ghana has had little experience of large-scale cultivation and processing it is not possible to assess how far these production targets will be realized. It would seem that in the long run Ghana could be self-sufficient, although for the next ten years or so imports will be required to meet part of the projected demand. In addition, specific imports of specially refined sugar may be required to meet local food processing requirements, if the local product proves unsuitable.

D. Milk Products

VII.20 Since 1949 there has been a fourfold expansion in imports of milk products—fresh and preserved milk and cream, butter and cheese. As will be seen from Table S.29 the most important import item is evaporated, unsweetened milk, which in 1961 accounted in value for 65 per cent. of all milk products. The Netherlands is by far the most important supplier, with a predominant share of the Ghana market for both evaporated and condensed milk. Imports of dried milk have, however, shown the most rapid increase since 1958, with the U.S.A. as the most important supplier from 1960. Imports of fresh milk, butter and cheese have declined in relative importance, from 23 per cent. of total milk products in 1949-53 to 15 per cent. in recent years, which suggests that the market is largely confined to expatriates and upper-income groups.

VII.21 Both urban and rural budget surveys include purchases of imported milk, mainly evaporated milk available in small cans which enjoy an extensive market throughout Ghana as the closest substitute for fresh wholemilk. Analyses of cross-section and time-series data suggest that consumption of evaporated milk is closely related to income. Occupation and urbanisation are also important factors and the recent development of a market for reconstituted “fresh” milk in the larger urban areas may result in some shift to imports of dried milk. Technical improvements in the transshipment of fresh whole-milk could also result in an expansion of sales in Ghana, although the cost of refrigeration might limit the market to the larger coastal towns. Existing imports of bottled fresh milk are supplemented by minute supplies from dairy cows on experimental farms. This output could be expanded but, in the absence of an indigenous dairy herd, the Development Plan has not placed

particular emphasis on whole-milk production. On the other hand, the Government intends to encourage domestic production of some milk substitutes, notably margarine. Included in the industrialization plans is a margarine factory with a capacity of 15,000 tons, sufficient to replace imports which attained a record level of 54,673 cwt., valued at £370,281 in 1961, when butter imports amounted to 6,192 cwt. or £110,739.

VII.22 Prospects for a further expansion of unsweetened, evaporated or dried milk appear to be more favourable than those for other imported foods, since the Government is not likely to impose prohibitive duties on a "protective" food which has no close domestic substitute. A small specific duty of £1 per cwt. introduced in 1962 was not designed primarily as a measure of protection for domestic production, since, generally speaking, none exists. To this extent at least the problem of projecting future imports is simplified. Demand for evaporated, unsweetened milk is expected to double between 1960 and 1970 and to rise by 170 per cent. over the period, 1960-1975. This projection, based upon time-series data, will involve an increase in imports from some 130,000 cwts. in 1960 to 260,000 cwts. in 1970 and 350,000 cwts. in 1975. Imports of dried milk should increase at a faster rate, provided adequate processing and marketing arrangements are made to extend consumption of reconstituted "fresh" milk, ice-cream, etc. to the smaller towns.

E. Meat Products

VII.23 Since Ghana does not extend northwards into the more favourable cattle-rearing environment of the Sudan zone, the country cannot at present carry a livestock population sufficient for either market demand or nutritional needs. Most of the 468,000 cattle estimated for 1962 are reared in the interior savannah (broadly, the Northern and Upper Regions); there are, however, some 100,000 head on the Ho-Keta (Volta) and Accra plains, which are savannah areas free of tsetse infection. Sheep and goats are found throughout the country and are kept for consumption, often in connection with religious or festive occasions, by people who cannot afford cattle. However, as no special husbandry is practised, the numbers are conservatively estimated at only 500,000 sheep and 500,000 goats. More attention is paid to poultry, which are kept not only by farming families throughout the country but also by urban householders and larger-scale "commercial" poultry-producers. The present poultry population is estimated at $3\frac{1}{2}$ millions, compared with $2\frac{1}{2}$ millions in 1957.

VII.24 During the past decade domestic production has provided some 25 per cent. of all meat consumed in Ghana and about one-third of all carcass beef consumption. Until 1962 the annual off-take of domestic cattle for slaughter varied from some 6 to 10 per cent., with a tendency to rise in recent years under the stimulus of higher prices offered by dealers and the extension of the cash economy among traditional cattle-raising people. At the end of 1962 the domestic cattle population was estimated at 468,200, compared with 480,000 in 1960. This decline is attributed to a rise in the rate of off-take to $12\frac{1}{2}$ per cent., which has made it impossible to maintain the 4 per cent. annual growth that prevailed in the late 1950's. However, since extensive use is made of hides not only for leather but also for food, there are no reliable "hide returns" to confirm estimates of off-take based upon stock census counts. It follows, therefore, that estimates of local meat supplies are also less reliable than calculations based upon trade statistics. Nevertheless, in Table VII.2 we have attempted to distinguish the contribution made by local supplies for some years in which stock censuses were carried out. In broad terms it would appear that *per capita* consumption of meat from all sources increased from about $12\frac{1}{2}$ lbs. in 1949-53 to some 15 lbs. in the later 1950's. A peak level of 18-19 lbs. was probably attained in 1961 when imports of livestock were particularly high.

VII.25 Over the period 1949-61 the value of livestock imports increased at a faster rate (320 per cent.) than imports of carcasses and meat preparations (270 per cent.). Whereas the former were obtained from neighbouring countries in West Africa, other imports were supplied by meat-producing countries "overseas." Details of meat imports by origin and type of product are shown in Tables S.30 (a) to (e). In general the market for chilled and frozen meat and for meat preparations (other than canned meats) is restricted to upper-income consumers; while imported livestock is destined for the main urban centres and other concentrations of relatively high income, *e.g.*, cocoa farming districts. Budget surveys indicate widespread consumption of imported canned meat, mainly corned beef and also bush-meat (from local game) and "cheaper cuts." Since meat is mainly consumed in soups and stews, after cutting into small pieces, demand for chilled and frozen "better cuts" is extremely limited. For most Ghanaian consumers there is a marked preference for fresh meat which only locally-killed livestock can provide.

VII.26 Since Ghana's own livestock industry will be insufficient for many years, it is clear that the main source of meat will continue to be neighbouring West African countries.⁽²⁾ However, as incomes rise in both cattle-exporting territories and in the traditional markets along the seaboard, Ghana may find it necessary to look overseas for a larger supply of cheap carcass meat. Projections based upon time-series data suggest that total Ghana demand for imported meat products will increase by some 60 per cent. over the decade, 1960-70. Since domestic output is not likely to expand by more than 40 per cent. between 1964 and 1970, and even this Draft Development Plan target may be difficult to achieve, the Government envisages a substantial growth in fish production as the import substitute best able to solve the problem of animal protein deficiency in Ghana.

F. Fish Products

VII.27 Unlike the other imported items so far considered, Ghana is less dependent upon external supplies of fish products and since 1954 some two-thirds of total consumption has been satisfied from domestic sources. Nevertheless, there has been an outstanding increase in both quantity and value of fish imports into Ghana over the period 1949-62. The most important item within this category is canned fish (see Table S.31). Imports from Morocco, which accounted for 56 per cent. of this market in 1962, have increased rapidly as a result of the trade embargo on imports from South Africa and Portugal, introduced in 1960 and 1961 respectively. The increase in imports of salted/dried fish since 1960 has been attributed to larger imports from French-speaking countries in West Africa. It has been estimated that over 75 per cent. of Ghana's local fish production is caught between June and September so that the importation of salted and dried fish alleviates a shortage in local supplies during the remainder of the year. Imports of fresh and chilled fish are relatively unimportant, although recently imports from Senegal and the Canary Islands have been stimulated by the establishment of cold storage facilities in Accra.

VII.28 Domestic production has expanded substantially in recent years, and in particular in 1962, when the local marine catch was 62,588 tons, including 20,520 tons of fish landed by foreign vessels on contract to the Ghana Fishing Corporation. This increase has followed the adoption of more intensive methods of fishing, *e.g.*, the use of better fishing gear by the canoe fishermen (who in 1962 accounted for over 50 per cent. of the total domestic catch) and also to the greater employment of motor vessels, which numbered 268 in 1962 compared with only 56 in 1956. The Ghana Government places great emphasis on expanding the local fishing industry since it is felt that the protein "gap" can best be filled by greater consumption of fish. As a result the Government has extensive plans to improve harbour facilities and to introduce a better system of distribution and marketing to cope with larger catches.

However, since most of the coastline consists of open surf beach, establishment of new fishing harbours has not been easy. The new harbour at Tema, now the centre of the fishing industry, will be equipped with large-scale cold storage facilities, a deep-freeze plant and a wholesale market. At present, marketing of sea fish and much of the inland catch is carried out by small traders who are unable to handle large quantities of fish at any one time. The Government's policy to create a mechanised fishing fleet with a greater catching capacity has overtaxed existing market arrangements and has made it necessary to set up a market organisation with facilities to handle the proposed increase in output. This Fish Marketing Authority has also been charged with overall responsibility for the wholesale and retail trades.

VII.29 Demand for particular fish products is determined by considerations of income, price and eating habits. While the market for fresh fish is limited by its high price relative to that of smoked and dried fish, its sale beyond, say, a 50-mile radius of the coast is also restricted by an acute shortage of cold storage facilities in up-country centres. Most fish is consumed in stews and a "strong" flavour is usually an advantage. Smoked fish is always in demand, especially in the coastal areas, while most dried and salted fish is consumed inland. Cheaper brands of imported sardines and pilchards from Morocco and Japan are available throughout the country. Their strong flavour, convenience of storage and small size make these canned products popular.

VII.30 Estimates of fish caught in dams, rivers and lakes are generally unreliable. The Government aims to encourage "fish farming" from dams and ponds, e.g., in the land planning areas of Upper Region, as one way of increasing protein intake in the North where *per capita* income is so much lower than in other areas. At present fish processing is undertaken by petty-traders who use traditional methods of smoking, sun-drying and combinations of fermentation and drying. Plans have been made for the establishment of a cannery at Tema, which will also incorporate a reduction plant for edible fish meal. This factory is included in the industrial complex (mentioned in Section B). Total production of canned fish is expected to be in the region of 30,000 tons per annum, using supplies obtained from long-range tuna and sardinella vessels and the surplus from local fishermen. Production from this new factory will be sufficient to meet the needs of the domestic market, which in 1962 took 7,435 tons of imported canned fish, and provide some surplus for export. The Volta Lake is expected to become the largest source of fresh water fish. However, it will take some years before the proposed output of 10-15,000 tons is reached since the flooding of foliage in the lake area could cause poisoning and hamper fishing operations.

VII.31 By 1970 domestic production of fresh fish, canned fish products and edible fish meal should be sufficient to supply all market requirements. The Development Plan aims to increase fresh water fishing from an estimated 5,000 tons in 1962 to 25,000 tons in 1970, which means that the total domestic catch should increase from 42,000 tons (excluding fish contracts) in 1962 to 250,000 tons in 1970. On the demand side, projections based upon time-series analysis of *per capita* consumption (including domestic marine production) suggest that by 1970 total demand will be 109,250 tons. Although Ghana will no longer be dependent on external supplies, imports of salted and dried fish from neighbouring countries will continue to supplement local supplies during the off-season periods. On the other hand, imports of fish products from overseas may be expected to decline as local production expands.

G. Beverages

VII.32 During the period 1949-60 there was a steady expansion in the Ghana market for imported beverages, with ale, beer and stout constituting some two-thirds of the import bill for this

commodity group (S.I.T.C. : 11). Imports of lager-type beer from the Netherlands and West Germany and stout from Eire accounted for most of the market (see Table S.32(b)). While the growth of cash income in the main towns and in cocoa-producing areas was responsible for the steady annual expansion in beer and stout consumption, seasonal factors, connected with "peak" cocoa payments, public holidays and the "hottest" months also affected demand, especially during the earlier years of the period under review. More recently, the extension of regular cash wage payments to a larger urban labour force and the "spacing" of cocoa payments have tended to reduce these seasonal fluctuations. Imports of potable spirits, notably Netherlands gin and "Scotch" whisky also showed a rapid increase between 1949 and 1958, which may be attributed to the expansion of cocoa earnings especially. On the other hand, imports of wines showed little change over the period to 1961, while domestic substitutes have been available for "mineral waters" and other soft-drinks, e.g., "cola" drinks.

VII.33 Local lager-type beer was first produced in Ghana by the "Accra Brewery" in 1931 but it was not until 1960 that a second "Star" Brewery was established in Kumasi. Since the introduction of higher import duties in 1961 and 1962 local beer production has expanded, from an average of 1.2 million bulk gallons in 1957-60 to 1.9 millions in 1961 and 2.5 millions in 1962. This output has called for larger imports of brewers' materials—malt, hops, sugar, glass bottles, etc. Imports of malt (mainly from Czechoslovakia, U.K., Denmark and the U.S.A.) have risen from an average level of some 23,000 cwt. in 1958, when local beer production was 1.25 million gallons, to 31,257 cwt. in 1961 and 51,949 cwt. in 1962. Similarly, imports of hops have increased to 954 cwt. in 1961, compared with 259 cwt. in the previous year. Heavier duties and other restrictions on imported beer have "created" a potential market for a much larger domestic output; unfortunately a shortage of empty bottles, previously made available to some extent from imported beer, has held up production and unsatisfied demand existed during the peak season at the beginning of 1963.

VII.34 As in the case of tobacco, local beer production may be expected to satisfy domestic requirements, with only marginal imports of heavily-taxed products providing a useful source of public revenue—and bottles for the local breweries. Local substitutes for other alcoholic and soft-drinks are also increasingly available, including gin made from distilled palm wine. On the other hand, imports of table wines and more expensive spirits may be expected to grow gradually with the size of the "upper-income" market.

TABLE VII.3
Apparent *Per Capita* Consumption of Cigarettes and Beer

	Annual Average		1959	1960	1961	1962
	1949-53	1954-58				
G. Beer, ale and stout (bulk gals.)	0.78	0.70	0.68	0.72	0.76	0.47
(a) Local	0.18*	0.15	0.19	0.19	0.27	0.35
(b) Imported	0.60	0.55	0.49	0.53	0.49	0.12
H. Cigarettes (sticks)	144.1	185.5†	228.5	256.7	223.8	190.0
(a) Local	—	160.8	217.9	238.6	203.0	181.4
(b) Imported	144.1	24.6	10.6	18.2	20.7	8.5

* 1950-53; † 1957-58.

VII.35 Although budget survey data on consumers' expenditure on "drink" are inadequate in many respects, available information suggests that demand for all types of factory-made

drink, "soft" as well as alcoholic, will be highly elastic with respect to income. A doubling of aggregate demand between 1960 and 1975, implied in our "cross-section" projection, would appear to be, if anything, on the conservative side. However, as far as imports are concerned, these will be largely restricted to raw materials, of which malt and hops are the most "indispensible."

H. Tobacco

- VII.36 Imports of tobacco products have declined sharply since 1959 with the expansion of local substitutes and the imposition of heavier customs and excise duties. Whereas in 1949-53 the average annual c.i.f. value of tobacco products was some £1.54 million (of which £1.12 million represented cigarettes and £0.42 million unmanufactured tobacco designed mainly for chewing and snuffing), by 1960 imports had fallen to £1.11 million and consisted mainly of unmanufactured tobacco required for blending with local tobacco in cigarette production. (Table S.33 summarises the changing pattern of Ghana's imports by type of product and source of supply.)
- VII.37 Local cigarette production began in 1952 but until local leaf-processing facilities were established in 1957 Ghana cigarettes were made from "cut rag," obtained from the U.K. or Nigeria and, later, from Ghana leaf processed in Nigeria. Local leaf production has increased rapidly since large-scale trials were initiated by the Department of Agriculture and the Pioneer Tobacco Company in 1953. By 1962 local leaf production has attained a record level of nearly 3 million lbs., grown on some 4,500 acres, mainly by small farmers. In the same year local cigarettes, composed largely of Ghana tobacco, accounted for 96 per cent. of total domestic sales by volume. According to the Draft Development Plan green leaf production will be expanded from some 6,000 tons in 1963 to 15,000 tons by 1970, of which 6,000 tons will be grown by large-scale, state-sector farms. Provided adequate disease control, curing and marketing arrangements are implemented, the level of imports will be confined to a small amount of high-quality blending tobacco. Ghana should also have some surplus of leaf for export.
- VII.38 The future market for tobacco imports will be negligible. Imports of cigarettes are now limited to highly-priced brands, on which heavy duty is payable. Traditionally, the Ghana market has smoked British brands of virginia cigarettes, and while the total in 1962 was only one-tenth of the 1949-53 level, imports from other countries still accounted for a very small share of "recorded" imports (see Table S.33 (b)). Before 1959 imports of unmanufactured tobacco were supplied mainly from the U.S.A. but recently India and Rhodesia have become more important. By 1962 much of the American imports, classified under unmanufactured tobacco in the Trade Returns, consisted of "black fat" leaf used for chewing. However, since local fire-cured leaf grown in the Volta Region may be suitable for this market, it is probable that these American imports will also decline.
- VII.39 It will be recalled that much of the available budget survey data on tobacco consumption are unreliable. However, our analysis of cross-section data indicates that consumers' expenditure at constant prices should increase by 60 per cent. between 1960 and 1970 and be approximately twice the 1960 level by 1975. This implies that the Ghana market for tobacco products will increase from some £9.5 millions in 1960 to £19 millions by 1975, involving a growth in average *per capita* consumption from 257 sticks in 1960 to 312 and 334 in 1970 and 1975 respectively. Much will depend, however, on the incidence and burden of indirect taxes. The smoking habit is not yet well-established among large sections of the rural population and purchases are subject to considerable short-run variations associated with either price changes or availability of cash income.

TABLE VII.4

Balance of Demand, Supply and Imports of Selected Commodities, 1960-75

Commodity	1960		1965		1970		1975	
	Demand	Supply	Demand	Supply	Demand	Supply	Demand	Supply
A. Rice	59.0	30.0	91.0	43.0	106.0	72.0	133.0	93.0
B. Wheat flour	56.0	—	80.0	—	95.0	—	120.0	—
C. Sugar	56.0	—	81.0	15.0	100.0	60.0	133.0	100.0
D. Milk—								
Evaporated	7.0	—	11.0	—	13.0	—	18.0	—
Dried and condensed	1.0	—	2.0	—	3.0	—	4.0	—
E. Meat	47.0	12.0	66.0	16.0	80.0	20.0	100.0	28.0
F. Fish	53.0	31.0	88.0	87.0	109.0	250.0	143.0	250.0
G. Beverages—								
Ale, beer and stout (million gals.)	4.9	1.3	6.7	6.7	8.0	8.0	10.0	10.0
H. Tobacco—								
Unmanufactured (million lb.)	6.0	2.5	8.0	4.0	9.5	6.7	12.0	12.0

'000 long tons

75

NOTES TO TABLE VII.4.

A. Import demand projected from time-series data using semi-log model and "estimated" consumption in 1960. Demand and supply include 30,000 tons of brown rice produced by small farmers throughout 1960-75. Supply in 1965 assumes additional contribution from public sector farms of 13,000 tons, while 72,000 tons in 1970 (taken from Published Plan Targets, p. 72), may be "upper" limit, given 42,000 tons from public farms towards eventual Draft Plan target of 62,500 tons, assumed feasible by 1975 (see discussion in paras. IV, 13, and VII, 7).

B. Demand for wheat (in flour equivalent) using semi-log model.

C. Final and intermediate demand for refined sugar projected using linear model. Local production in 1965 and 1970 taken from Draft Plan; final Published Plan gives 1970 target of 1,000,000 tons of cane (100,000 tons of refined sugar), assumed feasible by 1975 for this study.

D. Milk products projected using time-series of evaporated (unsweetened) milk on linear model. Commercial imports of dried milk assumed to grow more rapidly at expense of condensed and fresh milk. Additional imports of dried milk under P.L.480 and other aid schemes excluded but could be considerable, e.g., 1963 dried milk imports 13,300 tons (£314,500) of which 12,400 tons (£314,400) from U.S.A.

E. Total demand comprises recorded imports of livestock and all meat products plus estimates of local beef, mutton and pork; projected using linear model and time-series data (quantum series). Separate projection of (i) livestock (imported and local) using double log model and (ii) other imported meat using semi-log (quantum data) yields aggregate demand for some 80,000 tons in 1965, 96,000 tons in 1970 and 126,000 tons in 1965. Local supplies (excluding poultry) projected using Development Plan targets assumed feasible five years later. Existing demand structure and prices suggest import demand for carcase meat and salted/dried products may increase from 9,000 tons in 1960 to 17,000 tons by 1975; however, probable rise in relative cost of imported livestock would extend market for overseas supplies, except canned and manufactured products for which local substitutes by 1965-70.

F. Total demand, excluding local supplies of fresh water fish and unrecorded imports overlaid, projected on time-series at retail level using linear model. Final Draft Agricultural Plan indicates 1970 nutritional requirements at some 700,000 tons, while final Published Development Plan targets are 250,000 tons (1970) and 140,000 tons (1965) assumed feasible in above Balance Table. Changes in demand structure from meat to fish products could absorb potential surplus implied in projections.

H. Balance table indicates net import position in volume terms. Probable export surplus of locally-grown leaf and marginal imports of unmanufactured tobacco for blending purposes.

I. Balance Table for Selected Commodities, 1960-75

VII.40 In this final section an attempt is made to quantify some of our conclusions in the form of a balance table covering selected importable commodities for the period 1960-75. We wish to emphasise, however, that there is no scientifically respectable basis for many of the figures presented in Table VII.4. In some cases where domestic supplies are important even the estimates for actual demand in 1960 are not as "firm" as we would wish. Future levels of demand are derived under the restrictive assumptions discussed in Chapters V and VI. Determination of future levels of supply must be set within even wider limits, ranging from zero, in the case of some "temperate" products to very high targets envisaged under the new Seven Year Development Plan, 1963-70. Under these circumstances even simple questions concerning the future direction of change in import levels become extremely difficult to answer with confidence. Because of the many qualifications that could be made, we have presented only a single row of balances for each commodity, relegating additional comment to the notes under Table VII.4.

CHAPTER VII

REFERENCES

Note	Para.	Section	
1	9	B	JOHNSTON, BRUCE F., <i>The Outlook for Wheat and Flour Imports in Tropical Africa</i> , FAS-M-48, February 1959, pp. 6-17; Jones, William O. and Mérat, Christian, op. cit. (note 10, paragraph 21, section D of Chapter V).
2	26	E	The <i>External Trade Statistics</i> refer to the point of entry rather than the actual origin of cattle imported into Ghana. Most of the cattle originate from territories to the north of Ghana which lie within the bend of the Niger, between Bamko (Mali Republic) and Niamey (Niger Republic). See Hutchison, R. A., "Stocks and Methods of Annual Husbandry" in <i>Agriculture and Land Use in Ghana</i> , ed. Wills, J. Brian.

APPENDIX A

THE WORLD COCOA SITUATION AND PROSPECTS

Since the position of cocoa is crucial to Ghana, we consider that some appraisal of the world situation and prospects to 1975 should be included in this Report. It will be recalled that in Chapters II and III an attempt was made to illustrate Ghana's dependence on this export crop and to examine her continued reliance on this source of income during the next decade. Much has been written in Ghana and elsewhere about this important industry and we have not therefore felt obliged to discuss it at great length within the context of domestic agricultural production.⁽¹⁾ The object of this Appendix is to provide a background against which future movements in Ghana's cocoa exports may be projected.

1. Recent Developments and Short-term Prospects

The world cocoa situation has changed fundamentally over the past four crop years, 1959-60 to 1962-63. Forecasts made as late as 1959 suggested that world production might attain an "average" level of around 950,000 long tons by 1965 and would not exceed the one million figure until 1970.⁽²⁾ In the event, however, world production departed abruptly from a post-war trend line after 1958-59 (905,000 tons) to register two successive record levels of 1,039,000 tons in 1959-60 and 1,168,000 tons in 1960-61. On the basis of the current Gill and Duffus forecast of 1,166,000 tons for 1963-64, it would appear that output has now reached a relatively stable plateau at the level of 1.15 million tons, with a maximum fluctuation of only 46,000 tons between seasonal crops over the period since the 1960-61 peak.⁽³⁾

World consumption, in terms of grindings of cocoa beans, is estimated at a record 1,142,000 long tons for the calendar year, 1963. Although the increase of 49,000 tons or 4.5 per cent. over 1962 is considerably below the average annual increase of 8 per cent. achieved in the previous three years, it compares favourably with the F.A.O. long-range forecast, made in May 1962, of an average growth rate of 4 per cent. per annum. The immediate outlook indicates a further small increase in grindings during 1964, provided world prices are not materially higher than the average 1963 level of 25 cents per lb. (Spot Ghana, New York).

The short-term outlook for cocoa appears to be one of modest growth in consumption, with a world price not very different from the current level. Although the range of price fluctuations was greater in 1963 than in the previous year, the average world price at 21 cents (U.S. import price c.i.f.) was only slightly higher and there was a close balance between supply and demand for the second year running.⁽³⁾ Provisional estimates for 1963 suggest a slight reduction in accumulated stocks, for the first time since 1958. However, whereas stocks were then reckoned to represent only three months' supply or 25 per cent. of absorption, they currently account for over five months' or over 40 per cent. of absorption. Unless unforeseen factors intervene, prices should therefore remain at a level which is low enough to encourage further increases in consumption. The failure of the recent Geneva conference on a proposed International Price Stabilization Scheme may be partly attributed to the weakness of producer demands for a high (27 cents) minimum price at a time when a price of 21 cents was proving an effective equilibrating mechanism, stimulating higher consumption and avoiding a potentially burdensome surplus.

2. Prospects for World Production

World production, which declined during the period 1950-49, rose slowly during the subsequent decade. However, a marked change in the rate of growth has taken place during the past four seasons, 1959-60 to 1962-63. Not only has production averaged some 1.1 millions tons, compared with 840,000 long tons in the previous five years, but a combination of favourable weather conditions, improved yields and the harvesting of new trees has ironed out wide fluctuations from season to season. Much of the increase, which has taken place mainly in Ghana and Nigeria, may be attributed to the success of controls against capsids which for a long time held back production from new trees. Inadequate data on tree numbers and on the rate of planting made it impossible to assess the importance of the various factors influencing output. One estimate for Ghana puts the rate of planting at between 75,000 to 100,000 acres per annum and suggests that some 1.5 million acres out of a total of 4.4 millions under cocoa in 1959 had been planted during the past decade and were either below or just reaching bearing age.⁽⁴⁾ Even at a conservative estimate of 300 lbs. per acre, this new acreage should result in additional output of some 200,000 tons. The average annual output in Ghana for the four-year period 1959-60 to 1962-63 was around 400,000 tons or 160,000 tons higher than the annual average achieved in the previous ten years. Recent experiments with fertilizer application and removal of excess shade indicate considerable scope for improving yields per acre.⁽⁵⁾ What is true for Ghana is probably equally true for other West African producers and, while the extension in acreage under cocoa may now slow down in the face of rising labour costs and greater profitability of alternative crops, cocoa farming even at present producer prices and yields is probably the most profitable activity in the rural economies.

In Brazil, where official estimates indicate that over 60 per cent. of the cocoa is over 50 years of age, increased output will depend greatly upon replanting. In contrast to other Latin American producing countries, Brazil enjoys low production costs more comparable with Africa and, although the course of prices will undoubtedly affect the rate of replanting and extension of cocoa to new areas, on balance output should continue to grow during the present decade.

In 1962 F.A.O. made a long-term projection of production by 1970 which suggested a range between 1.25 and 1.5 million *metric* tons, depending upon price. It would appear that recent developments in the world cocoa market require some upward revision of these projections. Certainly the relative stability of cocoa over the past two years or so at the (post-war) low price of around 20-21 U.S. cents per lb. has stimulated consumption in high-income countries. Looking further ahead to 1970 and 1975, developments in these markets and in Eastern Europe will largely determine whether the level of demand will rise sufficiently to sustain yet larger increases in production.

3. Consumption of Cocoa

The world market for cocoa products is dominated by a limited number of high-income countries in which price rather than income is now the predominant factor. In the U.S.A., the largest consuming country (25 per cent. of the world market for raw cocoa), *per capita* cocoa consumption has fallen steadily since before the war and changes in personal incomes no longer have a positive effect on cocoa consumption. High cocoa prices in 1954 accelerated the downward trend, encouraging manufacturers to substitute other ingredients including synthetic cocoa butter, nuts, etc. Lower cocoa prices in subsequent years helped to restore consumption to the 1953 level, which was, however, still well below both pre-war and post-war peaks. Under the stimulus of lower prices, *per capita* consumption of cocoa has increased since 1959 but the latest estimates indicate a level some 10 to 15 per cent. below the pre-war

figure of 5.2 lbs. per head (1936-38). The effect of higher "real" cocoa prices since before the war, with the "ratchet-effect" of sharp price increases in 1954, have off-set any increase in cocoa consumption which might have been associated with rising real income per head. Although the real price of raw cocoa, when deflated by the U.S. Wholesale General Price Index, has been falling steadily since 1958 and is now around the 1949 level, it is still about twice the 1934-38 average. A number of factors other than price and income have also operated in the U.S.A. to restrict the consumption of cocoa products, including dietary and marketing considerations. Expansion of the American market must therefore depend largely on the growth of population, the absence of shifts in relative prices that would induce further substitution effects and a change in tastes such as a shift from tobacco to confectionery.

Similar forces appear to have been operating in the United Kingdom where *per capita* consumption of cocoa products declined sharply after 1953, again partly in reaction to higher cocoa prices in 1954. In the peak year, 1953, U.K. consumption was 6.8 lbs., compared with 4.3 lbs. in 1938-38. By 1958 it had fallen to 5 lbs. per head, recovering after 1959 to around 15 per cent. above the pre-war figure as a result of lower relative prices for cocoa products. As in the U.S.A., the income effect is probably no longer important and expansion of the British market will depend largely on the rate of population increase and positive price effects. The recent (April 1962) imposition of a 15 per cent. purchase tax on confectionery is estimated to have reduced consumption by 3 per cent., although favourable cocoa prices have encouraged substitution at the expense of other confectionery.

The six countries of E.E.C., as a group, form the largest and fastest growing market for cocoa, accounting for 35 per cent. of world imports of beans and some 30 per cent. of consumption. The difference in these percentages is due to exports of cocoa butter and chocolate products from the Netherlands, which in consequence has a *per capita* consumption now approximately the same as West Germany, where the rapid rise in real income since 1949 has had a noticeable effect on cocoa consumption. At a current level of 4 lbs. per head, West Germany's cocoa consumption is 30 per cent. higher than in 1950-51 and 60 per cent. larger than the pre-war figure of 2.5 lbs. Estimates of a further increase of 50 per cent. in aggregate consumption over the decade 1960-70 (given an income-elasticity coefficient of 0.5) makes West Germany the most promising market for expanding cocoa sales. The outlook in Italy is also promising and, on balance, cocoa consumption in E.E.C. should increase by 25 per cent. between 1960 and 1965 and by a further 20 per cent. from 1965 to 1970. Reductions in indirect taxes on cocoa and chocolate could have a marked effect on retail prices and lead to still further increases in consumption in E.E.C. countries. Given the association with former French territories in Africa, the common external tariff on cocoa of 5.4 per cent. should enhance opportunities for further expansion in cocoa trade, between Africa and West Germany in particular.

Demand is likely to increase in poorer European countries where present *per capita* consumption is still below 2.5 lbs. per head but where strong income effects have been apparent, e.g., in Spain. On the other hand, in other high-income countries, Sweden, Canada and Australia, post-war experience indicates that the rate of growth of *per capita* consumption tends to level off as it approaches the range of 3 to 4 lbs. per head, after the U.S. pattern and in contrast with Switzerland where *per capita* demand provides a world record of over 7 lbs.

One region where prospects are more uncertain, because of the absence of a free market, but on the whole promising, is Eastern Europe. At present *per capita* consumption is very low by Western standards, exceeding 1 lb. only in Czechoslovakia and estimated at a mere

0.3 lb. in the U.S.S.R. Imports of cocoa have shown a decided increase in recent years, reflecting to some extent rising real incomes as well as the more obvious decisions of economic planners. From an average of 46,000 tons in 1956-58, through 80,000 tons in 1959-61, to 100,000 tons in 1962-63, Soviet-bloc imports could attain a level of 200,000 by 1970. Under a five-year trade agreement, Ghana sales of cocoa to the U.S.S.R. are due to increase annually to a level of 60,000 by 1965-66, compared with 20,000 tons taken on average over the period 1959-61. Similar agreements, have been made by Soviet countries with Brazil and the Cameroun.

However, over the period to 1975 developments in markets outside the U.S.A. and Western Europe will not have any pronounced impact on aggregate grindings, although they could of course have an important influence on the level of prices and stocks. The following table summarises some of the projections of demand for cocoa grindings made by various authorities in recent years.

TABLE A.1
Projected Demand for Cocoa Grindings in 1970

Estimate	" A "	" B "	'000 long tons		
			" C "		
			(i)	(ii)	(iii)
Price assumption in £ per long ton .	280	280	144	192	240
In U.S. cents per lb.	35	35	18	24	30
U.S.A.	307	316	311	290	276
Western Europe	487	490	(L) 631	579	537
	...	...	(H) 644	590	549
Other, non-Soviet	160	160	(L) 323	298	281
	...	...	(H) 336	309	290
Total, above . . . . .	...	...	(L) 1,265	1,167	1,094
	...	...	(H) 1,291	1,189	1,115
Soviet countries	85	100	(250)	(225)	(200)
World total	1,039	1,066	(H) 1,541	1,414	1,315

Sources :—

" A." *Prospects for World Cocoa Production and Consumption* by John Cadbury. Paper presented to Cocoa Conference, London, 1959.

" B." *Prospects for World Cocoa Consumption*. The Economist Intelligence Unit, London, January 1960. Study for the Cocoa, Chocolate and Confectionery Alliance.

" C." *F.A.O. Agricultural Commodities Projections for 1970*, Rome 1962. (L) and (H) refer to low and high income assumptions. Since elasticity is zero for U.S.A. (and for U.K., not distinguished), the L and H assumptions provide the same consumption at each price level. Estimates for Soviet countries have been added to the F.A.O. projection. See E/CN 13/48. CCP. 62/5 pp. II-40-41. Some price elasticity of Soviet demand for cocoa imports is not an unreasonable assumption.

The above table illustrates the difficulty of making projections for a commodity with a high price elasticity. Excluding the estimate for Soviet consumption, a large part of the difference between the various estimates arises from the alternative price assumptions adopted by F.A.O. Consumption trends under recent low world prices indicate that as a first approximation demand for cocoa might be projected on the basis of a price of 24 cents per lb., with the F.A.O. population and "higher" income growth rates. However, the base period for consumption, measured in grindings of cocoa beans in long tons, is moved forward

to an annual average of the three years 1960 to 1962 when the world price was in fact around 24 cents per lb. Table A.2, below, shows the projected level of world cocoa demand to 1975.

TABLE A.2
Projection of World Consumption of Cocoa, 1965-75

Countries or Regions	Annual Average		Indices of Consumption			Projected Demand			
	1960-62 '000 tons	Per cent.	1965	1970	1975	1965	1970	1975	Per cent.
U.S.A.	294	29	107	116	127	315	541	373	23
Western Europe	480	47	108	118	133	519	565	639	40
U.K.	112	11	102	104	107	114	116	120	7½
E.E.C.	300	29	110	122	141	330	366	423	26½
Other	68	7	110	122	141	75	83	96	6
Other high-income	28	3	108	120	132	30	34	37	2
Latin America, etc.	135	13	119	147	182	161	198	246	15½
Total above	937	92	109	121	138	1,025	1,138	1,295	81
Soviets	80	8	(165)	(281)	(375)	(125)	(225)	(300)	19
World total	1,017	100	(113)	(134)	(157)	(1,150)	(1,363)	(1,595)	100

Source: *Gill and Duffus Market Reports and F.A.O. Projections for 1970*, adjusted to a base of 1960-62 annual average consumption. Zero income elasticity assumed for U.S.A., U.K. and "other high-income countries," here confined to Canada, Australia and New Zealand. Consumption figures adjusted to include trade in processed cocoa products. This factor raises figure for U.K. and reduces that for the Netherlands, Brazil, Ghana, etc.

The above projections are made under F.A.O. assumptions of "high" income growth and a cocoa price of 24 cents per lb. The estimate for consumption by Soviet countries is based simply on recent trends and could well be an under-estimate, for 1975 especially.

4. Ghana Cocoa Exports

Over a long period world cocoa production will be adjusted to levels of consumption, although projected levels of consumption shown in the above Table A.2 could be consistent with higher or lower production figures for individual seasons. Indeed, actual production for 1965 might well exceed consumption by more than the record surplus of 128,000 long tons accumulated in 1961. Pressure of available supplies should keep cocoa prices around the present level of 21 cents per lb. during the next few years. An average of 24 cents for the period to 1975 has been assumed.

TABLE A.3
Projection of Ghana Cocoa Exports to 1975

	Actual 1960-62	1965	1970	1975
World production/consumption, long tons, million	1.1/1.0	1.2	1.4	1.6
Ghana share, per cent.	0.39	0.41	0.47	0.53
Valued at export prices, £m.	75.0	75.0	86.5	96.5
Equivalent to world price—				
£ per ton	203	192	192	192
Cents per lb.	25.4	24.0	24.0	24.0

Since Ghana accounts for one-third of world cocoa production, and changes in her output are also usually reflected in that of other West African countries, it is not possible for Ghana to expand her receipts from cocoa exports by increasing the volume of output at a faster rate than the growth in world consumption. Indeed at the current production and consumption levels of around 1.1 million long tons, a 10 per cent. increase in world production might force down prices by as much as 25 to 30 per cent. It is unlikely therefore that Ghana's proceeds from cocoa production will exceed the record sum of around £80 million obtained in 1954-55 until the late 1960's. In that particular year production of 244,000 tons (including an estimated 24,000 tons smuggled into adjoining French territories) fetched around £360 per ton; by contrast 410,000 tons exported in 1960-61 realised £72 million or £175 per ton.

According to the *Draft Development Plan for Ghana*, public policy will be directed so as to maintain Ghana's share of world cocoa production, and to achieve the expansion in output by improving yields per acre rather than extending acreage. Although the future course of cocoa prices is viewed with caution, a figure of £200 per ton has been taken for planning purposes. This would mean an average export income of £90 million from 450,000 tons for the seven years 1964 to 1970. It is also proposed to raise the capacity of the local cocoa processing industry from about 25,000 tons of beans in 1963 to 100,000 tons by 1970, or to one-third of the raw cocoa production at a later date. It is hoped that domestic processing will enhance the export proceeds to the extent of £100 per ton so that by 1970 an *additional* £10 millions might be added to cocoa export proceeds. In so far as additional sales of cocoa butter, cake, etc. may be arranged with newer markets in Eastern Europe, domestic processing may be beneficial, but in selling to traditional markets, on the Continent of Europe especially, importers may not be willing to pay a high premium for Ghana processed cocoa in competition with existing sources. There is also the added disadvantage of a higher E.E.C. common external tariff of 22 per cent. on processed cocoa, compared with a rate of 5.4 per cent. on cocoa beans. Further processing of cocoa before exportation may therefore have only a minor effect on total export income. Over the period 1961 to 1975 exports of raw cocoa should increase by some 33 per cent., with some expansion in income, of the order of 30 per cent., between 1965 and 1975. However, Ghana would be well placed to benefit from any unforeseen expansion in Sino-Soviet imports and this could materially affect the position.

APPENDIX A

REFERENCES

Note

- 1 Various aspects of the Ghana cocoa industry have been discussed in the *Economic Bulletin (Accra)* e.g., by Rimmer, D., *Income Taxation and Cocoa Farmers*, vol. 2, No. 8, August 1958; by Hill, Polly, *How Large are Ghana Cocoa Farms (and Farmers)*, vol. 4, No. 5, May, 1960, and Green, R. H., *The Cocoa Industry: An Examination of Some Current Problems*, vol. 5, No. 1, May 1961. See also *Bulletin of Agricultural Economics (Accra)*, vol. 1, No. 2, September 1961; Wills, J. Brian (ed.) *Agriculture and Land Use in Ghana*, O.U.P., 1962, Chapter 18, 19, and Hill, Polly, *The Migrant Cocoa-Farmers of Southern Ghana*, C.U.P., 1963.
- 2 CADBURY, JOHN. *Prospects for World Cocoa Production and Consumption*. Cocoa, Chocolate and Confectionery Alliance, London.
- 3 GILL and DUFFUS. *Cocoa Market Report* (monthly). World price related to U.S. import price. Estimates in this Appendix taken mainly from Report No. 168 of 13th January 1964.
- 4 F.A.O. *Agricultural Commodities—Projections for 1970*. E/CN. 13/48. CCP. 62/5, pp. 11-42.
- 5 CUNNINGHAM, R. K. and SMITH, R. W. *The Significance of Some Recent Work in Ghana on the Shade and Nutrient Requirements of Cocoa*. Paper to 1961, Cocoa Alliance Conference, London.

APPENDIX B

CLASSIFICATION OF EXPENDITURE ON LOCAL AND IMPORTED FOOD

This Appendix explains the different definitions of local and imported food, to which references are made in various chapters of this Report. We have also attempted to measure the relative importance of these two components of consumers' expenditure on food, using in the main the preliminary findings of the National Household Survey, 1961-62, and estimates based upon import statistics.

According to the definition adopted in the official surveys of household expenditure, imported food is restricted to the following coverage: cheese; flour; milk (evaporated and other); sugar; sardines; other tinned fish, etc.; "Horlicks," "Ovaltine," etc. (*i.e.*, branded food beverages and baby foods); tea, coffee, etc.; and imported food, *n.e.s.* The expenditure category, prepared meals, simply distinguishes between fees to caterers and other purchases. Drink is classified into local beer; imported beer; bottled soft-drinks; local palm wine, etc.; and imported spirits; while tobacco products are recorded by type of product, *i.e.*, cigarettes, tobacco and snuff. The above classification means that a large part of food supplies of foreign origin are included under the definition of local food, in particular rice, livestock, carcase meat and fish, fresh, dried and salted. On the other hand, whereas drink and tobacco consisted mainly of imported supplies in the earlier surveys, by 1961-62 locally produced "import-type" products predominated.

For this report we have re-classified certain categories of local and imported food. In analysing the earlier urban and rural inquiries, we have included bread, flour and rice under imported food; while all meat and fish, other than canned or factory-processed products, have been regarded as "local," despite the fact that most meat and much of the fish consumed by all income groups in Ghana are derived from either neighbouring countries or from overseas. It was not possible to re-allocate any of the items included in the samples drawn from the National Household Survey, 1961-62, with the result that rice, livestock, cheaper meat and fish, other than canned, remain under "local food." On the other hand, our time-series analysis, and demand projections based upon this approach, follow the definitions of imported food found in the External Trade Reports.

We have however attempted to reconcile the various definitions in terms of aggregate consumers' expenditure on all cash food in 1961. In Table B.1 columns (2) "Local Food" and (4) "Imported Food" were estimated directly from the preliminary findings of the National Household Survey, 1961-62; column (3) "Imported Food" is an estimate of the aggregate retail value of foodstuffs actually imported into Ghana in 1961, while column (5) provides an estimate of expenditure on imported food if certain items included in the N.H.S. as local food are re-defined as imported food. The figure of £27.95 millions shown in this column is the sum of column (4)—£10.50 million plus £17.45 millions *excluded* from column (2) for: rice (£3.10 m.); wheat flour (£1.24 m.); meat (£4.26 m.); and fish (£8.85 m.).

It will be observed that the official (N.H.S.) definition of imported food accounts for 38 per cent. of the "adjusted" estimate and only 24 per cent. of that obtained by the "commodity-flow" approach shown in column (3). In addition to differences in definition

TABLE B.1
Classification of Aggregate Cash Expenditure on Food, 1961

	(1) Total Food	(2) Local Food (N.H.S.)	(3) Imported Food (retail value)	(4) Imported Food (N.H.S.)	(5) Imported Food (adjusted)
Rice	5.81	2.69	3.12	—	3.10
Wheat flour (bread)	4.77	—	4.77	0.79	2.03
Other wheat products	0.70	—	0.70	0.16	0.16
Other cereals, grain and prepared	14.30	13.35	0.77	—	—
Roots and tubers	15.46	15.46	—	—	—
Plantain	4.42	4.42	—	—	—
Cassava, prepared	5.34	5.34	—	—	—
Nuts	1.81	1.81	*	—	—
Oils, vegetable	2.93	2.93	*	—	—
Fruits and jams	3.08	3.08	*	0.05	0.05
Vegetables	8.82	8.82	*	0.05	0.05
Pulses	0.54	0.54	*	—	—
Fish	20.75	14.42	6.33	2.07	6.33
Meat	20.12	5.12	15.00	1.34	10.19
Sugar	5.23	—	5.23	1.47	1.47
Milk products	2.37	—	2.37	3.88	3.88
Miscellaneous	7.66	2.18	5.48	0.68	0.68
Total	124.10	80.34	43.76	10.50	27.95

* Included in Miscellaneous.

Source: GOLDING, op cit., especially Tables 2 and 3, pp. 22-23; *External Trade Statistics, December 1961*.

N.B.—Column (2) is based upon preliminary National Household Survey, 1961-62 findings, excluding £17.45 millions for imported rice, wheat flour, meat and fish "transferred" to column (5).

TABLE B.2
Consumers' Expenditure on Food, 1955, 1960 and 1961
at current market prices

	1955		1960		1961	
	£m.	Per Cent.	£m.	Per Cent.	£m.	Per Cent.
All food	122.00	100.0	159.00	100.0	190.00	100.0
Own consumption	54.50	38.5	57.90	36.4	65.90	34.7
Local cash food	47.01	44.7	68.71	43.0	80.34	42.3
Total local food	101.51	83.2	126.21	79.4	146.24	77.0
Imported food	20.49	16.8	32.79	20.6	43.76	23.0
Wheat flour	2.87	2.4	4.05	2.5	4.77	2.5
Other wheaten products	0.75	0.6	0.36	0.2	0.70	0.4
Rice	0.38	0.3	2.02	1.3	3.12	1.6
Sugar	2.59	2.1	4.59	2.9	5.23	2.8
Milk products	1.30	1.1	2.18	1.4	2.37	1.2
Total meat	7.28	5.9	10.71	6.8	15.00	7.9
(a) Livestock	5.42	4.4	8.72	5.5	12.56	6.6
(b) Other	1.86	1.5	1.99	1.3	2.44	1.3
Fish	3.27	2.7	4.23	2.7	6.33	3.3
Other items	2.06	1.7	4.66	2.9	6.25	3.3

and coverage, the National Household Survey data excluded consumption of households with incomes above £600 per annum, which would be especially important for miscellaneous imported items, and also intermediate uses, *e.g.*, for sugar in local drink and confectionery production, included in column (3).

Unless otherwise stated in this report, imported food has been defined in accordance with the External Trade Returns. This approach involves some very approximate estimates of internal margins but has the advantage of providing a more reliable time-series and affording direct comparison between aggregative relationships and the flow of imports in volume and value terms.

Table B.2 reproduces this project's estimates of aggregate consumers' expenditure on imported foods in 1955, 1960 and 1961. These estimates are based upon import values, raised to the retail level by margins calculated after discussions with officials, traders and import houses in Ghana. Cash expenditure on local food is derived as a residual after subtracting estimates of consumption of imported foods and subsistence output (own consumption) from the official figures of expenditure on all food given in the *Economic Survey*, 1962. Own consumption was estimated from N.H.S. data, carried back to 1955 by reference to population and price data, weighted by region and urban/rural strata. Various estimates of aggregate food expenditure have been used in other tables shown in this report; for example Table S.2 which summarises the pattern of total personal consumption in Ghana follows the restricted definition of imported food adopted by the official statisticians.

APPENDIX C

EXPENDITURE BY CROSS-SECTION OF GHANA HOUSEHOLDS, 1961-62¹

This Appendix examines the relationship between food consumption and total expenditure for a cross-section of Ghana households drawn, for the first time, from a national sample survey covering the whole of Ghana which was carried out by the Central Bureau of Statistics over the period, August 1961 and to March 1962.

This National Household Survey consisted of some 3,000 households drawn at random from the 1960 Population Census. A one-third sub-sample of 990 households had already been processed by the time we visited Ghana in February 1963 and had provided data for a revision of national expenditure and cost-of-living statistics.

1. Selection of Sample

With the limited resources available to us in Ghana, we decided to confine our cross-section analysis to one week's expenditure by 165 households, drawn at random from the 990 processed returns. We selected the first household in the six already analysed under each Enumeration Area and then obtained details of expenditure, for the fifth week by 123 households covered during the 12-week survey period from mid-August to mid-November 1961, and for the fourth week by 42 in Ashanti and Brong-Ahafo Regions which were enumerated over a six-week period from mid-February to end-March 1962.

While details of expenditure by main groups had been aggregated for the one-third sub-sample of 990 households on regional and urban/rural strata bases, total expenditure by individual households had not been analysed. Had this data been readily available, a larger cross-section of households over a period longer than one week would have been taken.

We are greatly indebted to Mr E. N. Omaboe, the Government Statistician, and to Mr N. K. Adyanthaya, I.L.O. Expert in the Central Bureau of Statistics, for their kind assistance and advice in making available data for cross-section analysis. The Government Statistician had transcribed for us details of one week's expenditure by main groups. We obtained *actual* expenditure on clothing and durables and on certain sub-totals within Expenditure Group 1: Local Foods. Our figures for total expenditure covered Groups 1 to 12 of the enumeration schedules, together with consumption of own produce. Items 13 to 18 were omitted since they referred to the purchases of clothing and household durables during the past 12 months, to contributions in cash or kind and expenditure on rents, rates, water charges, etc. All these could not be transcribed in a simple operation from the weekly schedules.

The omission of the last item rents, rates, etc. represented 1.6 per cent. of cash expenditure (1 per cent. of total expenditure including own consumption) by 612 rural households with incomes under £600 per annum analysed by Mr Golding. For 378 urban/large town households the percentages were higher: 7.5 per cent. of cash expenditure and 7 per cent. of "total expenditure" during the survey period. In consequence, the proportion

¹ This appendix is drawn largely from the material reproduced in the Project's Ghana Study Paper No. 2, June 1963.

of total expenditure devoted to purchases of food, drink and tobacco is overstated, for the urban households especially. However, since previous household budget studies in Ghana had revealed considerable difficulties in measuring total income (and the 1961-62 National Household Survey is believed to be no exception in this respect) our definition of total expenditure may be regarded as a reasonable first approximation to disposable household income. Table C.1 compares average expenditure for the selected week (multiplied by 12) with Mr Golding's analysis on a rural/urban strata basis. Total expenditure includes own consumption (which is valued at local market prices obtaining throughout the survey period) and *actual* expenditure on clothes and durables. Rents, rates, etc. are excluded. The difference between Mr Golding's figures and the sample analysed by us is much greater for total expenditure than for total food or total food, drink and tobacco. The discrepancy in the rural strata is smaller than in the urban. This reflects the larger number of household in the former strata. This summary table does not show the much larger discrepancies between the "A" and "B" samples which arise when expenditure is analysed by region (see Tables S.17 (a) and (b)).

TABLE C.1
Summary of Average Household Expenditure by Strata

	Rural		Urban		National	
	"A"	"B"	"A"	"B"	"A"	"B"
No. of households . . .	612	102	378	63	990	165
Persons per household . . .	4.58	4.46	4.08	3.40	4.39	4.06
Total expenditure . . .	778.5	773.6	940.5	859.9	840.4	806.6
Own consumption . . .	235.5	221.5	72.7	64.9	173.3	161.7
Local food . . .	218.5	234.8	382.5	377.0	281.1	289.1
Imported food . . .	20.6	16.6	46.8	36.7	30.6	24.3
Prepared meals . . .	12.7	7.0	62.8	46.8	31.8	22.2
Total food . . .	487.3	480.0	564.8	525.6	516.9	497.4
Drink and tobacco . . .	46.3	41.8	49.8	44.8	47.6	43.0
Other non-food items . . .	244.9	251.8	325.9	289.5	275.9	266.2
Total food as percentage of total expenditure	62.6	62.0	60.1	61.1	61.5	61.7

Column "A." One-third sub-sample of 990 households analysed and discussed in P. T. F. Golding, *An Enquiry into Household Expenditure and Consumption and Sale of Household Produce in Ghana*.

Column "B." 165 households selected from 990 households in "A." Expenditure for one week multiplied by twelve.

2. Household and *Per Capita* Expenditure on Food

Table C.2 shows average expenditure on food, drink and tobacco by total household and *per capita* expenditure classes. Consumption of own produce is included in local foods, total food and total food, drink and tobacco and is added to total cash expenditure to obtain some measure of disposable income. Imported food includes bread made from imported wheat flour but not rice which, according to the N.H.S. schedule, is included in local food. Own consumption, all shown under food, includes traditional brews, salt, firewood and charcoal. Thus cash expenditure on drink cannot represent total consumption and may well be under-reported for various reasons, including the difficulty of defining meals taken away from the household. We obtained information on the size and composition of households but have not attempted to weight children to derive consumer units.

For the first time in analysing expenditure data derived from sample surveys of household budgets in Ghana, own consumption of produce, *i.e.*, subsistence output of food, has been

TABLE C.2
Average Household and *Per Capita* Expenditure by Expenditure Class

Household Analysis	0-25		25-40		40-60		60-80		80-120		120 and over		shillings per week		
	R.	U.	R.	U.	R.	U.	R.	U.	R.	U.	R.	U.	Rural	Urban	Total
No. of households	12	7	21	11	28	17	18	11	13	6	10	11	102	63	165
Total expenditure	16.9	15.7	32.9	30.8	49.2	49.1	71.8	69.6	95.0	96.5	178.2	171.4	64.5	71.6	67.2
Local food	11.6	10.3	25.6	19.0	37.5	27.9	42.9	44.9	56.9	55.1	62.8	67.3	37.9	36.8	37.5
Imported food	...	...	0.4	1.6	1.0	3.1	2.0	3.4	2.6	4.0	3.4	5.7	1.4	3.1	2.0
Prepared meals	...	1.1	0.2	3.9	1.1	5.1	0.5	5.2	0.6	3.0	0.9	3.1	0.6	3.9	1.8
Total food	11.6	11.3	26.2	24.6	39.6	36.0	45.4	53.4	60.0	62.1	67.1	76.1	39.9	43.8	41.4
Drink	1.3	0.7	0.9	1.2	2.0	2.2	1.8	1.7	2.7	4.6	8.9	2.4	2.4	2.0	2.3
Tobacco	0.5	1.0	0.7	0.2	0.8	1.8	1.2	1.1	1.5	3.0	2.8	3.5	1.1	1.7	1.3
Per Capita Analysis	0-5		5-10		10-15		15-20		20-35		35 and over		All Classes		
No. of households	71	24	118	93	98	89	73	39	62	24	23	30	445	299	744
Total expenditure	3.5	3.8	8.0	7.1	11.9	12.8	17.0	18.0	27.2	22.7	63.3	57.0	15.1	16.2	15.6
Local food	2.7	3.3	6.8	5.0	8.2	8.5	10.2	11.8	16.9	11.5	29.1	20.5	9.6	8.8	9.3
Imported food	...	...	0.1	0.4	0.2	0.3	0.7	0.7	1.0	1.7	2.1	3.0	0.4	0.8	0.6
Prepared meals	...	...	...	0.2	0.1	0.4	0.1	0.5	0.3	3.3	2.1	6.8	0.2	1.2	0.6
Total food	2.7	3.3	6.9	5.5	8.4	9.2	10.6	13.0	18.2	16.4	33.3	30.2	10.1	10.8	10.4
Drink	0.2	...	0.2	0.1	0.6	0.4	0.5	0.3	0.9	1.1	2.5	2.9	0.6	0.6	0.6
Tobacco	0.2	...	0.1	0.1	0.3	0.2	0.3	1.0	0.5	0.3	0.9	1.8	0.3	0.4	0.3

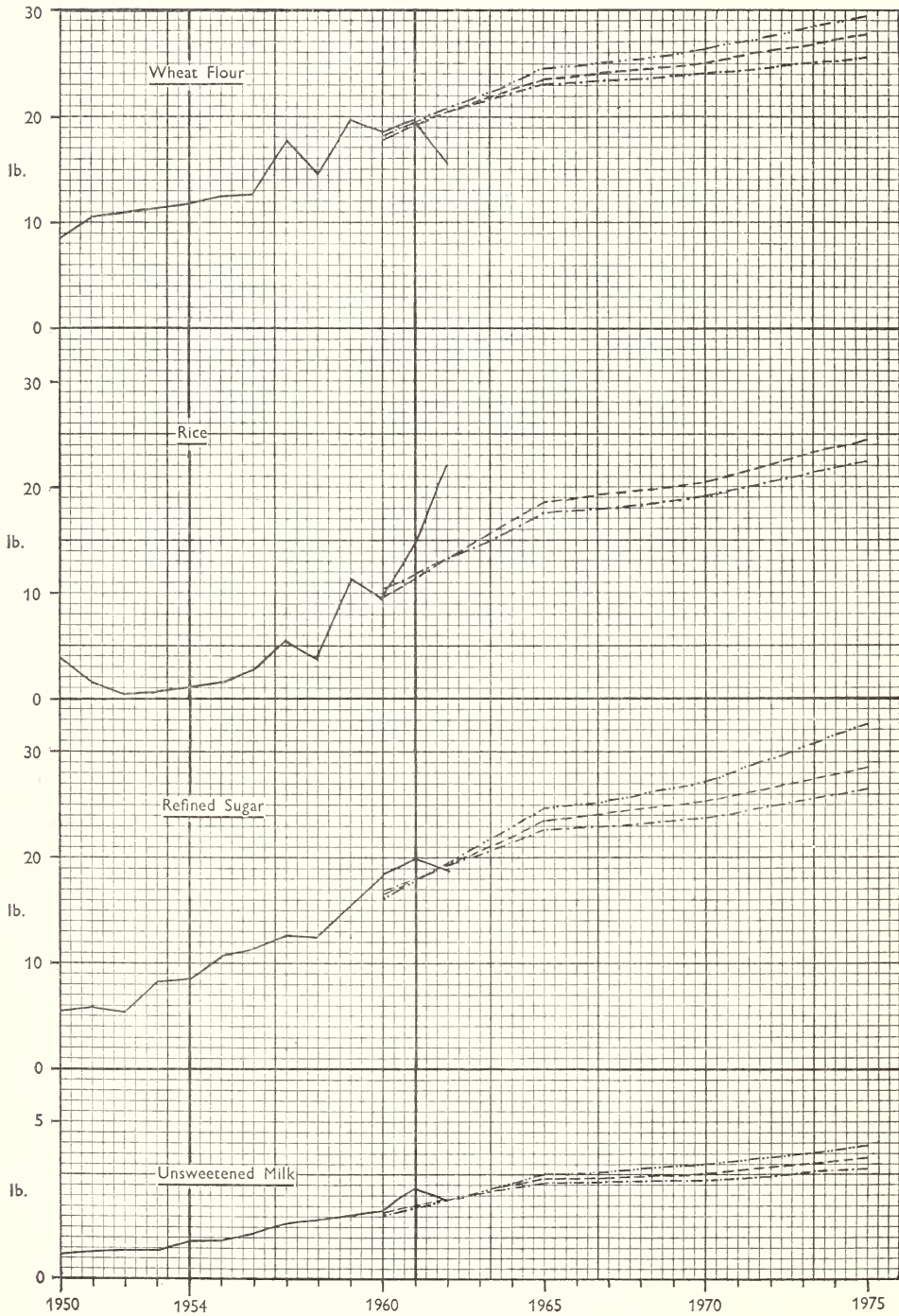
included in both total expenditure and expenditure on local food. If rural households had purchased as high a proportion of their food requirements as urban households, a larger share of their total expenditure would probably have been devoted to food. Table C.2 shows that the proportions were almost identical for rural and urban households, 61·8 per cent. and 61·1 per cent., respectively. On the other hand, urban households spent twice as much on imported food, probably a reflection of relative prices rather than higher average incomes. Both rural and urban households in the highest expenditure class devoted a smaller proportion of total expenditure to imported items than the average for the respective rural and urban strata. On a *per capita* basis, however, both rural and urban consumers in the highest expenditure class allocated a higher share of total expenditure to imported food than the average for all consumers in the respective strata.

We have calculated relationships between expenditure on selected items and levels of total expenditure as linear functions by the method of least squares. Table S.16 summarises the results on the basis of (a) household and (b) *per capita* total expenditure for the cross-section data. There was a strong measure of association between total expenditure and consumption of selected items, except for drink and tobacco (urban household analysis) and prepared meals (rural and urban households). Demand for imported food, drink and tobacco was found to be more elastic than demand for local food, with coefficients greater than unity for the sample as a whole on a *per capita* basis.

The results of our analysis of a restricted sample must, however, be regarded as provisional, pending publication of further data drawn from the wider 3,000-household sample. For purposes of this report we have had to rely upon relationships estimated from the restricted sample, without distinguishing rural and urban strata. Table S.19 summarises estimates obtained using semi-log and double-log in addition to the linear model.

CHART I

Projection of *Per Capita* Demand for Selected Imported Foods



Apparent consumption, 1950-62 ———: projections, 1960-75, using demand models;
 (a) linear ---, (b) semi-log -.- and (c) double-log -.-.-.

SUPPLEMENTARY TABLES

TABLE S.1

Expenditure on Gross Domestic and National Product, 1950-62

	(a) At current market prices												£m.
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961		1962
Personal consumption	146	186	194	210	212	252	262	291	279	317	339	393	405
Public consumption	11	13	18	18	21	26	30	33	35	39	48	55	63
Gross fixed investment	25	35	37	41	39	52	56	56	55	75	96	104	96
Increase in stocks	6	1	1	-3	2	...	5	-6	-1	10	11	-14	-6
Domestic expenditure	188	235	250	266	274	330	353	374	368	441	494	538	558
External balance	+26	+27	+17	+12	+45	+4	-8	-11	+15	-6	-25	-41	-23
Expenditure on G.D.P.	214	262	267	278	319	334	345	363	383	435	469	497	535
Expenditure on G.N.P.	209	257	263	275	317	332	343	360	381	432	464	490	530
(b) At constant (1960) prices													
Personal consumption	193	202	209	229	233	276	275	300	292	318	339	364	335
Public consumption	17	18	23	24	24	32	33	36	38	42	48	53	60
Domestic investment	41	35	37	41	49	64	69	56	59	91	107	85	86
Domestic expenditure	251	255	269	294	306	372	377	392	389	451	494	502	481
External balance	+30	+26	+16	+12	+48	+4	-9	-11	+16	-6	-25	-41	-24
Expenditure on G.D.P.	281	281	285	306	354	376	368	381	405	445	469	461	457
Trading gain	-3	+5	-1	+2	+44	+21	-8	-7	+23	+12	...	-15	-35
Real domestic product	284	276	286	304	310	355	376	388	382	433	469	476	492

Source: (a) At current prices, 1955-61, *Economic Survey*, 1962; (b) At constant prices (and at current prices, 1950-54), see Chapter II, Section C.

TABLE S.2

Official Estimates of Expenditure on Personal Consumption, 1955, 1960-62
at current market prices

	1955		1960		1961		1962	
	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.
Food, local.	109	43	139	41	165	42	181	45
Food, imported	13	5	20	6	25	6	26	6
All food	122	48	159	47	190	48	207	51
Beverages and tobacco	14	6	18	5	21	5	20	5
Clothing and other textiles	43	17	55	16	64	16	54	13
Other non-durable goods	10	4	15	4	16	4	15	4
Durable goods	9	4	10	3	12	3	13	3
Rent, fuel and light	23	9	33	10	36	9	38	9
Transport and communications	11	4	16	5	17	5	18	5
Miscellaneous other	20	8	33	10	37	10	40	10
Total personal consumption	252	100	339	100	393	100	405	100

Source: *Economic Survey*, 1962.

TABLE S.3

Gross Domestic Fixed Capital Formation by Type of Asset, 1955, 1960-62
at current market prices

	1955		1960		1961		1962	
	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.
Buildings	27	51.9	44	45.8	50	48.1	53	55.2
Other construction	12	23.1	17	17.7	20	19.2	21	21.9
Transport equipment	6	11.5	17	17.7	20	19.2	10	10.4
Other machinery, etc.	7	13.5	18	18.8	14	13.5	12	12.5
Total	52	100.0	96	100.0	104	100.0	96	100.0

Source: *Economic Survey*, 1962.

TABLE S.4

Estimated Domestic Product and Private Consumption per Head, 1950-61

	£ per annum											
	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Population (mid-year) '000	5,415	5,515	5,625	5,735	5,855	5,985	6,125	6,277	6,434	6,598	6,770	6,950
G.D.P. per head—												
(a) at current market prices	39.5	47.5	47.5	48.5	54.5	56.0	56.5	58.0	59.8	66.1	69.4	71.7
(b) at 1960 prices (real product)	52.4	50.0	50.9	53.0	52.9	59.3	61.4	61.8	59.4	65.6	69.4	68.8
(c) at 1960 prices (real income)	51.9	51.0	50.7	53.3	60.5	62.8	60.1	60.7	62.9	67.4	69.4	66.3
Personal consumption per head—												
(d) at 1960 prices	35.6	36.6	37.2	39.9	39.8	46.1	44.9	47.8	45.4	48.2	50.2	52.5
(e) at current prices	27.0	33.7	34.5	36.6	36.2	42.3	42.9	46.5	43.7	48.2	50.2	56.7

Source: Aggregate estimates shown in Table S.1 divided by mid-year population calculated on High Mortality Assumptions (see Table I.2). Project Team's estimates of aggregate G.D.P. for 1950-54; later years based mainly upon official sources, e.g., *Economic Survey*, 1962.

Annual growth rates of real income per head, etc. are shown in Table II.5.

TABLE S.5
Composition and Value of Ghana Exports, 1949-62

S.I.T.C.	Annual Average		1949-53		1954-58		1959-62	
	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.
<i>Section 0—</i>								
<i>Food and live animals</i>	53.36	68.8	63.83	65.3	71.42	63.2		
of which—								
Cocoa	52.62	67.9	63.32	64.7	69.72	61.7		
(a) Cocoa beans	51.52	...	62.88	...	67.88	...		
(b) Cocoa butter	0.51	...	0.15	...	0.82	...		
(c) Other cocoa products	0.59	...	0.29	...	1.02	...		
Coffee	0.01	...	0.16	...	0.33	...		
Kola nuts	0.38	...	0.25	...	1.11	...		
<i>Section 2—</i>								
<i>Crude materials</i>	15.59	20.1	24.37	24.9	30.32	26.8		
of which—								
Natural rubber	0.04	...	0.04	...	0.06	...		
Oil seeds, nuts and kernels	0.36	...	0.56	...	0.30	...		
Timber	4.20	5.4	9.02	9.2	14.11	12.5		
(a) Logs	2.59	...	4.96	...	8.31	...		
(b) Sawn timber	1.62	...	4.06	...	5.80	...		
Minerals	10.85	14.0	14.43	14.8	14.95	13.2		
(a) Bauxite	0.21	...	0.36	...	0.52	...		
(b) Manganese	6.66	...	7.00	...	6.17	...		
(c) Diamonds	3.98	...	7.07	...	8.27	...		
<i>Section 6—</i>								
<i>Manufactured goods</i>	0.08	0.1	0.18	0.2	0.48	0.4		
of which—								
Veneer sheets	0.04	...	0.02	...	0.04	...		
Plywood	0.01	...	0.12	...	0.41	...		
<i>Section X—</i>								
<i>Gold</i>	8.48	10.9	9.35	9.6	11.07	9.8		
<i>Other domestic exports</i>	0.01	...	0.09	0.1	0.15	0.1		
Total domestic exports	77.52	100.0	97.82	100.0	113.00	100.0		
<i>Exports of foreign produce</i>	1.61	...	0.79	...	1.88	...		
Total exports	79.13	...	98.60	...	114.88	...		

Source : *External Trade Statistics of Ghana.*

TABLE S.6
Principal Domestic Exports by Volume, Value and Unit Value, 1949-62

Quantity in Thousands. Value in £000	1949-53	1954-58	1959-62	1959	1960	1961	1962
1. Cocoa beans—							
Tons	242.0	222.4	333.6	250.2	302.8	405.4	421.2
£	51,521.8	62,882.4	67,882.5	68,799.2	66,433.9	69,274.2	67,022.8
£ per ton	212.90	282.77	203.5	274.90	219.40	170.90	159.12
2. Timber (logs)—							
Hop. ft.	7,107.1	15,818.4	23,583.2	27,964.1	28,907.2	21,480.1	15,981.3
£	2,589.3	4,963.0	8,308.6	7,969.5	10,418.4	9,052.1	5,794.4
£ per hop. ft.	0.36	0.31	0.35	0.27	0.36	0.42	0.36
3. Timber (sawn)—							
Cub. ft.	2,780.6	6,697.0	8,579.9	7,959.9	8,338.8	8,700.2	9,320.7
£	1,615.6	4,059.4	5,769.4	5,065.6	5,481.2	6,204.3	6,434.7
£ per cu. ft.	0.58	0.60	0.68	0.64	0.66	0.71	0.69
4. Bauxite—							
Tons	115.6	164.4	213.9	147.8	224.5	196.1	286.8
£	212.6	358.6	515.3	366.3	556.6	463.8	674.6
£ per ton	1.83	2.18	2.41	2.48	2.48	2.37	2.35
5. Manganese—							
Tons	759.6	558.1	483.7	526.7	546.7	385.1	476.4
£	6,657.0	7,000.1	6,171.4	6,777.6	6,383.2	6,025.0	5,500.6
£ per ton	8.76	12.54	12.76	12.87	11.68	15.65	11.55
6. Diamonds—							
Carats	1,625.6	2,626.5	3,144.9	3,116.6	3,282.0	2,854.1	3,327.5
£	3,983.8	7,073.2	8,267.7	8,659.2	9,838.6	7,148.5	7,424.3
£ per carat	2.45	2.69	2.63	2.78	3.00	2.50	2.23
7. Gold—							
Fine oz. troy	698.2	750.1	927.9	902.6	893.1	970.1	945.8
£	8,478.2	9,351.9	11,073.3	11,200.5	11,089.4	10,749.6	11,253.8
£ per f.o.t.	12.14	12.47	11.93	12.41	12.42	11.08	11.09

TABLE S.7
Direction of External Trade, 1949-62

Origin of Imports into Ghana and Destination of Exports	1949-53		1954-58		1959		1960		1961		1962	
	Imports	Total Exports	Imports	Domes- tic Exports	Imports	Domes- tic Exports	Imports	Domes- tic Exports	Imports	Domes- tic Exports	Imports	Domes- tic Exports
TOTAL—£m.	59.55	79.13	85.82	97.82	113.02	112.75	129.62	114.42	142.83	113.17	119.10	111.68
Per cent.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1. Sterling Area	Per cent. 62.1	Per cent. 45.0	Per cent. 51.8	Per cent. 42.6	Per cent. 46.4	Per cent. 34.7	Per cent. 41.7	Per cent. 36.9	Per cent. 40.9	Per cent. 32.9	Per cent. 38.0	Per cent. 35.5
of which—												
U.K.	56.3	41.1	45.5	37.9	40.1	30.7	36.7	31.5	36.3	29.0	33.9	32.0
South Africa	1.3	0.8	1.6	1.3	2.0	0.9	1.0	1.1	...	0.2	...	...
Other African Countries	0.5	0.4	1.1	0.2	1.2	0.6	0.7	0.7	0.6	0.9	0.5	0.7
2. E.E.C.	14.2	14.2	18.7	29.9	22.3	23.9	25.6	33.8	21.7	32.4	23.9	28.5
3. E.F.T.A. (excluding U.K.)	2.0	4.0	2.6	4.4	2.8	4.4	2.5	4.1	2.5	3.4	2.5	3.3
4. North America	6.7	30.7	5.3	18.5	7.1	19.8	7.2	16.0	10.1	25.0	9.8	20.1
of which—												
U.S.A.	5.9	29.0	4.3	17.9	5.5	19.0	5.7	15.3	8.3	23.8	7.9	18.6
Eastern Europe and China	1.4	3.9	2.3	4.1	3.3	2.1	4.3	7.3	5.4	3.3	7.2	8.5
of which—												
U.S.S.R. . . . .	...	3.7	...	4.1	...	1.7	0.4	6.4	1.5	2.7	1.5	3.9
6. African Countries n.e.s.	4.1	1.4	4.0	0.4	3.1	0.4	4.2	0.7	5.7	0.4	6.0	1.2
7. Rest of World	9.5	0.8	13.4	0.1	13.6	4.7	13.1	2.2	12.3	2.6	11.7	2.9
of which—												
Japan	5.1	...	9.4	...	7.6	0.5	7.7	0.8	7.7	1.4	6.5	2.2
8. Parcel Post	n.a.	n.a.	1.9	...	1.4	...	1.4	...	1.4	...	0.9	...

TABLE S.8
Commodity Composition of Domestic Exports to Selected Countries in 1958 and 1962

	Total Domestic Exports 1958 1962		Cocoa		Timber				Manganese 1958 1962		Bauxite 1958 1962		Diamonds 1958 1962		Gold 1958 1962		Other Exports 1958 1962			
	£m.	Per cent.	Beans		Other Products		Logs		Sawn		Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
			Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.										
1. Sterling Area	42.63	39.61	37.3	3.0	3.3	3.0	3.3	3.0	8.3	11.1	6.1	2.9	1.1	1.5	16.3	13.4	24.9	28.4	2.5	5.4
of which																				
U.K.	37.56	35.74	32.3	22.2	0.2	9.1	3.7	3.3	7.3	11.3	6.2	2.2	1.3	1.6	18.5	14.8	28.2	31.5	2.4	4.0
South Africa	1.29	0.75	50.7	...	0.2	...	0.4	...	47.6	...	...	...	...	...	...	...	...	...	1.5	...
Other African countries	0.35	31.86	80.0	75.1	0.5	0.1	12.3	12.8	1.6	2.8	0.6	1.6	0.1	0.2	4.4	6.6	...	...	57.0	0.8
of which																				
West Germany	16.84	12.99	91.3	91.7	...	...	7.4	6.2	0.4	1.2	0.3	0.2	0.2	0.2	...	...	...	...	0.4	0.5
Italy	4.53	5.56	58.9	47.4	...	...	34.4	42.7	5.4	1.5	...	...	...	...	...	...	...	...	1.4	1.8
Netherlands	10.12	11.40	89.7	73.0	1.3	0.2	12.9	12.4	1.1	2.9	...	...	...	0.4	0.4	14.0	...	...	0.7	0.4
3. E.F.T.A. (excluding U.K.)	4.73	3.46	69.7	63.9	...	...	3.2	3.2	4.7	7.5	21.5	23.6	...	...	...	...	...	...	0.9	1.8
4. North America	20.63	22.43	72.8	83.2	0.2	1.5	1.2	0.8	1.6	2.7	23.3	11.2	...	0.1	0.9	...	...	...	...	0.5
of which																				
U.S.A.	20.02	20.73	72.2	84.6	0.2	0.7	1.2	0.8	1.5	2.4	24.0	10.8	...	...	0.9	0.1	...	...	...	0.7
of which																				
Europe and China	0.38	9.53	100.0	99.1	...	...	...	0.4	...	...	...	...	...	...	...	...	...	...	...	0.4
of which																				
U.S.S.R.	0.38	4.43	100.0	99.9	...	...	...	0.1	...	...	...	...	...	...	...	...	...	...	...	...
African countries n.e.s.	0.58	1.29	...	...	...	...	1.6	0.3	15.9	11.7	...	...	...	...	...	...	...	...	...	82.5
Rest of World	0.16	3.30	...	72.5	...	1.4	88.2	5.9	5.0	3.9	...	13.4	...	...	...	...	...	...	...	6.8
of which																				
Japan	...	2.46	...	83.2	...	1.8	100.0	0.8	...	...	...	8.3	...	...	...	0.1	...	...	...	...
Total Domestic Exports	103.80	111.68	60.0	60.0	0.2	3.3	6.0	5.2	4.6	5.8	8.3	4.9	0.5	0.6	8.3	6.7	10.2	10.1	...	5.8

TABLE S.9
Structure of Total Imports by Commodity Groups, 1950-62

S.I.T.C.	Annual Average		1950-53		1954-58		1959-62	
	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.	£m.	Per cent.
0. Food and live animals	9.9	15.6	14.1	16.4	22.4	17.8	22.4	17.8
1. Beverages and tobacco	3.6	5.6	4.0	4.7	3.2	2.5	3.2	2.5
2. Crude materials	0.1	0.1	0.3	0.3	0.6	0.5	0.6	0.5
3. Mineral fuels	4.3	6.9	5.7	6.6	6.7	5.3	6.7	5.3
4. Animal and vegetable oils and fats	0.1	0.1	0.1	0.1	0.3	0.2	0.3	0.2
5. Chemicals	3.6	5.7	6.0	7.0	9.6	7.6	9.6	7.6
6. Manufactured goods classified by materials	25.6	40.6	31.7	36.9	40.4	32.0	40.4	32.0
(a) Textiles	16.5	26.1	17.4	20.3	19.6	15.5	19.6	15.5
(b) Other	9.1	14.4	14.3	16.7	20.8	16.4	20.8	16.4
7. Machinery and transport equipment	10.5	16.7	15.2	17.7	29.6	23.5	29.6	23.5
8. Miscellaneous manufactured articles	5.4	8.6	7.0	8.2	11.2	8.9	11.2	8.9
9. Miscellaneous commodities n.e.s.	...	...	1.6	1.9	1.7	1.3	1.7	1.3
X. Transactions in gold and monetary items	...	...	...	...	0.5	0.4	0.5	0.4
Total Imports	63.1	100.0	85.8	100.0	126.1	100.0	126.1	100.0

TABLE S.10
Origin of Imports by Commodity Groups in 1958 and 1962

S.I.T.C.	Total Imports		Section 0		Section 1		Section 5		Section 6		Section 7		Section 8	
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1 Sterling Area	50.55	38.41	32.4	17.4	49.7	44.8	83.0	77.0	46.3	37.0	69.1	48.2	59.5	47.3
of which—														
U.K.	44.07	34.19	23.4	15.0	38.6	13.8	80.9	76.0	41.2	30.7	66.9	47.8	48.6	39.7
South Africa	1.85	...	4.5	...	0.2	...	1.6	...	1.0	...	2.1	...	2.5	...
Other African Countries	1.24	0.52	2.2	2.7	3.9	5.1	0.1	0.3	0.2	0.1	...	0.1	0.2	0.2
2. E.E.C.	19.39	24.11	12.3	12.9	38.1	19.0	12.8	15.6	24.2	30.9	19.3	27.0	31.1	16.9
of which—														
Germany	5.81	5.95	0.1	0.5	3.6	4.9	6.0	6.7	6.1	5.4	12.4	12.5	8.9	7.3
Italy	1.53	7.31	1.4	1.7	0.2	0.4	0.2	3.2	0.9	9.1	0.8	9.4	0.7	5.2
Netherlands	8.58	7.88	8.7	7.4	32.1	10.8	0.9	3.5	13.7	13.8	2.0	2.3	2.9	2.6
3. E.F.T.A. (excluding U.K.)	2.65	2.54	5.9	1.9	1.9	2.4	0.4	1.5	2.6	3.7	1.0	2.2	4.8	3.3
4. North America	6.03	9.90	18.0	28.7	9.5	30.1	1.8	2.1	0.2	1.1	9.9	11.9	3.2	2.4
of which—														
U.S.A.	5.08	7.96	13.7	19.4	9.5	30.1	1.3	2.0	0.2	1.1	9.0	11.5	3.2	2.3
5. Eastern Europe and China	2.96	7.23	0.9	4.2	0.4	1.2	1.6	2.8	5.5	12.6	0.1	5.0	8.6	10.2
of which—														
U.S.S.R.	...	1.55	...	0.5	...	0.3	...	0.8	...	2.3	...	2.5	...	0.3
6. African countries n.e.s.	3.66	6.10	19.0	28.5	0.1	0.1	0.1	...	0.1	0.9	...	...	1.2	0.5
of which—														
Upper Volta	1.96	2.87	11.2	14.5	...	...	...	...	...	0.1	...	...	...	...
7. Rest of World	14.76	11.71	11.5	6.4	0.3	2.4	0.3	1.0	21.1	13.8	0.6	5.7	9.6	19.4
of which—														
Japan	8.16	6.56	2.1	1.9	...	...	0.1	0.6	20.1	12.2	0.3	2.5	8.7	18.1
Total Imports (£m.)*	83.10	117.97	14.47	23.14	3.73	1.33	6.61	9.68	29.02	40.54	15.18	25.89	6.95	8.89

* Total Imports excluding parcel post.

TABLE S.11

Composition of Imports from Selected Countries in 1958 and 1962

S.I.T.C.	Total Imports*		Section 0 Food and Live Animals		Section 1 Beverages and Tobacco		Section 5 Chemicals		Section 6 Manufactured Goods		Section 7 Machinery		Section 8 Miscellaneous Manufactured Articles		Other Imports		
	1958	1962	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	
1. Sterling Area	42.01	45.31	11.2	8.9	4.4	1.3	13.1	16.4	32.0	33.1	25.0	27.6	9.8	9.2	4.5	3.5	
of which—																	
U.K.	36.62	40.34	9.2	8.6	3.9	0.5	14.6	18.2	32.7	30.9	27.7	30.7	9.2	8.7	2.6	2.5	
South Africa	1.52	...	42.6	...	0.5	...	7.0	...	18.0	...	20.2	...	11.1	...	0.6	...	
Other African countries	1.03	0.62	30.5	27.4	14.3	11.0	0.7	5.4	4.6	9.7	0.1	6.2	17.8	2.4	32.0	37.9	
2. E.E.C.	16.11	28.44	11.0	10.5	8.8	0.9	5.3	5.3	43.6	43.7	18.2	24.6	5.7	5.2	7.4	9.8	
of which—																	
West Germany	4.83	7.02	0.4	1.6	2.8	0.9	8.2	9.3	36.7	30.9	38.9	46.0	12.8	9.1	0.2	2.2	
Italy	1.27	8.63	15.7	4.7	0.7	0.1	0.9	3.7	20.2	42.6	9.0	28.2	3.6	5.3	50.0	15.6	
Netherlands	7.13	9.29	17.6	18.5	16.8	1.5	0.8	3.6	55.8	60.3	4.3	6.5	2.9	2.5	1.8	7.1	
3. E.F.T.A. (excluding U.K.)	2.21	3.00	38.7	14.8	3.2	1.1	1.2	4.7	34.8	49.6	6.9	19.2	15.1	9.7	0.1	0.9	
4. North America	5.02	11.68	52.1	56.9	7.1	3.4	2.3	1.7	1.3	4.0	30.0	26.5	4.5	1.8	2.7	5.7	
of which—																	
U.S.A.	4.22	9.39	47.0	47.8	8.4	4.3	2.0	2.0	1.5	4.9	32.5	31.8	5.3	2.2	3.3	7.1	
Eastern Europe and China	2.46	8.53	5.2	11.6	0.6	0.2	4.3	3.1	64.5	59.6	0.4	15.1	24.4	10.6	0.6	0.2	
of which—																	
U.S.S.R.	0.48	1.83	75.0	6.6	...	0.2	2.1	4.4	...	51.3	...	35.8	10.4	1.3	14.6	0.4	
6. African countries n.e.s.	3.04	7.20	90.1	91.6	0.1	...	0.1	...	1.0	5.2	...	...	2.6	0.6	6.1	2.6
of which—																	
Upper Volta	1.63	3.39	99.7	98.9	...	...	...	...	...	0.8	...	...	...	...	0.1	0.3
7. Rest of World	12.40	13.92	13.5	10.8	0.1	0.2	0.2	0.8	50.1	41.6	1.0	10.4	...	5.5	29.6	23.7	
of which—																	
Japan	6.78	7.74	4.4	5.8	...	...	0.1	0.7	86.1	64.0	0.6	8.2	8.9	21.3	...	...
Total imports	83.10	117.97	17.4	19.6	4.5	1.1	8.0	8.2	34.9	34.4	18.5	22.0	8.4	7.5	8.4	7.3	

* Total Imports excluding parcel post.

TABLE S.12

Changes in Rates of Import Duty on Selected Products: Food, Drink and Tobacco

(Shillings and pence)

<i>Ghana Fiscal Years</i>	Unit	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64
Rice	lb.	...	...	...	...	3d.	3d.
Wheaten products—							
Wheat flour	lb.	...	...	...	2d.	5d.	5d.
Cabin biscuits	lb.	3d.	3d.	6d.	1s.	1s. 6d.	1s. 6d.
Biscuits, bread, cake	lb.	9d.	9d.	1s.	2s.	2s. 6d.	3s.
Sugar	lb.	...	...	...	3d.	3d.	3d.
Milk products—							
Milk and cream	cwt.	...	...	...	...	20s.	20s.
Butter and cheese	lb.	...	...	...	...	1s.	1s.
Meat (all kinds)	lb.	...	...	...	3d.	6d.	6d.
Fish—							
Chilled/frozen	lb.	10 per cent.	10 per cent.	10 per cent.	4d.	6d.	6d.
Salted/canned	lb.	...	...	...	2d.	3d.	6d.
Vegetables and fruit—							
Potatoes	100 lbs.	3s. 6d.	3s. 6d.	3s. 6d.	4s.	6s.	6s.
Dried fruit	lb.	...	...	...	1s.	2s.	2s.
Vegetables (fresh, dried, canned, etc)	lb.	...	...	...	6d.	1s.	1s.
Coffee and tea	lb.	6d.	6d.	6d.	1s.	2s.	2s.
Salt	lb.	...	...	...	3d.	3d.	3d.
Beverages—							
Ale, beer, cider, etc.	gal.	5s.	6s.	6s.	13s. 6d.	20s.	25s.
Spirits	gal.	107s. 6d.	107s. 6d.	107s. 6d.	227s. 6d.	227s. 6d.	227s. 6d.
Sparkling wine	gal.	42s.	60s.	60s.	120s.	120s.	120s.
Still wine (1)	gal.	11s.	15s.	15s.	30s.	30s.	30s.
Still wine (2)	gal.	25s.	29s.	29s.	58s.	58s.	58s.
Tobacco—							
Unmanufactured	lb.	9s. 3d.	9s. 3d.	9s. 3d.	11s. 3d.	11s. 3d.	11s. 3d.
Cigars	lb.	40s.	40s.	40s.	60s.	80s.	80s.
Cigarettes	lb.	37s. 6d.	37s. 6d.	37s. 6d.	56s. 6d.	75s.	75s.
Other unmanufactured tobacco	lb.	30s.	30s.	30s.	40s.	60s.	60s.

(1) Less than 14·2 per cent. alcohol.

(2) Greater than 14·2 per cent. but less than 24·5 per cent.

TABLE S.13

Gross Customs Revenue from Imports

<i>Annual Rate: Calendar Years</i>	1949-53	1954-58	1959-62	1959	1960	1961	1962
Gross Import Revenue (£m.)	9·0	14·9	25·1	17·4	22·1	30·2	30·5
Food	0·2	0·3	2·0	0·4	0·5	2·2	4·7
Beverages	1·3	2·5	2·3	2·7	3·0	2·8	1·0
Tobacco	2·6	2·8	1·8	1·6	2·1	2·1	1·5
Other	4·9	9·3	19·0	12·7	16·7	23·2	23·3
Total Imports (£m.)	59·6	85·8	126·1	113·0	129·6	142·8	119·1
Food	9·0	14·1	22·4	19·1	21·0	26·2	23·1
Beverages	1·9	2·3	2·0	2·5	2·7	2·3	0·6
Tobacco	1·5	1·7	1·2	1·8	1·1	1·2	0·7
Other	47·2	67·7	100·5	89·6	104·8	113·1	94·7
Import Revenue as per cent. of Imports	15·1	17·3	19·9	15·4	17·1	21·2	25·6
Food	1·8	2·1	8·7	2·3	2·4	8·3	20·1
Beverages	69·4	110·0	117·0	108·6	110·1	119·4	156·5
Tobacco	171·9	162·0	151·2	86·8	187·4	175·6	220·0
Other	10·4	13·7	18·9	14·2	15·8	20·5	24·6

TABLE S.14
Description of Household Surveys undertaken in Ghana, 1953-62

Date and Length of Survey	Location	Scope and Characteristics	Budgets Analysed	Persons per Family	Average Expenditure (Actual)	Per cent. of Expenditure on :		
						Food	Drink and Tobacco	Other
1. 1953 May-June (30 days)	Accra	<i>Urban</i> . Wage earning heads of households with £50-£180 per ann. and not more than one additional income. Excludes single persons or families exceeding eight. Only cash expenditure recorded.	Number 453	Number 4.24	Shillings per month 304.2	59.9	6.3	33.8
2. 1954 Aug.-Sept. (30 days)	Akuse (Eastern Region)	<i>Urban</i> . Sample drawn from all families. Family composition and cash expenditure as in 1 above.	163	4.62	208*	57.2	6.6	36.2
3. 1955 Feb.-Mar. (30 days)	Sekondi-Takoradi (Western Region)	<i>Urban</i> . Wage earning heads of households with £60-£180 per ann. and not more than two additional non-wage incomes. Family composition and cash expenditure as in 1 above.	546	3.98	218.6	65.5	5.8	28.7
4. 1955 Mar.-Apr. (30 days)	Kumasi (Ashanti Region)	<i>Urban</i> . Families with at least one wage income within £60-£180 per ann. and not more than two other additional sources. Family composition and cash expenditure as in 1 above.	570	4.15	303.0	53.4	3.9	42.7
5. 1955-56 Oct.-Dec. (30 days)	Oda-Swedru- Asamankese (Eastern Region)	<i>Rural</i> . Mainly cocoa-producing families. Excludes families of 15 + and also those without at least one adult male and female. Subsistence production not analysed.	1080	7.06	266.8	35.9	7.0	57.1
6. 1956-57 Oct.-Mar. (30 days)	Ashanti (Ashanti and Brong-Ahafo Regions) Legon	<i>Rural</i> . Cocoa-producing families. Family composition and subsistence production as in 5 above.	1620	7.26	266.4	32.7	10.3	57.0
7. 1962 Feb.-Mar. (28 days)	Accra	Sample from junior staff of the University. Only cash expenditure was recorded.	70	4.00	649.3	41.8	7.4	50.8
8. 1962 Mar.-May (15 days)	Accra	<i>Urban</i> . Employees of large private enterprises earning a gross salary between £350-£1,000 per ann. Excludes single persons. Additional incomes in cash and kind recorded.	128	6.27	1053.4†	52.7	8.5	38.8
9. 1961-62 Aug.-Nov., '61 (12 weeks) Feb.-Mar., '62 (6 weeks)	National Household Survey	<i>Urban, Rural, All Ghana</i> . Analysis of 990 families with a gross annual income not exceeding £600 per ann., drawn from a stratified sample of 3,000 households. Own produce included.	378 612 990	4.08 4.54 4.39	286.6 257.9 268.9	61.1 62.0 61.7	5.2 5.4 5.3	33.7 32.6 33.0

* ** Normal ** monthly expenditure.

† Average monthly income.

Sources: 1-6, A summary of official household surveys is given in "Field Survey Work in the Ghana Statistics Office," *Central Bureau of Statistics, Statistical and Economic Papers*, No. 8, January 1961. Reports of the individual surveys are contained in earlier *Statistical and Economic Papers, i.e.*, Accra, 1953, No. 2; Akusi, 1954, No. 3; Sekondi-Takoradi, 1955, No. 4; Kumasi, 1955, No. 5; Oda-Swedru-Asamankese, 1955-56, No. 6; Ashanti, 1956-57, No. 7; Lawson, Rowena M. "The Index of Consumer Prices relating to Expenditure Patterns of Junior Staff, University of Ghana." *Economic Bulletin (Accra)*, vol. 6, No. 3, 1962. 8, Economic Research Unit. "Survey of Food Expenditure by Middle Income Households in Accra, 1962." *Edinburgh University, Ghana Study Paper No. 1*, December 1962. 9, Golding, P.T.F. "An Enquiry into Household Expenditure and Consumption and Sale of Household Produce in Ghana." *Economic Bulletin (Accra)*, vol. 6, No. 4, 1964.

TABLE 15 (a)
Accra (1953): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)											
	50-139	140-179	180-219	220-259	260-299	300-339	340-379	380-419	420-459	460-499	500 and over	All Classes
Number of households	25	46	54	63	58	51	49	31	20	21	35	453
Average Size	3.20	3.20	3.61	4.12	3.91	4.24	4.78	4.74	4.90	5.14	6.09	4.24
Total Expenditure	119	156	186	239	268	306	341	376	409	518	685	304.2
Total food	75.3	98.4	113.7	147.5	164.7	194.9	201.1	229.9	243.9	257.8	393.5	182.1
as per cent. expenditure	63.3	63.1	61.1	61.7	61.5	63.7	59.0	61.2	59.6	49.8	57.5	59.9
Local food	59.6	77.7	89.2	114.4	128.4	146.3	158.8	179.6	183.6	198.7	298.8	140.7
as per cent. expenditure	50.1	49.8	48.0	47.9	48.0	47.8	46.6	47.8	44.9	38.4	43.6	46.3
Imported food	15.7	20.7	24.1	33.1	36.2	48.6	42.3	50.4	60.2	59.0	94.8	41.4
as per cent. expenditure	13.2	13.0	13.0	13.9	13.5	15.9	12.4	13.4	14.7	11.4	13.8	13.6
as per cent. total food	20.9	21.0	21.2	22.5	22.0	24.9	21.0	21.9	24.7	22.9	24.1	22.7
Drink and tobacco	8.2	5.7	11.4	14.7	12.4	15.0	19.1	21.7	29.8	58.1	51.3	19.2
as per cent. expenditure	6.2	3.6	6.1	6.2	4.6	4.9	5.6	5.8	7.3	11.2	7.5	6.3

TABLE 15 (b)
Sekondi-Takoradi (1955): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)											
	100-149	150-174	175-199	200-224	225-249	250-274	275-299	300-349	350-399	400-449	450 and over	All Classes
Number of households	39	47	63	86	68	79	51	60	24	19	10	546
Average size	2.87	3.23	3.13	3.72	3.61	4.26	4.46	4.97	4.71	5.59	5.90	3.98
Total Expenditure	123	147	167	196	212	224	249	278	324	363	413	218.6
Total food	86.1	99.7	116.8	125.9	139.1	150.8	167.3	182.7	202.2	214.2	221.4	143.3
as per cent. total expenditure	70.0	67.8	69.9	64.2	65.6	67.3	67.2	65.7	62.4	59.0	42.0	65.5
Local food	76.6	85.8	100.6	108.3	115.2	122.8	136.8	152.5	166.1	172.4	171.2	119.6
as per cent. total expenditure	61.8	58.4	60.2	55.2	54.3	54.8	55.0	54.9	51.3	47.5	41.4	54.7
Imported food	10.1	13.9	16.2	17.6	23.9	28.0	30.5	30.1	36.1	41.8	50.3	23.7
as per cent. total expenditure	8.2	9.5	9.7	9.0	11.3	12.5	12.2	10.8	11.2	11.5	12.2	10.8
as per cent. total food	11.7	14.0	14.0	14.0	17.2	18.6	18.2	16.3	17.9	19.5	22.7	16.5
Drink and tobacco	5.5	4.3	8.3	9.4	10.7	11.4	15.2	20.2	22.1	37.4	36.5	12.8
as per cent. total expenditure	4.5	2.9	5.0	4.8	5.0	5.1	6.1	7.3	6.8	10.3	8.8	5.8

TABLE S.15 (c)

Kumasi (1955): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)												
	Under 150	150-174	175-199	200-224	225-249	250-274	275-299	300-324	325-349	350-399	400-499	500 and over	All Classes
Number of households	47	38	38	60	66	68	53	49	35	46	42	28	570
Average size	2.83	3.30	3.43	3.72	3.80	4.38	4.62	3.78	4.46	5.09	5.38	6.07	4.15
Total expenditure	127	166	180	209	265	277	316	332	357	409	436	789	303.00
Total food	69.7	93.0	106.6	128.5	144.1	159.8	165.0	180.3	186.5	212.6	239.7	331.0	161.7
as per cent. expenditure	54.9	56.0	59.2	61.5	54.4	57.7	52.2	54.3	52.2	52.0	55.0	42.0	53.4
Local food	62.8	82.8	97.3	115.8	128.6	140.8	146.1	152.6	161.4	177.3	202.8	269.3	140.2
as per cent. expenditure	49.4	49.9	54.1	55.4	48.5	50.8	46.2	46.0	45.2	43.4	46.5	34.1	46.3
Imported food	6.9	10.2	9.3	12.6	15.5	19.0	19.0	27.7	25.1	35.3	36.9	61.7	21.5
as per cent. expenditure	5.5	6.2	5.2	6.0	5.9	6.9	6.0	8.3	7.0	8.6	8.5	7.8	7.1
as per cent. total food	9.9	11.0	8.7	9.8	10.8	11.9	11.5	15.4	13.4	16.6	15.4	18.6	13.3
Drink and Tobacco	1.4	2.9	5.6	6.5	7.1	6.3	9.2	14.4	16.6	19.7	27.0	46.5	11.9
as per cent. expenditure	1.1	1.8	3.1	3.1	2.7	2.3	2.9	4.3	4.7	4.8	6.2	5.9	3.9
as per cent. total food													

TABLE S.15 (d)

Oda-Swedru (1955-56): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)										
	Under 100	100-124	125-149	150-174	175-199	200-249	250-299	300-399	400-499	500 and over	All Classes
Number of households	28	57	57	51	52	50	30	20	8	7	360
Average size	5.67	6.25	7.28	7.17	6.99	7.18	8.02	8.06	8.44	7.67	7.27
Total expenditure	118.5	146.6	188.1	232.9	267.0	317.2	390.5	497.8	598.6	787.1	266.8
Total food	54.9	67.2	78.6	89.7	98.9	110.3	124.6	149.2	149.7	223.0	96.0
as per cent. expenditure	46.3	45.8	41.8	38.5	37.0	34.8	31.9	29.9	25.0	28.3	35.9
Local food	51.9	63.0	72.9	82.0	89.0	100.2	111.6	133.1	125.5	177.8	86.9
as per cent. expenditure	43.8	43.0	38.7	35.2	33.3	31.6	28.6	26.7	21.0	22.6	32.6
Imported food	3.0	4.0	5.5	7.5	9.6	9.5	12.4	14.7	22.4	35.7	8.6
as per cent. expenditure	2.5	2.7	2.9	3.2	3.6	3.0	3.2	3.0	3.7	4.5	3.2
as per cent. total food	5.5	6.0	7.0	8.4	9.7	8.6	10.0	9.9	15.0	16.0	8.9
Drink and tobacco	3.8	5.6	8.7	11.6	14.9	22.5	31.5	42.2	61.4	140.3	18.5
as per cent. expenditure	3.2	3.8	4.6	5.0	5.6	7.1	8.1	8.5	10.3	17.8	7.0

TABLE S.15 (e)

Ashanti (1956-57): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)										
	Under 100	100-149	150-199	200-249	250-299	300-349	350-399	400-449	450-499	500 and over	All Classes
Number of households	15	56	66	48	31	19	12	8	5	10	270
Average size	4.90	6.00	6.74	7.53	7.41	7.80	8.02	7.29	8.25	9.12	7.31
Total expenditure	109.4	156.8	191.5	239.2	297.7	360.1	438.9	511.9	587.3	903.9	266.4
Total food	40.8	58.1	76.5	92.2	102.4	113.7	127.6	127.4	129.6	165.8	87.2
as per cent. expenditure	37.3	37.0	39.9	38.5	34.4	31.6	29.1	24.9	22.0	18.3	32.7
Local food	38.4	54.3	71.1	83.7	91.6	101.8	111.4	110.2	116.4	138.2	78.8
as per cent. expenditure	35.1	34.6	37.1	35.0	30.8	28.3	25.4	21.5	19.8	15.2	29.6
Imported food	2.4	3.8	5.6	8.6	10.9	12.1	17.1	17.5	13.2	28.9	8.5
as per cent. expenditure	2.2	2.4	3.0	2.9	3.6	3.3	3.8	3.4	2.2	3.1	3.2
as per cent. total food	5.9	6.5	7.3	9.3	10.6	10.6	13.4	13.7	10.2	17.4	9.8
Drink and tobacco	5.4	11.5	16.9	19.1	29.6	41.0	45.3	68.2	75.9	146.6	27.4
as per cent. expenditure	4.9	7.3	8.8	8.0	9.9	11.4	10.3	13.3	12.9	16.2	10.3

TABLE S.15 (f)

Accra (1962): Household Expenditure on Food, Drink and Tobacco

	(Shillings per month)									
	500-699	700-899	900-1099	1100-1299	1300-1499	1500 and over	All Classes			
Number of households	18	29	26	28	16	11	128			
Average size	5.06	5.86	6.08	7.12	6.19	7.45	6.27			
Total recorded income	623.67	815.45	985.81	1173.43	1374.25	1770.91	1053.35			
Total food	489.04	539.00	508.81	600.41	581.32	662.33	555.16			
as per cent. income	78.4	66.1	51.6	51.2	42.3	37.4	52.7			
Local food	234.31	282.08	283.78	317.38	303.91	354.62	292.39			
as per cent. income	37.6	34.6	28.8	27.0	22.1	20.0	27.8			
Imported food	178.34	186.94	165.78	209.87	219.94	233.86	194.61			
as per cent. income	28.6	22.9	16.8	17.9	16.0	13.2...	18.5			
as per cent. total food	36.5	34.7	32.6	35.0	37.8	35.3	35.1			
Prepared meals	76.39	69.98	59.26	73.16	57.47	73.85	68.17			
as per cent. income	12.2	8.6	6.0	6.2	4.2	4.2	6.5			
Drink and tobacco	96.06	90.99	91.80	95.34	85.68	60.99	89.58			
as per cent. income	15.4	11.2	9.3	8.1	6.2	3.4	8.5			

TABLE S.16

Expenditure Elasticities and Correlation Coefficients from Budget Surveys, 1953-62

(a) Household Analysis

	Urban						Rural				All Ghana							
	Accra 1953		Kumasi 1955		Sekondi-Takoradi 1955		Accra 1962		N.H.S. 1961-62		Oda-Swedru 1955-56		Ashanti 1956-57		N.H.S. 1961-62		N.H.S. Urban and Rural 1961-62	
	c	R ²	c	R ²	c	R ²	c	R ²	c	R ²	c	R ²	c	R ²	c	R ²	c	R ²
Total Food, Drink and Tobacco	0.96	1.00	0.84	0.96	0.93	0.98	0.20	0.69	0.62	0.88	0.88	0.97	0.76	0.98	0.58	0.87	0.60	0.89
Total Food	0.90	0.98	0.77	0.95	0.84	0.97	0.27	0.78	0.63	0.89	0.64	0.98	0.49	0.60	0.53	0.80	0.58	0.86
Local food	0.88	0.98	0.69	0.94	0.75	0.95	0.33	0.83	0.69	0.91	0.56	0.96	0.43	0.80	0.52	0.81	0.58	0.87
Meat	0.87	0.89	0.72	0.88	0.83	0.83	0.15	0.14	0.78	0.73	...	...	...	...	0.41	0.72	...	...
Fish	0.78	0.89	0.71	0.88	0.64	0.83	0.69	0.06	0.78	0.73	...	...	...	...	...	...	...	...
Cassava (fresh)	0.85	0.92	0.72	0.96	0.63	0.73	0.09	0.04	0.85	0.97*	...	...	...	...	0.85	0.86*	...	...
Corn (dough)	0.99	0.97	0.63	0.64	1.25	0.69	0.05	0.00	0.70	0.85	1.24	0.93	1.06	0.95	1.06	0.90	0.91	0.93
Imported food	0.96	0.93	1.28	0.92	1.32	0.90	0.49	0.93	...	...	...	...	...	...	...	...	...	...
Bread	1.32	0.94	1.22	0.93	1.27	0.31	0.33	0.52	...	...	...	...	...	...	...	...	...	...
Rice	...	...	...	...	...	...	-0.06	0.04	-0.04	0.01	...	...	...	...	...	...	...	...
Prepared meals	1.43	0.86	1.68	0.94	1.98	0.92	-0.26	0.59	0.55	0.56	2.15	0.88	1.64	0.97	1.13	0.91	0.86	0.94
Drink and Tobacco	...	...	...	...	...	...	-0.18	0.00	0.36	0.26	...	...	...	...	1.24	0.87	0.82	0.95
Drink	...	...	...	...	...	...	-0.80	0.75	0.77	0.52	...	...	...	...	0.85	0.99	0.85	0.95
Tobacco	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(b) Per Capita Analysis†

Total Food, Drink and Tobacco	0.93	0.99	0.75	0.92	0.82	0.92	0.49	0.75	0.82	0.99	0.86	0.92	0.70	0.95	0.79	0.98	0.81	0.98
Total Food	0.85	0.96	0.64	0.26	0.63	0.75	0.44	0.68	0.76	0.98	0.59	0.96	0.39	0.85	0.78	0.98	0.77	0.97
Local food	0.81	0.96	0.52	0.25	0.45	0.62	0.38	0.61	0.58	0.93	0.50	0.96	0.31	0.79	0.72	0.97	0.64	0.95
Meat	0.77	0.69	0.55	0.69	0.73	0.38	0.40	0.46	0.77	0.95	...	...	...	...	0.79	0.93	0.76	0.96
Fish	0.69	0.69	0.55	0.60	0.11	0.03	0.05	0.01	0.77	0.95	...	...	...	...	...	...	...	...
Cassava (fresh)	0.77	0.78	0.51	0.83	0.17	0.05	0.09	0.05	0.56	0.66*	...	...	...	...	0.84	0.97*	0.78	0.96*
Corn (dough)	0.98	0.90	0.41	0.19	2.10	0.67	-0.10	0.02	0.56	0.66*	1.31	0.93	1.07	0.92	1.32	0.93	1.30	0.96
Imported food	0.92	0.78	1.48	0.80	1.52	0.75	0.56	0.72	1.17	0.92	...	...	...	...	...	...	...	...
Bread	1.48	0.87	1.48	0.80	1.73	0.70	0.41	0.53	...	...	...	...	...	...	...	...	...	...
Rice	...	...	1.15	0.76	0.65	0.16	0.39	0.40	...	...	...	...	...	...	...	...	...	...
Prepared meals	1.67	0.77	2.25	0.89	2.96	0.73	0.75	0.40	1.87	0.93	...	...	...	...	0.84	0.87	2.24	0.93
Drink and Tobacco	...	...	...	...	...	...	0.74	0.93	1.56	0.99	2.39	0.89	1.51	0.76	1.02	0.95	1.24	0.98
Drink	...	...	...	...	...	...	0.82	0.74	1.64	0.92	...	...	...	...	1.02	0.95	1.31	0.95
Tobacco	...	...	...	...	...	...	0.82	0.74	1.43	0.87	...	...	...	...	0.78	0.85	1.16	0.88

* Total starches including rice but not wheaten bread.

† Consumption Unit analysis for Accra 1962.

TABLE S.17 (a)

Average Rural Household Expenditure by Region : N.H.S., 1961-62

(Shillings per 12 weeks)

	Ashanti		Brong-Ahafo		Northern		Western		Eastern		Volta		All Regions	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Number of Households	90	15	72	12	156	26	120	20	108	18	66	11	612	102
Persons per Household	4.46	4.80	3.24	2.75	4.77	3.91	4.40	4.50	4.41	4.50	4.38	4.30	4.58	4.46
Adults	...	1.53	...	1.67	3.08	...	2.35	2.00	...	2.00	...	2.10	...	2.33
Children	...	3.27	...	1.08	1.69	...	2.05	2.50	...	2.50	...	2.20	...	2.12
<i>Total Expenditure*</i>	1050.5	905.6	886.6	703.9	492.8	495.1	643.1	748.6	890.7	1074.6	1026.7	881.2	778.5	773.6
Own consumption	267.1	201.1	333.7	266.4	247.5	256.8	135.7	175.3	235.9	225.8	238.3	193.7	235.5	221.5
Total cash expenditure	783.4	704.5	552.9	437.5	245.3	238.7	507.4	573.4	654.8	848.6	788.4	687.5	543.0	552.2
Local food	281.7	310.1	181.3	244.6	96.8	79.3	287.8	316.2	256.3	279.6	272.1	268.2	218.5	234.8
Imported food	29.1	28.6	23.7	31.6	2.6	0.5	21.6	13.6	27.0	15.9	35.7	29.0	20.6	16.6
Prepared food	12.2	3.4	17.1	5.8	2.4	1.4	21.5	19.6	15.5	3.4	12.6	10.3	12.7	7.0
Total cash food	323.1	341.5	222.1	281.8	101.8	81.2	330.9	349.3	298.8	298.8	320.4	307.7	251.8	258.5
Drink	...	28.6	...	4.0	...	37.6	...	19.6	...	42.1	...	33.6	...	29.0
Tobacco	...	18.2	...	23.1	...	6.2	...	15.6	...	51.1	...	5.2	...	12.7
Total drink and tobacco	56.1	46.8	48.0	27.1	42.1	43.7	38.7	35.2	51.1	54.7	46.5	38.8	46.3	41.8
Total Food (including own consumption)	590.2	542.6	555.8	548.2	349.3	338.0	466.6	524.6	534.7	524.6	558.7	501.4	487.3	480.0
as per cent. of Total Expenditure	56.2	59.9	62.7	77.9	70.9	68.3	72.6	70.1	60.0	48.8	54.4	56.9	62.6	62.0

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TABLE S.17 (b)

Average Urban Household Expenditure by Region : N.H.S., 1961-62

(Shillings per 12 weeks)

	Ashanti		Brong-Ahafo		Northern		Western		Accra		Eastern		Volta		All Regions	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Number of Households	72	12	18	3	5	84	14	90	15	54	9	30	5	378	63	
Persons per Household	3.92	3.33	5.56	5.00	4.89	5.40	3.78	3.79	4.26	6.78	6.78	5.10	3.00	4.08	3.40	
Adults	...	1.81	...	1.00	...	2.80	1.71	...	1.93	...	2.78	...	2.00	...	1.68	
Children	...	1.83	...	1.00	...	2.80	2.07	...	2.33	...	4.00	...	1.00	...	1.71	
<i>Total Expenditure*</i>	1085.4	652.2	1210.3	1869.7	649.9	497.4	612.8	1157.2	995.6	983.8	1350.58	843.2	516.0	940.5	850.9	
Own consumption	55.9	6.1	237.3	273.4	101.1	45.4	38.8	64.2	21.4	166.8	181.7	64.2	165.0	79.2	64.9	
Total Cash Expenditure	1029.5	646.2	973.0	1596.4	548.8	451.8	598.8	1135.8	981.8	817.0	1168.8	778.7	471.0	867.8	795.0	
Local food	408.6	334.3	423.5	396.7	288.2	310.4	315.2	337.7	462.8	363.4	417.8	371.5	239.6	382.8	377.0	
Imported food	73.6	37.2	63.3	30.0	19.9	9.6	38.9	55.7	52.7	34.4	31.6	43.6	22.8	46.8	36.7	
Prepared food	52.8	54.5	24.8	7.6	9.3	76.0	43.3	111.1	104.0	38.3	4.0	25.7	18.5	62.8	46.8	
Total Cash Food	535.0	425.9	511.6	426.7	317.4	320.0	420.5	419.3	629.6	436.1	453.5	440.8	280.8	492.1	460.7	
Drink	...	25.0	...	...	...	14.5	...	...	...	...	40.6	...	...	...	24.2
Tobacco	...	19.6	...	56.0	...	...	14.8	...	...	...	22.0	...	...	...	20.5
Total drink and tobacco	68.3	44.5	48.9	56.0	25.0	...	28.3	29.3	67.6	48.8	62.6	40.2	50.8	49.8	44.8	
Total Food (including own consumption)	590.9	432.0	748.9	700.8	418.5	365.6	459.3	483.5	651.0	659.3	635.2	505.3	325.8	564.8	525.6	
as per cent. of Total Expenditure	54.4	66.2	61.9	37.5	64.4	73.5	72.0	78.9	56.3	66.2	47.0	59.9	63.1	60.1	61.1	

Column "A" One-third sub-sample of 990 households analysed and discussed by P.T.F. Golding (*Economic Bulletin*, vol. IV, No. 4, 1962).
 Column "B" 165 households selected from 990 households in "A"; expenditure is for one week multiplied by twelve.

* Actual expenditure during survey periods, excluding expenditure on rents, rates, water charges, etc. (see Appendix C).

TABLE S.18

Comparison of *Per Capita* Elasticities derived from Regional and Expenditure Cross-section Samples: National Household Survey (1961-62)

	Local Food		Imported Food		Total Food		Drink and Tobacco	
	e	R ²	e	R ²	e	R ²	e	R ²
Urban—								
By region (i)	0.60	0.85	1.34	0.80	0.62	0.90	1.40	0.97
(ii)	0.60	0.80	1.29	0.74	0.65	0.89	1.39	0.97
By expenditure (i)	0.59	0.92	1.11	0.92	0.78	0.98	1.46	0.99
(ii)	0.58	0.93	1.17	0.92	0.76	0.98	1.56	0.99
Rural—								
By region (i)	0.62	0.93	1.84	0.96	0.65	0.90	0.37	0.92
(ii)	0.62	0.92	1.62	0.94	0.82	0.96	0.57	0.97
By expenditure (i)	0.68	0.96	1.11	0.93	0.78	0.98	0.78	0.96
(ii)	0.72	0.97	1.32	0.93	0.78	0.98	0.92	0.95
All Ghana—								
By region (ii)	0.70	0.90	1.61	0.96	0.75	0.92	0.79	0.90
By expenditure (ii)	0.64	0.95	1.30	0.96	0.77	0.97	1.24	0.98

(i) Regression equation excludes "consumption of own produce."
(ii) Total "income" and consumption, *including* "consumption of own produce."

TABLE S.19

Per Capita Cross-section Analysis: National Household Survey, 1961-62 (1)

Consumption Category and Demand Models (2)	(3) R ²	(4) e · \bar{x}	b ± S _b	a	y Shillings per Week
A. All Food—					
(i)	0.9728	0.7716	0.5193 ± 0.0487	2.3929	10.4784
(ii)	0.8818	0.9107	9.4997 ± 0.8531	-12.9574	10.4784
(iii)	0.9881	0.8626	0.8626 ± 0.0361	0.0228	8.592
B. Local Food—					
(i)	0.9511	0.6426	0.3823 ± 0.0570	3.3101	9.2625
(ii)	0.7838	0.7838	7.2604 ± 0.5549	8.6489	9.2625
(iii)	0.9864	0.7733	0.7733 ± 0.0487	0.1641	7.940
C. Starches (5)—					
(i)	0.9590	0.7815	0.1038 ± 0.0123	0.4518	2.0676
(ii)	0.8864	0.9272	1.9171 ± 0.1209	-2.6619	2.0676
(iii)	0.9506	0.9722	0.9722 ± 0.0376	-1.9067	1.635
D. Proteins (Meat and Fish) (5)—					
(i)	0.9639	0.7638	0.1055 ± 0.0192	0.5078	2.1503
(ii)	0.9184	0.9198	1.9778 ± 0.1452	-2.7289	2.1503
(iii)	0.9919	0.7494	0.7494 ± 0.0166	-1.2131	1.888
E. Drink—					
(i)	0.9539	1.2987	0.0462 ± 0.0044	-0.1653	0.5540
(ii)	0.7030	1.3643	0.7558 ± 0.0904	-1.3106	0.5540
(iii)	0.8791	1.1388	1.1388 ± 0.0910	-3.8324	0.3595
F. Tobacco—					
(i)	0.9002	1.1522	0.0238 ± 0.0039	-0.0489	0.3213
(ii)	0.6570	1.2148	0.3903 ± 0.0538	-0.6416	0.3213
(iii)	0.6106	0.9534	0.9534 ± 0.1937	-3.9317	0.2060

- (1) See Appendix C;
(2) Demand models: (i) linear, (ii) semi-log and (iii) double-log;
(3) R², correlation coefficients are significant at 99 per cent. confidence limit;
(4) \bar{x} in model (i) is 15.57 and in (ii) and (iii), 11.79;
(5) For definitions, see Table S.20.

TABLE S.20

Projections based on *Per Capita* Cross-section Analysis:
National Household Survey, 1961-62

Consumption Category and Demand Models	R ²	e. x̄	e. (1960-75)	<i>Per Capita</i> Demand (1960=100)			Aggregate Demand (1960=100)		
				1965	1970	1975	1965	1970	1975
A. All Food (1)—									
(i)	0.97	0.77	0.77	111.79	114.42	120.27	127.47	150.24	184.13
(ii)	0.88	0.91	0.81	112.90	115.55	121.25	128.74	151.73	185.63
(iii)	0.99	0.86	0.85	113.06	115.95	122.44	128.92	152.25	187.46
B. Local Food (1)—									
(i)	0.95	0.64	0.64	109.82	112.01	116.88	125.23	147.08	178.94
(ii)	0.78	0.78	0.70	115.15	113.44	118.37	126.74	148.96	181.22
(iii)	0.99	0.77	0.74	111.64	114.17	119.36	127.30	149.92	182.74
C. Starches (2)—									
(i)	0.96	0.78	0.78	111.94	114.60	120.53	127.65	150.48	184.53
(ii)	0.89	0.93	0.83	113.19	115.90	121.74	129.07	152.19	186.38
(iii)	0.95	0.97	0.97	114.86	118.17	125.63	130.97	155.17	192.34
D. Proteins (3)—									
(i)	0.96	0.76	0.76	111.72	114.28	120.06	127.39	150.06	183.81
(ii)	0.92	0.92	0.82	113.09	115.77	121.56	128.96	152.02	186.11
(iii)	0.99	0.75	0.73	111.28	113.72	119.23	126.89	149.33	182.54
E. Drink—									
(i)	0.95	1.30	1.30	119.86	124.28	134.12	136.68	163.19	205.34
(ii)	0.70	1.36	1.22	119.40	123.39	131.97	135.15	162.02	202.05
(iii)	0.88	1.14	1.16	117.64	121.56	130.63	134.14	154.47	199.99
F. Tobacco—									
(i)	0.90	1.15	1.15	117.63	121.55	130.29	134.13	159.61	199.47
(ii)	0.66	1.21	1.08	117.20	120.75	128.40	133.64	158.56	196.58
(iii)	0.61	0.95	0.95	114.56	117.76	125.10	130.63	154.63	191.53

(1) Local food and all food include "expenditure" on own consumption. Starches, proteins, drink and tobacco refer to cash expenditure;

(2) Starches include cereals (grain and prepared), cassava (prepared) and roots and tubers, as defined in the National Household Survey, 1961-62. (*Form Bs/25, items: 1-13 and 23-26*);

(3) Proteins include fresh, dried and smoked fish, shell-fish, bushmeat, cheaper cuts and offals, as defined in the N.H.S., 1961-62. (*Form Bs/25, items: 55-61*).

TABLE S.21

Estimates of Population, Cash Income and Personal Expenditure, 1954-61 and 1962

	1954	1955	1956	1957	1958	1959	1960	1961	1962
1. Population (mid-year) ('000)	5,855	5,985	6,125	6,277	6,434	6,598	6,770	6,950	7,138
2. Accra Index of Retail Prices (1954 = 100)	100	103	107	108	108	111	112	119	130
3. Net payments to cocoa farmers (£m.)	28.32	29.71	33.97	39.33	27.75	33.64	35.54	48.41	41.27
4. Estimated wages and salaries (£m.)	33.68	37.21	43.60	47.79	51.23	57.52	70.28	77.08	82.07
5. <i>Per capita</i> cash income (£)	10.59	11.18	12.67	13.88	12.27	13.82	15.63	18.06	17.28
6. <i>Per capita</i> cash income at constant (1954) prices (£)	10.59	10.86	11.84	12.86	11.36	12.48	13.96	15.18	13.29
7. Personal consumption (£m.)	212	253	263	292	281	318	340	394	405
8. <i>Per capita</i> personal consumption (£)	36.21	42.27	42.94	46.52	43.67	48.20	50.22	56.69	56.74
9. <i>Per capita</i> personal consumption at constant (1954) prices (£)	36.21	41.04	40.13	43.07	40.44	43.42	44.48	47.64	43.65

TABLE S.22

Projected *Per Capita* Cash Income and Total Personal Expenditure, 1960-75

	1960	1965	1970	1975
Population ('000)	6,770	7,720	8,890	10,365
<i>Per capita</i> personal consumption (£)	100.00	114.03	131.31	153.10
<i>Per capita</i> cash income (£)	100.00	115.34	118.73	126.29
<i>Per capita</i> cash income (1) (£)	13.58(2)	16.59	17.26	18.74
	100.00	122.18	127.08	138.01

(1) Projections based on linear relationship between *per capita* cash income (Y) and *per capita* total personal expenditure (X). The result given by this linear model as follows:—

$$R^2 = \begin{matrix} 0.8635 \\ 1.3740 \\ -6.0526 \\ 0.4378 \end{matrix} \begin{matrix} \text{a} \\ \text{b} \\ \text{c, 1961} \\ \text{d} \end{matrix}$$

(2) The figure of £13.58 for *per capita* cash income in 1960 is estimated from the equation.

TABLE S.23
Parameters Estimated from Time-series Data

Models (3)	R ²	e.1961	a	b	R ²	e.1961	a	b	R ²	e.1961	a	b
Rice												
(a) :	0.8195	2.9465	-29.3846	2.8999	0.7134	1.4190	-6.97	1.8555	0.8893	1.8109	-15.8855	2.3799
(b) :	0.8230	2.4825	-86.5246	37.0889	0.7258	1.1937	-43.4584	23.6950	0.8868	1.5203	-62.5412	30.3304
(c) :	0.7581	6.8456	-15.6367	6.8456	0.7080	1.5073	-1.0303	1.5073	0.8645	2.1535	-2.8305	2.1535
(d) :	0.2401	0.3462	1.0285	1.5379	0.2576	1.4003	0.30	1.3544	0.5065	0.6226	1.1137	0.7859
Cattle												
(a) :	0.4836	1.3662	-0.0087	0.0018	0.0418	0.3920	0.5919	0.0217	0.6539	1.9364	-2.7294	0.3457
(b) :	0.5630	1.1730	-0.0453	0.0235	0.0531	0.3712	0.0778	0.3118	0.6149	1.5788	-9.1870	4.2786
(c) :	0.7663	1.6149	-8.3765	1.6149	0.0700	0.3783	-1.1169	0.3783	0.5439	2.2972	-5.3919	2.2972
(d) :	0.2363	0.3050	0.0004	0.0013	0.3013	0.2316	-0.0511	0.1139	0.2449	1.5080	0.0131	0.2720
Imported Food												
(a) :	0.9105	1.6374	-2.4930	0.4239	0.7958	0.8032	0.1153	0.0418	0.5571	0.5870	0.1197	0.0116
(b) :	0.9103	1.3762	-10.8189	5.4086	0.7809	0.6682	-0.6927	0.5279	0.5572	0.4920	-0.1071	0.1476
(c) :	0.8919	1.9042	-3.7916	1.9042	0.7842	0.7967	-2.4634	0.7976	0.5399	0.5533	-2.7268	0.5533
(d) :	0.5389	0.9324	0.0419	0.3974	0.4838	0.3828	-0.0013	0.0502	0.3972	0.6314	-0.0029	0.0207
Quantum (1)												
(a) :	0.9629	1.4576	-2.7303	0.5502	0.8113	1.1571	0.4029	0.1494	0.2428	1.2908	0.2202	0.0061
(b) :	0.9557	1.2715	-3.4830	0.9090	0.7986	0.9251	-3.3003	1.8915	0.2928	0.2413	0.1023	0.0772
(c) :	0.9577	1.6452	-2.7408	0.4452	0.8044	0.2522	-2.7809	1.2502	0.2691	0.2600	-0.9716	0.2602
(d) :	0.7370	0.5715	0.1065	0.4403	0.5058	0.5209	-0.0023	0.1708	0.6894	1.0126	-0.0098	0.0249
Unsweetened Milk												
(a) :	0.8291	1.7135	0.3217	0.8291	0.2511	0.7661	0.9421	0.2511	0.2511	0.6494	-3.5597	2.9091
(b) :	0.8183	1.4312	4.0790	0.8183	0.6511	1.5113	-3.8833	0.6511	0.7009	2.6452	-7.3492	2.6452
(c) :	0.8085	2.1466	-4.8308	0.8085	0.7009	2.6452	-7.3492	0.7009	0.1352	0.1670	0.0661	0.0794
(d) :	0.1348	0.1464	0.0816	0.1348	0.0077	0.1347	0.2185	0.0077	0.1352	0.1670	0.0661	0.0794
Salted/Dried Fish												
(a) :	0.4836	1.3662	-0.0087	0.0018	0.0418	0.3920	0.5919	0.0217	0.6539	1.9364	-2.7294	0.3457
(b) :	0.5630	1.1730	-0.0453	0.0235	0.0531	0.3712	0.0778	0.3118	0.6149	1.5788	-9.1870	4.2786
(c) :	0.7663	1.6149	-8.3765	1.6149	0.0700	0.3783	-1.1169	0.3783	0.5439	2.2972	-5.3919	2.2972
(d) :	0.2363	0.3050	0.0004	0.0013	0.3013	0.2316	-0.0511	0.1139	0.2449	1.5080	0.0131	0.2720
Imported Meat (excluding Livestock)												
(a) :	0.9105	1.6374	-2.4930	0.4239	0.7958	0.8032	0.1153	0.0418	0.5571	0.5870	0.1197	0.0116
(b) :	0.9103	1.3762	-10.8189	5.4086	0.7809	0.6682	-0.6927	0.5279	0.5572	0.4920	-0.1071	0.1476
(c) :	0.8919	1.9042	-3.7916	1.9042	0.7842	0.7967	-2.4634	0.7976	0.5399	0.5533	-2.7268	0.5533
(d) :	0.5389	0.9324	0.0419	0.3974	0.4838	0.3828	-0.0013	0.0502	0.3972	0.6314	-0.0029	0.0207
Total Fish												
(a) :	0.9629	1.4576	-2.7303	0.5502	0.8113	1.1571	0.4029	0.1494	0.2428	1.2908	0.2202	0.0061
(b) :	0.9557	1.2715	-3.4830	0.9090	0.7986	0.9251	-3.3003	1.8915	0.2928	0.2413	0.1023	0.0772
(c) :	0.9577	1.6452	-2.7408	0.4452	0.8044	0.2522	-2.7809	1.2502	0.2691	0.2600	-0.9716	0.2602
(d) :	0.7370	0.5715	0.1065	0.4403	0.5058	0.5209	-0.0023	0.1708	0.6894	1.0126	-0.0098	0.0249

(1) Imported foods valued at 1954 c.i.f. prices, c.f. *Annual Report on External Trade, 1959 and 1960*, vol. II, Table XXXIX (b).

(2) Estimated retail values, deflated by the Accra Imported Foodstuffs Index (see Table S.25).

(3) Models (a) linear, (b) semi-log, (c) double-log, (d) 1st differences (see Chapter V, Section F).

TABLE S.24
Projected Level of Demand for Selected Food Imports (1)

	Model (1)	R ²	Per Capita Demand			Aggregate Demand				
			Estimated Consumption 1960	Index of Per Capita Consumption (1960 = 100) 1970	1975	Estimated Consumption 1960	Index of Aggregate Consumption (1960 = 100) 1970 1975			
Quantities—										
Rice	(b)	0.82	10.23	172.59	186.87	216.75	196.80	245.38	331.84	
Wheat Flour	(b)	0.73	18.35	125.85	130.93	141.57	69.25	143.51	170.74	216.74
Refined Sugar	(a)	0.89	16.43	143.63	153.27	174.54	124.26	163.78	201.26	267.22
Unsweetened Milk	(a)	0.83	2.20	144.13	153.88	175.63	111.23	164.35	202.06	268.89
Cattle (2)	(c)	0.77	0.02	137.82	146.79	167.98	14.86	165.98	203.57	271.61
Canned Meat	(a)	0.65	1.96	155.70	164.71	190.82	13.30	177.54	216.28	292.15
Salted/Dried Fish										
Canned Fish										
Quantum—										
Imported Food	(a)	0.91	3.26	139.08	147.78	167.06	22.09	158.59	194.05	255.77
Livestock and Meat	(a)	0.80	0.68	118.44	122.51	131.59	4.62	135.06	160.87	201.46
Imported Meat	(b)	0.56	0.28	110.65	112.74	117.13	1.88	126.17	148.04	179.33
Total Fish	(c)	0.70	0.64	169.80	188.44	234.49	4.32	193.62	247.44	359.00
Retail Value—										
Imported Food	(a)	0.96	4.74	134.50	142.68	159.91	32.09	153.37	187.35	244.82
Livestock and Meat	(a)	0.81	1.63	127.68	133.79	147.44	11.01	145.59	175.68	225.73
Imported Meat										
Total Fish	(a)	0.67	0.62	138.00	146.41	165.14	4.17	157.36	192.25	252.83

(1) Projections based on demand models fitted to time-series data (see Table S.23).

(2) Cattle in numbers of head (*per capita*) or '000 heads (aggregate demand).

TABLE S.25
Movements in Retail and Import Prices of Food, etc., 1948-62

	Accra Index of Retail Prices (1) (June 1954 = 100)			Index of Market Prices of Locally Produced Foodstuffs (2) (1954 = 100)							Average Value c.i.f. Index (1954 = 100)		
	All Items	Local Foodstuffs	Imported Foodstuffs	Weighted Total	Accra	Kumasi	Sekondi/ Takoradi	Tarkwa	Tamale	Keta	Ho	Food S.I.T.C. "O"	Total Consumer Goods
1948	66	54	82	54	53	56	58	60	43	54	49	91	102
1949	76	66	83	79	67	89	106	87	68	74	65	81	98
1950	87	83	92	78	68	86	90	96	77	90	77	110	100
1951	101	99	108	100	106	89	103	99	102	117	99	106	118
1952	99	98	106	103	105	96	103	105	106	118	97	104	119
1953	99	96	104	101	98	103	105	103	104	96	98	105	109
1954	100	100	100	100	100	100	100	100	100	100	100	100	100
1955	103	107	100	106	110	104	99	104	98	107	101	99	94
1956	107	115	99	115	126	109	103	111	99	112	112	99	97
1957	108	112	105	116	116	117	110	120	115	112	126	101	97
1958	108	112	102	113	115	114	99	117	125	106	114	94	97
1959	111	115	102	119	121	125	101	118	127	108	118	91	97
1960	112	115	101	117	121	120	99	114	126	107	110	91	98
1961	119	212	110	131	130	143	119	122	136	127	144	96	...
1962	130	134	116	142	147	145	123	135	144	145	160	88	...

(1) The old index for Accra (June 1948 = 100) has been recalculated with June 1954 = 100. For the years 1949-53, the index refers to retail prices for December. After 1954 the figures are annual averages.

(2) Refers to annual averages for all years.

Source: *Quarterly Digest of Statistics*; *Statistical Year Book*, 1961; *Annual Report on External Trade, 1959 and 1960*, vol. II, Table XXXVII (p. 144) and Table XL (p. 150).

TABLE S.26
Origin of Imported Rice, 1949-62
(S.I.T.C. 042-100,200)

	Total Imports			Main Suppliers as Percentage of Total Value					
	'000 cwt.	£'000	Shillings per cwt.	Egypt	U.S.A.	Asian Countries	Italy	Togo	Other
1949-53*	76.1	251.8	66.2	54.6	...	7.3	16.2	13.4	8.5
1954-58*	192.1	656.9	68.4	30.0	3.5	51.4	4.2	6.5	4.4
1959 . . .	667.8	2034.7	61.0	...	14.6	56.3	0.1	0.9	28.1
1960 . . .	575.6	1629.8	56.6	1.2	69.5	16.7	...	3.7	8.9
1961 . . .	926.8	2514.4	54.2	...	84.7	7.9	...	1.8	5.6
1962 . . .	1413.9	3761.6	53.2	...	93.6	1.4	...	2.2	2.8

* Average annual rate in all Tables S.26 through S.33.

TABLE 27 (a)
Imports of Wheaten Products, 1949-62
(S.I.T.C. 046-100, 200 ; 048-300, 410, 421, 422, 429)

£m.

	Total	Wheat* Flour	Other Wheaten Products		
			Macaroni, etc.	Cabin Bread	Bakery Products
1949-53 . . .	1.91	1.48	n.a.	0.27	0.16
1954-58 . . .	2.74	2.32	0.01	0.19	0.22
1959 . . .	3.31	3.11	0.01	0.02	0.17
1960 . . .	3.26	3.04	0.01	0.01	0.20
1961 . . .	3.32	3.12	0.01	...	0.19
1962 . . .	2.91	2.79	0.02	...	0.10

* Imports of unmilled wheat are negligible.

TABLE 27 (b)
Origin of Imported Wheat Flour, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Volume and Value					
	'000 cwt.	£'000	Shillings per cwt.	U.S.A.		Canada		Other	
				Volume	Value	Volume	Value	Volume	Value
1949-53 . . .	488.3	1481.9	60.6	83.5	83.8	16.4	16.0	0.1	0.1
1954-58 . . .	772.6	2318.0	60.0	67.8	67.5	29.2	31.9	3.0	0.6
1959 . . .	1169.7	3107.6	53.2	43.3	44.8	53.6	53.0	3.1	2.2
1960 . . .	1128.6	3036.0	53.9	40.9	40.4	56.4	57.1	2.7	2.5
1961 . . .	1232.0	3115.5	50.6	26.7	28.0	71.9	71.0	1.4	1.0
1962 . . .	979.9	2787.2	56.8	21.0	20.8	75.3	76.3	3.7	2.9

TABLE S.28

Origin of Imported Refined Sugar, 1949-62
(S.I.T.C. 061-210, 220)

	Total Imports			Main Suppliers as Percentage of Total Value					
	'000 cwt.	£'000	Shillings per cwt.	U.K.	France	Czecho-slovakia	Poland	U.S.S.R.	Other
1949-53 . . .	303.1	1013.4	66.8	99.9	...	...	...	...	0.1
1954-58 . . .	613.4	1892.8	61.8	90.1	8.1	1.3	...	...	0.5
1959 . . .	897.3	2445.7	54.6	78.6	13.7	6.2	...	...	1.5
1960 . . .	1113.1	2860.0	51.4	70.0	22.7	3.1	0.2	1.3	2.7
1961 . . .	1248.2	2688.6	43.4	58.3	24.1	4.0	0.5	7.2	5.9
1962 . . .	1208.7	2665.0	44.0	42.9	22.2	6.8	13.4	4.1	10.6

TABLE 29 (a)

Imports of Milk Products, 1949-62
(S.I.T.C. 022-110, 120, 200, 300; 023-010, 020; 024-010, 202)

£m.

	Total	Milk and Cream (Evaporated and Condensed)				Other Milk Products		
		Fresh	Un-sweetened	Sweetened	Dry	Cheese	Butter	Other
1949-53 . . .	0.56	0.01	0.28	0.13	0.03	0.04	0.08	...
1954-58 . . .	1.15	0.03	0.60	0.11	0.05	0.06	0.08	0.11
1959 . . .	1.58	0.04	0.88	0.10	0.09	0.07	0.11	0.29
1960 . . .	1.69	0.04	0.95	0.09	0.13	0.08	0.10	0.30
1961 . . .	1.89	0.06	1.22	0.17	0.27	0.08	0.11	n.a.
1962 . . .	1.78	0.04	1.18	0.10	0.27	0.08	0.11	n.a.

TABLE S.29 (b)

Origin of Imported Unsweetened Milk and Cream, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value			
	'000 cwt.	£'000	Shillings per cwt.	Nether-lands	U.K.	U.S.A.	Other
1949-53 . . .	37.9	276.3	145.8	97.5	1.6	...	0.9
1954-58 . . .	81.9	597.2	145.8	92.3	6.5	...	1.2
1959 . . .	125.0	877.3	140.4	92.1	6.7	0.3	0.9
1960 . . .	131.1	954.0	145.6	94.4	4.4	...	1.2
1961 . . .	176.9	1218.0	137.8	96.4	2.9	...	0.7
1962 . . .	162.7	1176.8	144.6	95.1	4.5	0.1	0.3

TABLE S.29 (c)
Origin of Imported Sweetened Milk and Cream, 1949-62

	Total Imports			Main Supplies as Percentage of Total Value			
	'000 cwt.	£'000	Shillings per cwt.	Netherlands	U.K.	Denmark	Other
1949-53 . . .	17.8	128.9	144.8	92.1	7.5	0.4	...
1954-58 . . .	15.6	113.6	146.0	96.2	2.0	0.8	1.0
1959 . . .	15.0	101.4	135.2	96.5	2.6	0.6	0.3
1960 . . .	12.4	86.4	139.4	96.8	2.6	0.3	0.3
1961 . . .	26.9	167.2	124.4	94.0	5.0	0.2	0.8
1962 . . .	32.7	107.2	65.6	97.2	...	0.8	2.0

TABLE S.29 (d)
Origin of Imported Dry Milk and Cream, 1949-62

	Total Imports				Main Suppliers as a Percentage of Total Value				
	'000 cwt.	£'000	Shillings per cwt.	Netherlands	Denmark	U.K.	Australia	U.S.A.	Other
1949-53 . . .	1.6	25.5	318.8	19.7	25.9	12.5	18.2	...	23.7
1954-58 . . .	3.1	47.9	309.0	68.5	11.7	...	0.8	9.0	...
1959 . . .	8.7	98.9	206.6	51.8	15.0	3.3	1.3	24.7	3.9
1960 . . .	13.2	125.0	189.4	37.0	10.6	3.8	0.2	44.3	4.1
1961 . . .	34.5	267.2	154.8	16.2	13.4	25.2	...	40.2	5.0
1962 . . .	39.6	266.0	134.4	18.5	16.4	22.9	...	40.6	1.6

TABLE S.30 (a)

Imports of Livestock, Meat and Meat Preparations, 1949-62
(S.I.T.C. 001-100, 210, 220, 300, 410, 420, 490, 500, 900; 011-100, 200, 300, 400, 600, 800; 012-110, 120, 130, 910, 990; 013-300, 400, 810, 820)

	Livestock				Carcase Meat and Meat Preparations							Total Carcase Meat, etc.
	Cattle	Sheep, Goats	Other Live-stock	Total Live-stock	Chilled/ Frozen Meat	Salted/Dried Meat		Canned Meat		Sausages, Meat Extracts, etc.		
						Ham/Bacon	Other	Corned Meat	Other			
1949-53	0.98	0.63	...	1.61	0.08	0.04	0.29	0.39	0.11	0.04	0.94	
1954-58	1.60	0.72	0.01	2.33	0.18	0.04	0.56	0.62	0.10	0.03	1.53	
1959	2.08	0.66	0.03	2.77	0.29	0.06	0.51	0.66	0.09	0.05	1.66	
1960	2.02	1.11	0.04	3.16	0.35	0.07	0.43	0.65	0.10	0.05	1.65	
1961	3.38	1.08	0.09	4.55	0.48	0.09	0.45	0.74	0.10	0.07	1.93	
1962	2.41	0.63	0.03	3.07	0.40	0.06	0.24	0.61	0.07	0.04	1.42	

£m.

TABLE S.30 (b)
Origin of Imported Cattle, 1949-62

	Total Imports				Main Sources as Percentage of Total Value			
	'000 units	£'000	£ per unit	Upper Volta	Togo			Other
					Ivory Coast	Coast	Other	
1949-53	59.9	983.0	16.42	13.4	12.8	71.8	2.0	
1954-58	73.2	1596.6	21.82	84.4	n.a.	n.a.	15.6	
1959	92.0	2081.7	22.63	79.4	20.0	0.6	...	
1960	99.4	2014.9	20.27	77.6	18.4	4.0	...	
1961	137.7	3383.3	24.57	66.1	27.9	5.9	0.1	
1962	96.5	2413.6	25.01	88.0	11.8	0.1	0.1	

TABLE S.30 (c)

Origin of Imported Chilled/Frozen Meat, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value				
	'000 cwt.	£'000	Shillings per cwt.	New Zealand	Australia	U.K.	U.S.A.	Other
1949-53	7.3	78.8	215.4	36.0	38.4	2.2	...	23.4
1954-58	13.0	178.4	274.0	48.3	20.3	12.7	2.8	16.0
1959	25.9	288.2	222.2	19.6	23.1	25.3	14.5	17.5
1960	34.6	352.9	204.0	22.2	19.0	16.3	22.6	19.9
1961	54.5	482.0	176.8	29.9	12.9	15.8	23.0	18.4
1962	46.4	403.5	174.0	28.7	21.1	18.0	19.5	12.7

TABLE S.30 (d)

Origin of Imported Salted/Dried Meat, 1949-62

	Total Imports*			Main Suppliers as Percentage of Total Value				
	'000 cwt.	£'000	Shillings per cwt.	Denmark	Netherlands	U.K.	Togo	Other
1949-53	58.7	290.8	99.0	58.1	12.2	5.1	7.7	16.9
1954-58	134.8	564.8	83.8	59.9	14.3	4.5	14.3	7.0
1959	107.7	506.9	94.2	58.0	8.7	10.0	5.6	17.7
1960	90.1	425.3	94.4	53.6	5.4	24.5	5.5	11.0
1961	83.6	454.0	108.6	42.5	5.6	19.8	6.8	25.3
1962	45.3	236.8	104.4	37.1	2.7	57.0	0.7	2.5

* Excludes bacon and ham.

TABLE S.30 (e)

Origin of Imported Corned Meat, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value				
	'000 cwt.	£'000	Shillings per cwt.	Australia	South* America	Nigeria	U.S.A.	Other
1949-53†	27.8	385.0	276.8	55.7	38.9	...	...	5.4
1954-58	42.6	620.6	291.4	3.2	94.8	...	...	2.0
1959	44.2	660.5	298.8	0.1	99.2	0.1	...	0.6
1960	41.6	652.4	313.6	0.2	90.8	6.4	...	2.6
1961	45.1	739.6	328.0	...	75.2	12.2	0.7	11.9
1962	37.3	608.7	326.4	1.8	67.3	22.2	2.4	6.3

* Includes Brazil, Argentina, Uruguay, Paraguay;

† Estimates are given for the years 1949 to 1953; no details of canned meat provided in the *Trade Returns*.

TABLE S.31 (a)

Imports of Fish and Fish Preparations, 1949-62
(S.I.T.C. 031-100, 210, 220, 300; 032-011, 012, 013, 019, 020)

£m.

	Total	Fresh/ Frozen Fish	Salted/Dried Fish		Canned Fish
			Stockfish	Other	
1949-53 . . .	1.38	0.01	0.02	0.41	0.95
1954-58 . . .	2.29	0.04	0.05	0.48	1.72
1959 . . .	3.09	0.07	0.08	0.60	2.34
1960 . . .	3.50	0.27	0.07	1.19	1.97
1961 . . .	4.81	0.92	0.07	1.32	2.51
1962 . . .	3.06	0.33	0.05	1.22	1.47

TABLE S.31 (b)

Origin of Imported Fresh/Frozen Fish, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value					
	'000 cwt.	£'000	Shillings per cwt.	U.K.	Norway	Canary Islands	West Africa	U.S.S.R.	Other
1949-53 . . .	1.2	11.5	198.6	98.1	1.1	...	0.5	...	0.3
1954-58 . . .	5.6	40.7	146.6	82.7	13.9	...	2.0	...	1.4
1959 . . .	12.2	70.4	115.4	24.4	62.4	...	6.4	...	6.8
1960 . . .	55.6	271.9	97.8	6.6	12.0	30.8	...	37.0	13.6
1961 . . .	470.4	918.4	39.0	3.2	6.7	42.2	8.1	37.4	2.4
1962 . . .	83.3	327.6	78.6	3.2	1.7	42.2	51.4	...	1.5

TABLE S.31 (c)
Origin of Imported Salted/Dried Fish, 1949-62

	Total Imports*			Main Suppliers as Percentage of Total Value			
	'000 cwt.	£'000	Shillings per cwt.	Canary Islands	West Africa	U.K.	Other
1949-53 . . .	68.5	406.8	118.8	74.1	13.4	5.3	7.2
1954-58 . . .	67.4	478.0	141.8	76.7	13.4	2.7	7.2
1959 . . .	66.6	599.0	179.8	60.6	22.3	4.4	12.7
1960 . . .	150.4	1190.9	158.4	38.0	57.4	1.7	2.9
1961 . . .	168.4	1315.5	156.2	34.8	61.7	1.9	1.6
1962 . . .	160.0	1220.4	152.6	27.0	71.2	0.6	1.2

* Excluding stockfish.

TABLE S.31 (d)
Origin of Imported Canned Fish, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value						
	'000 cwt.	£'000	Shillings per cwt.	Japan	Portugal	South Africa	Netherlands	U.S.A.	Countries* in Africa n.e.s.	Other
1949-53 . . .	93.4	950.9	203.6	33.7	22.8	9.4	13.1	2.4	...	18.6
1954-58 . . .	189.2	1721.5	182.0	23.5	19.2	27.6	6.0	1.5	...	22.2
1959 . . .	269.4	2341.5	173.8	17.0	18.4	34.3	1.3	0.7	27.2	1.1
1960 . . .	221.9	1970.5	177.4	22.4	15.9	23.2	3.5	0.1	33.3	1.6
1961 . . .	278.0	2510.7	180.6	30.2	8.2	...	17.6	2.2	37.5	4.3
1962 . . .	148.7	1464.5	196.8	28.7	...	...	4.1	4.8	56.3	6.1

* In 1961 and 1962 Morocco accounted for all imports from African countries.

TABLE S.32 (a)

Imports of Beverages, 1949-62

(S.I.T.C. 111-011, 020; 112-120, 130, 200, 310, 320, 330,
340, 410, 420, 430, 440, 450, 460, 490)

£m.

	Total	Ale, Beer, Stout	Spirits			Wines	Mineral Waters
			Gin	Whisky	Other Spirits		
1949-53 . . .	1.84	1.35	0.14	0.11	0.10	0.14	...
1954-58 . . .	2.29	1.55	0.35	0.23	0.05	0.11	0.01
1959 . . .	2.45	1.68	0.34	0.24	0.06	0.12	0.01
1960 . . .	2.68	1.87	0.37	0.22	0.07	0.13	0.02
1961 . . .	2.32	1.68	0.26	0.16	0.07	0.14	0.02
1962 . . .	0.62	0.47	0.01	0.05	0.03	0.05	0.01

TABLE S.32 (b)

Origin of Imported Ale, Beer and Stout, 1949-62

	Total Imports			Main Suppliers as Percentage of Total Value						
	Liq. gals. (m.)	£'000	£ per gal.	Nether- lands	U.K.	Eire	West Germany	Denmark	Czecho- slovakia	Other
1949-53 . . .	3.32	1347.1	0.41	52.4	18.2	2.3	16.4	2.5	0.4	7.8
1954-58 . . .	3.32	1546.2	0.47	73.2	5.7	11.5	6.3	1.9	1.0	0.4
1959 . . .	3.24	1680.1	0.52	50.6	4.5	22.0	17.6	4.0	0.9	0.4
1960 . . .	3.61	1868.5	0.52	41.4	5.1	24.0	24.8	4.0	0.3	0.4
1961 . . .	3.41	1679.0	0.49	33.2	6.0	30.3	25.3	4.0	1.0	0.2
1962 . . .	0.87	474.5	0.55	19.9	1.7	55.9	13.3	5.6	1.1	2.5

TABLE S.33 (a)
Imports of Tobacco, 1949-62
(S.I.T.C. 121-010, 020, 090;
122-110, 120, 200, 300)

£m.

	Total	Manufactured Tobacco		Unmanu- factured Tobacco
		Cigarettes	Other	
1949-53 . . .	1.54	1.12	0.01	0.42
1954-58 . . .	1.70	0.82	0.45	0.43
1959 . . .	1.82	0.11	0.25	1.46
1960 . . .	1.11	0.19	0.01	0.91
1961 . . .	1.19	0.27	0.04	0.88
1962 . . .	0.70	0.11	0.04	0.56

TABLE S.33 (b)
Origin of Imported Cigarettes, 1949-62

	Total Imports				Main Suppliers as Percentage of Total Value			
	lbs. (m.)	heads (m.)	£'000	£ per lb.	U.K.	U.S.A.	Nether- lands	Other
1949-53 . . .	1.87	797	1111.4	0.59	100.0	...	...	...
1954-58 . . .	1.29	567	823.0	0.64	99.5	0.1	0.4	...
1959 . . .	0.15	70	113.1	0.75	84.4	8.4	5.3	1.9
1960 . . .	0.24	123	187.3	0.79	90.0	5.8	3.8	0.4
1961 . . .	0.31	144	274.6	0.89	95.3	4.0	0.6	0.1
1962 . . .	0.13	61	109.2	0.84	92.1	5.7	1.3	0.9

TABLE S.33 (c)
Origin of Imported Unmanufactured Tobacco

	Total Imports			Main Suppliers as Percentage of Total Value				
	lbs. (m.)	£'000	£ per lb.	U.S.A.	India	Rhodesia	Nigeria	Other
1949-53 . . .	1.62	419.0	0.26	99.2	...	...	...	0.8
1954-58 . . .	1.32	431.6	0.33	99.7	...	...	...	0.3
1959 . . .	5.64	1460.8	0.26	64.8	10.7	20.7	3.9	...
1960 . . .	3.37	910.6	0.27	76.9	11.5	9.2	1.7	0.7
1961 . . .	2.97	879.8	0.30	75.8	8.5	14.4	...	1.3
1962 . . .	2.23	559.3	0.25	70.1	13.2	12.1	...	4.6



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