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The Evolution of Poverty and Welfare in Nigeria, 1985–92

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John Ngwafon
Saji Thomas

Between 1985 and 1992, the extremely poor became poorer, but the standard of living for all other income groups improved. The benefits of growth were not shared equally by different parts of the country.

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Summary findings

Canagarajah, Ngwafon, and Thomas present a poverty profile of Nigeria for the years 1985 and 1992 and show how poverty changed between those years. They show the nature of poverty in both years for different deciles of the population, different levels of education, different ages for household heads, and different parts of the country, including urban and rural areas.

There is no official poverty line in Nigeria, so they selected one based on two-thirds of average per capita spending in 1985 (₦ 395 a year per capita in 1985 prices). ₦198 (one third of mean per capita household spending) is used to indicate extreme poverty. The bottom 17 to 18 percent of income distribution had a lower standard of living in 1992 than in 1985 by any measure, but all other income groups had a higher standard of living.

An increase in mean per capita household spending reduced the proportion of the population in poverty from 43 percent to 34 percent.

But the benefits of growth were not shared equally by different parts of the country. Growth of household spending was faster in the southern and middle parts of the country and slower in the north. Poverty in Nigeria is overwhelmingly rural and regional, but is also greatly influenced by age, education, and the nature of employment. Most of the poor, especially the extremely poor, are uneducated.

The 8.9 percent decline in poverty was the net result of a +13.6 percent growth factor and a –4.7 percent income distribution factor.

Improving the quality of data collection and analysis and establishing systems for monitoring poverty are important for policymaking. Canagarajah, Ngwafon, and Thomas recommend an integrated living standards survey to provide baseline data and to permit analysis of household behavior.

This paper — a joint product of Human Development 3 and Institutional and Social Policy, Africa Technical Families — is part of a larger effort in the region to analyze welfare and poverty issues. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Betty Casely-Hayford, room J8-270, telephone 202-473-4672, fax 202-473-8065, Internet address bcaselyhayford@worldbank.org. January 1997. (84 pages)

THE EVOLUTION OF POVERTY AND WELFARE IN NIGERIA (1985-92)

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TABLE OF CONTENTS

LIST OF TABLES

FIGURES AND GRAPHS

CURRENCY EQUIVALENTS

Currency Unit: Naira (₦)

Official Rate: US$1.00 = ₦ 1.0818 (Mean 1985/1986)
US$1.00 = ₦ 22.00 (Mean 1992/93)

LIST OF ABBREVIATIONS AND ACRONYMS

CBN	⇒	Central Bank of Nigeria
CDR	⇒	Crude Death Rate
CEM	⇒	Country Economic Memorandum
CES	⇒	Consumption Expenditure Survey
CPI	⇒	Consumer Price Index
CSER	⇒	Center for Social and Economic Research
EA	⇒	Enumeration Area
ESW	⇒	Economic and Sector Work
FOS	⇒	Federal Office of Statistics
FGT	⇒	Foster-Greer-Thorbecke
GDP	⇒	Gross Domestic Product
IFAD	⇒	Institute for Food and Agricultural Development
ILO	⇒	International Labor Organization
IMR	⇒	Infant Mortality Rate
JASPA	⇒	Jobs and Skills Program for Africa
LSMS	⇒	Living Standards Measurement Survey
NCS	⇒	National Consumer Survey
NGO	⇒	Non-Governmental Organization
NISER	⇒	Nigerian Institute for Scientific and Economic Research
NISH	⇒	National Integrated Survey of Households
PCE	⇒	Average per capita expenditure
SAP	⇒	Structural Adjustment Program
SDA	⇒	Social Dimensions of Adjustment
SSA	⇒	Sub-Saharan Africa
UNICEF	⇒	United Nations Children's Fund
UPE	⇒	Universal Primary Education
WID	⇒	Women in Development

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1. INTRODUCTION

The analysis of the evolution of poverty and welfare over time in Nigeria has been difficult, because there are empirical or data considerations which make the task daunting. The social and economic data base to analyze this issue is either non-existent or missing in many Sub-Saharan countries, including Nigeria. However under the National Survey of Integrated Households (NISH) two National Consumer Surveys (NCS) were conducted, one in 1985 and the other 1992, which provide the minimum requirement towards undertaking such an analysis. It does not, however, enable us to address the detailed issues of household and individual welfare.

This paper looks at the household welfare determined by the capabilities and constraints of its members for income generation and access to publicly financed services. In the rural areas, since most households are engaged in agriculture, access to land, credit and other productive inputs, and their human capital, determine their capacity for income generation. For the non-agricultural population, particularly for urban dwellers, labor market operation and their human capital are decisive in determining their status. Human capital is generally dependent on the availability and access to a critical mass of health, education and nutritional services. Since each one of them complements the effect of the other, a critical minimum of each is required. In Nigeria, though there is a large private sector, the provision of social services, particularly education and health have been primarily in the domain of the public sector. The level and quality of provision of social services, especially for the poor, has eroded over time.

In terms of health indicators, noticeable improvements have been made since the 1970s, but a lot still needs to be done. Nigeria's health indicators such as morbidity and mortality rates, are high. The crude death rate (CDR) had declined by half from 27 per 1000 in 1965 to 15 per 1000 in 1993. The infant mortality rate (IMR) in 1993 was estimated at 83 per 1000 live births, down from 140 per 1000 in 1970. Towards the end of the 1980s, the maternal mortality rates were estimated to have reached 8 per 1000 live births. Life expectancy at birth had risen from 39 years in 1960, to 51 in 1993 (World Bank, 1995).

These indicators, however, show that Nigeria fared badly compared to many countries at the same level of GDP per capita, and not much better than other countries of Sub-Saharan Africa.

About 80 percent of the deaths are still caused by preventable diseases such as measles, malaria, pneumonia, diarrhea, gonorrhea, whooping cough, schistosomiasis, chicken pox and tuberculosis. In addition, fewer than 30 percent of pregnant women received modern pre- and post-natal care. These causes of morbidity and mortality are reinforced by the prevalence of unhygienic traditional delivery practices and the lack of adequate family planning practices.

In the education sector, gross primary enrollment rate increased from 42 percent in 1960 (World Bank, 1989a and 1995) to 92 percent at its peak in 1982/83, after which it subsided to 78 percent in 1992. Secondary and tertiary gross enrollment also increased until the early 1980s after which a downward trend ensued in the second half. The adult literacy rate, the best indicator of the extent to which education has spread, increased steadily from 15 percent in 1960, to a

modest level of 51 percent in 1992. Comparison of literacy rates for countries such as Ghana, Cote d'Ivoire and Kenya in SSA, and Indonesia, a country similar to Nigeria in many respects, however, indicate Nigeria has fallen far behind.

The primary manifestation of poverty occurs at the household (individual) level, the understanding of which requires data at the same level of disaggregation. Unfortunately, economic and social statistics in Nigeria are limited and unreliable particularly for such micro-level analysis. Furthermore, data on income and expenditures are absent or outdated. Although attempts1/ have been made to fill the gap in household level information through a series of studies and household surveys, published government sources are inadequate due to the lack of proper accounting of sources and uses of income, imprecision in definition and the lack of household distribution by income (expenditure) groupings.

This paper's objective is to document the evolution of household welfare and poverty in Nigeria in the period of 1985-92. The present exercise is the first which investigates the changes in and implications for household welfare and poverty. The Nigerian economy achieved an impressive growth performance over the years for which survey data are available (around 5 percent GDP growth rate per annum on average), which implies that the average living standards rose over the survey period. However, the benefits of economic growth were not distributed equally. The extent to which the poor benefited from economic growth (about 1.13 million people rose above the poverty line) is therefore an issue of considerable policy interest. This paper focuses on the sub-groups of population by social and economic breakdown to understand which groups of people benefited from the economic reforms and which groups did not. The welfare changes that have taken place in each household is decomposed to facilitate the analysis of policy consequences of the economic measure introduced. However, unlike some other studies, this analysis does not adopt a formal general equilibrium model; instead it tries to understand each issue in a partial equilibrium setting. Although this might have disadvantages in terms of deriving economy-wide relevant policy lessons, it has the advantage of enabling the data to be fully utilized for each policy consideration. It is hoped that this will provide policy makers with relevant information for assessing the impact of past policies and designing new policies towards reducing poverty.

For the analysis, detailed price indices were developed to be used in conjunction with the household expenditure data used in this study. The methodology used in this exercise is similar to one utilized in other countries (World Bank, 1990; Ravallion, 1993). Since the main redistributive feature of the adjustment process was a shift in the rural-urban terms of trade towards rural areas, the effects can be highlighted by disaggregating results along rural/urban and (geographical) regional dimensions. However, for policy relevant analysis, it is important to identify even further, where poverty and welfare effects were concentrated, by looking at who were the losers and gainers. As this study is concerned with understanding how the overall incidence, depth and severity of poverty has evolved, and what changes may have occurred in the

1/ See Appendix 4, for previous research on poverty in Nigeria.

regional and socioeconomic patterns of poverty, the results are disaggregated by socio-economic groups.

This paper is made up of six sections, including the present Introduction section. Section II looks at the sources of data used for the study. Section III looks into household income and expenditure distribution in Nigeria and provides an interpretation of poverty indices and the calculation of a relative poverty line for Nigeria. Section IV makes up the core of this paper, presenting the spatial characteristics of poverty in Nigeria and how they have evolved over a seven year period from 1985 to 1992, indicating in which regions and states the poor are located in and the extent and severity of their poverty; the basic demographic characteristics of the poor including time use and employment patterns, describing in detail how these characteristics have evolved over the period; and how the poor feature in various sectors of the economy and the poverty decompositions, vulnerability and targeting; discusses how the changes in poverty could be explained by factors that are growth-related and those that are due to redistribution. Section V discusses the evolution of expenditures in Nigeria and explains how the patterns of expenditure correspond to poverty, by decomposing the sources of expenditure. Section VI concludes with some final remarks.

2. NATIONAL CONSUMER SURVEY

The main data sets used in this study were collected by the Federal Office of Statistics (FOS) of Nigeria under the National Integrated Survey of Households (NISH). Both the 1985/86 and 1992/93 surveys were used to construct the poverty profile and consequent analysis. Both surveys start in April of the first year and end in March of the following year. The main objective of the data set is to provide periodic information to revise the consumer price index. The data on income is used to prepare a system of national accounts. The expenditure data and socio-economic information are used to assess the impact of policy on general consumption patterns. The coverage of the data set is not as wide as one would wish, for detailed welfare and poverty analysis. For example, the surveys do not gather data to help analyze the production patterns of the poor, for the rural areas, the crop mix, the quality of their land, the value of their assets such as livestock, or even the degree to which they rely on wage labor compared to better off farmers. There is no information on the asset base typical of the poor and the sort of assets the poor lose first, when coping with survival crises. The lack of these indicators makes it difficult to build up a comprehensive picture of the capabilities and resources of the poor - in terms of physical assets and human resource endowment.

The 1985/86 sample is designed to be nationally representative. A two-stage stratified sample design is used. In the first stage, 1224 enumeration areas (EAs) were selected with probability proportional to the number of census households in the area. Stratification is done on rural/urban and state of residence basis. A total of 70 EAs comprising 40 from urban and 30 from rural were selected. From each EA 20 households were selected. In the second stage, sampled areas were randomly allocated to each month with 4 urban and 3 rural EAs.

The 1992/93 was based on the sample design of 1987 which had 22 states. In each state a total of 120 EAs, 48 urban, 12 semi-urban, and 60 rural, were studied. These 120 EAs are allocated over the 12 survey months of the year covering 10 EAs in the ratio of 5:4:1 for rural, urban and semi-urban respectively in each state. Otherwise the sample was similar in design to the 1985/86 survey.

The Sample was weighted on the basis of the probability of selecting an EA within a state and choosing a household within an EA. A diary was given to each household to record flows of income to and expenditure from the household within the reference period or reference month2/. Field staff usually made daily visits to each household to ensure quality of entry and also to help those households who have no one literate to fill in the diary. This information was then transferred on a daily basis to the enumerator's memo book. The enumerator's book was then deposited in the field office where it was checked for quality and consistency by the supervisor.

The survey collected information on the following items on each household:

(a) Household Demographic Statistics: age, gender, location and type of housing of the household.

(b) Household Expenditure: Expenditure on all goods and services incurred by the household during the survey period. It also includes all monetary transactions (savings, donations and Esusu3/ contributions)

(c) Imputed Rent on owner-occupied and rent-free dwelling

(d) Cash Income: Income from wages, overtime, bonuses, professional fees that is received by the household.

3. THE MEASUREMENT OF WELFARE AND POVERTY

3.1 Household Expenditure

The measurement of household welfare or standard of living is a question which has not been resolved completely (Sen, 1987). There are many ways one could go about addressing this issue depending on the context, need and availability of information. Since quality of life has to

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2/ "The sampling unit of the survey is the household defined as all persons living under the same roof and having a common eating arrangement. The boarders are included as members of the household and lodgers are excluded. Members of the household who are temporarily absent are included". See "Social Statistics in Nigeria", Federal Office of Statistics (FOS), Nigeria, 1980, p1.

3/ Esusu refers to a system whereby a group of individuals or family gets together either on a weekly, biweekly or monthly basis, and each person contributes a certain sum of money, usually the same amount per individual. This is given on a rotating basis to each individual in the group. This results in a large sum of money which the individual can invest or simply save. It is worth noting that there might be differences in the arrangements in different regions, although fundamentally it is similar in effect.

take into consideration all direct and indirect consumption, both tangible and intangible items, measuring welfare has become a daunting task.. The most common a single indicator of welfare in the literature is to generate value of consumption basket both market purchases and consumption of own production, using appropriate price measures. In the present case, since expenditure is expressed only in terms of value there is no need to construct a vector of prices which then can be used to convert the quantity information into a value. Nominal figures were first deflated with regional price index, in order to make expenditure figures comparable within the two periods. Subsequently, all expenditures of both surveys were expressed in constant 1985 Naira.

The measure of household welfare used in the present analysis is the household total expenditure expressed in terms of per person. The attractiveness of using this measure as a welfare indicator as opposed to income has been well emphasized in the literature. What is needed is a measure of "permanent income" which is devoid of short-term income fluctuations. Hence consumption which reflects substitution between current and future consumption through savings and therefore is less prone to volatility generated by short-term fluctuations in income, and would be the best indicator of permanent income. In the present exercise, total expenditure is used to measure household welfare.

It is important that the welfare measure takes into consideration the size and composition of the household to be truly representative of each household. However, this involves construction of an endogenous scale, namely the adult equivalence scale, which is a difficult conceptual exercise with substantial data requirements at the household level, which do not exist in the present data base (see Deaton and Muellbauer, 1980). Hence, the calculation of such a scale is not attempted in this paper. A more standard measure of per capita expenditure is used, which is derived by dividing the total household expenditure by the size of each household.

Two other measures which are used in measuring household welfare are per capita food expenditure and the share of expenditure devoted to food. The former has been preferred because non-food expenditure is harder to measure than food expenditure. Food expenditure might thus represent a better indicator of actual standard of living than total expenditure. But the disadvantage is that non-food expenditure which is not generally proportionally related to food expenditure will not be factored into the analysis and might distort the conclusions. The latter measure, food share, is justified on the basis of Engel's Law, which says that the proportion of expenditure devoted to food will fall as total expenditure increases, and therefore can be used as a proxy for measurement of living standards. The disadvantage is that Engle's Law need not necessarily hold for each segment and socio economic grouping of the population and does not enable comparison of the relative welfare levels of various groups which is important for policy purposes.

3.2 Price Index

In order to use total expenditure as the basis of standard of living we need to adjust the indicator needs to be adjusted by correcting for regional price differences. Since different households face different prices, either because they are located in different regions and/or

because they are surveyed at different periods in time, we need to take this into account before comparing living standards through total expenditure measure. It becomes extremely difficult to obtain information on the prices of items from various markets. This paper uses the best information that could be generated.

In order to express expenditure in constant prices of a reference region and reference time period we could use Laspeyres index or Paasche index. The Paasche index is more attractive because it gives more easily interpretable Laspeyres index of real expenditure when it is used to deflate nominal expenditure. The Paasche index may be constructed as follows:

$$\pi_{ir} = \frac{1}{\Sigma w_{ir} P_i \frac{1}{P_{ir}}}$$

Where P_{ir} is price of commodity i (i=1.....n) in region r (r=1.....R) and time period t (t=1....T), P_{il} refers to price of same commodity in the reference region (r-1), W_{ir} is the share of total expenditure in the region r accounted by commodity i and p_{ir} is the Paasche cost of living index for region r in time period t.

In the case of 1985/86, prices for 50 different items were used to construct weights using the consumption proportion of households who fell below 30 percent of average household expenditure in constructing the state wide indices. The latter choice was to make it relevant for analyzing the quality of life of the poor people. These were in turn used to deflate the household expenditure figures which we used for the poverty analysis. In the case of 1992/93, it was possible to obtain prices for only 30 items.

Since the analysis of poverty is inter-temporal, regional price indices are allowed to reflect temporal differences. Since the same amount of price disaggregation information is not available in both periods, it is difficult to construct price indices for each item relative to a reference time period. Therefore, price indices are constructed for each state using a "poverty weighted" Consumer Price Index (CPI) in contrast to a standard CPI, while maintaining the 1985/86 regional price variation.

3.3 Poverty Lines in Nigeria

The poverty analysis of any country requires establishing a poverty line which then would be used in conjunction with welfare indicators. There are two main broad approaches to the construction of a poverty line, namely absolute and relative poverty line. The absolute poverty line is based on minimum nutritional requirement which is converted into minimum food expenses, to this is added may be considered necessary non-food expenses. This poverty line therefore would be influenced by differing food habits along with social, cultural and economic conventions. Hence the absolute poverty line is relative in one sense.

The relative poverty line is more visibly arbitrary. One approach has been to determine some amount which demarcates a preselected percent of the population. Another approach that has found increased acceptance is the taking of an arbitrary proportion of the mean as poverty

line (Boateng *et al*, 1992). For instance one-third and two-third of means have been regularly used. In this document we use the latter approach and construct a relative poverty line since there is no absolute poverty line available for Nigeria.

The poverty lines that have been constructed for Nigeria include the following: The International Labor Organization (ILO) under the JASPA study (1982) constructed poverty lines on the basis of 1978 income data which amounted to 65 Naira per month per family in urban area and 35 Naira per month per family in rural areas. The poverty line assumed in the case of urban households 50 Naira per month per family for food and the rest for housing, clothing and the rest, and set the rural prices to be 40 percent below urban level. According to these guidelines it was estimated that 34 percent were poor in urban areas (instead of 15 percent in 1974), while 40 percent were below the poverty line in rural area. The other study is the World Bank Food Security Study of 1989 which draws its results on the basis of unprocessed 1985/86 FOS data.4/ Poverty lines are set at N150 for urban and N110 for rural using only food expenditures. This leads to 22.2 percent urban households and 17.2 percent of rural households falling below the poverty line or are food insecure, resulting in around 18 percent of all households nationally being poor.

Bevan et al (1988) drew an absolute rural poverty line based on 1952/53 data dividing the bottom 20 percent and 40 percent of the population. They concluded that in 1983/84 there were 17 percent and 58 percent respectively under those lines. This indicates that "moderate" poverty has worsened although the "hard core" poverty has not changed dramatically.

Both UNICEF and ILO have been concerned with developing poverty analyses. The former has been mainly interested in the qualitative side of the poverty analysis, while the latter has done some of the early work on poverty using survey data, as noted above .

In addition, there have been various other small scale studies or revisions of poverty lines which led to different proportions falling below poverty lines. For instance a World Bank(1994) study, constructed a poverty line which was based on earlier studies, and concluded that 57.7 percent of the urban population and 66.2 percent of then rural population lived under poverty.

3.4 Basic Needs Approach to Poverty

As mentioned earlier many studies have attempted to understand poverty through indicators of basic needs. One of the first issues that needs to be resolved is what is covered by "basic needs". In the Nigerian context there have been some lengthy exchange of views among scholars and policy makers on this issue. One of the early definitions of basic needs was put forward by the ILO (1981) entitled "First things First" which included food, water, shelter, health

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4/ The present analysis is based on the same data set, except that now it is processed, edited and allowance has been made for regional price differences and so forth before the poverty analysis. According to the current estimate 49.5 percent of the rural population and 31.7 percent of the urban population fell below the poverty line, resulting in around 43 percent of the national population being poor. It is worth noting that poor households are much larger than non-poor households and this also contributes to the difference in household versus population percentage under poverty line, apart from the differences in poverty lines used.

service, learning and work. Following that were two other proponents, the first by CSER (1982) which identified food, nutrition, health, education, housing and the environment, while the second was by the NISER (1986) which identified food, housing, health services, public transportation, access to information and potable water.

The first comprehensive study on Nigerian poverty using a basic needs approach was done by Stewart (1985). Apart from stating some of the figures on basic needs she alludes to the fact that there is substantial under-reporting in basic needs indicators, especially in child mortality, disease and morbidity. She also states that there is positive urban bias in government expenditure for basic services. Through a descriptive discussion on incomes and expenditures she concludes that half the population has significantly inadequate income to meet basic food needs, let alone basic services.

An ILO study (1981) led by Seers also provided some basic indicators of the state of basic services especially in relation to the poor. Most of the discussion was at a national aggregate level. Other than showing the general adverse situation in the rural areas and agricultural inequality, potable water supply, it also refers to issues of nutrition. For instance, it states that 30 percent in Oyo state are malnourished. It also states that in Lagos more than 72 percent of the households live in one room houses. It is also highlighted that access to health services may vary from two-thirds of the population in the South to one-third in the North.

Other than these broad based studies many other micro studies, especially by Nigerians, have been conducted. Sada (1975) using neighborhood incomes as a base measure shows urban poverty to be 65 percent in Lagos in 1972. Oshuntogun (1975) provides a profile of the poor in five villages in Western state. On the other hand Adeyokunnu (1975) finds that despite 85 percent of expenditure being allocated to food it is not adequate to meet basic daily nutritional needs. There is also a study by IFAD (1992) which states that 51 percent of the rural population lived below the poverty line as of 1988.

In the recent past a detailed study in selected districts by the Central Bank of Nigeria (CBN) /NISER group (1992) has some interesting findings about poverty and welfare pre/post structural adjustment program (SAP). Apart from showing some general patterns in relation to income levels by various occupational groups it also shows that household expenditures on social services have increased from an average of 44.3 percent pre-SAP to 52 percent post-SAP. Real income per household has declined precipitously, major declines being noted for farmers. Government social expenditures have increased on average by about 15 percent. In terms of nutrition there is evidence to the effect that there is less meat and more bean consumption and calorie deficiences.

3.5 Poverty Line

Whatever approach is chosen to analyze poverty, the poverty line is an arbitrary divider of poor and non-poor. Hence it has become common to do sensitivity analysis whereby different poverty lines are established around the chosen line to see how sensitive is the number of poor to the different lines. Therefore it is important to construct a poverty line which has relevance for policy makers and which will be deemed to be an acceptable cut-off point. Also it is important

to do sensitivity tests using alternative measures to test the robustness of the poverty line. This paper refers to two alternative measures which have been used in other poverty analyses. The first is the minimum wage of the target group converted appropriately to account for per capita level. The second is the concept of "generalized poverty line" proposed in World Development Report (1990), which are set at US$370 and US$275 per person per year in 1985 prices. These are converted to comparable indicators using currency conversion factors developed by the World Bank. The latter have the attractiveness of being comparable across countries and useful for relative welfare analysis across countries.

In inter-temporal poverty analysis, even if a relative poverty line is chosen for the initial period, by keeping it constant when looking at other periods of time the line becomes absolute. Also, this paper is more interested in the distribution of poverty within a country than its level. The former is more useful for orienting poverty alleviation measures towards those groups most affected by poverty. Sensitivity analysis is also used to make sure that the distribution of poverty is not highly sensitive to the exact choice of the poverty line.

3.6 Poverty Indices

It has become customary to use the so called P-alpha measures in analyzing poverty. The measures relate to different dimensions of the incidence of poverty. P_0, P_1, and P_2 and are used for headcount, depth and severity of poverty respectively.

The mathematical formulation and poverty measures described below, are drawn from Foster, Greer and Thorbecke (1984). The three measure are all based on a single formula, but each index puts different weights on the degree to which a household or individual falls below the poverty line. To see how the measures are defined, let consumption or household expenditures be arranged in ascending order, from the poorest Y_1, the next poorest Y_2..... with the least poor Y_q. The poverty gap index is defined as follows:

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z - Y_i}{Z}\right)^\alpha$$

where Z = the poverty line; q = the number of individuals below the poverty line; N = the total number of individuals in the reference population; Y_i = the expenditure of the household in which individual i lives; α = the Forster-Greer-Thorbecke (FGT) index and takes on the values 0, 1, 2. The quantity in parentheses is the proportionate shortfall of income below the poverty line. This quantity is raised to a power a. By increasing the value of a, the "aversion" to poverty as measured by the index is also increased (See Boateng *et al*, 1992).

Suppose $\alpha = 0$, so that the index measures no aversion to poverty, then

$$P_0 = \frac{1}{n}q = \frac{q}{n}$$

$P_0 = H = q/n$ is the proportion of the population that falls below the poverty line. This is the "headcount Ratio" defined as the proportion of the population for whom consumption falls

below poverty line, in a population of n. Then the headcount ratio is: H = q/n = the proportion of the population deemed to be poor. For example if there are 10 poor people out of 100, the ratio H = 10/100 or 0.1.

Suppose now that $\alpha = 1$ so that the "aversion to poverty" is increased, then

$$P_1 = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z - Y_i}{Z}\right)^1$$

This multiplies the "head-count ratio" or the proportion of the population below the poverty line, i.e. H, by the income or expenditure gap between the average poor person and the poverty line. To continue the example, if each of the 10 people above had an income of 40 percent of the poverty line, then the P2 measure would be 10/100 * 0.4 which equals 0.04. To better understand this, suppose q people are poor, i.e,.

$P_1 = q/n * (Z-Y)/Z = HI$, where $H = q/n$ and $I = (Z-Y)/Z$.

Suppose now that $\alpha = 2$. This weights the poverty of the poorest individual more heavily than those just slightly below the poverty line. This is done by squaring the gap between their incomes and the poverty line in order to increase its weight in the overall poverty measure.

$$P_\alpha = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z - Y_i}{Z}\right)^2$$

The P_a measure has the further advantage of being decomposable. For example, the national level measure of poverty can be expressed as the sum of regional measures weighted by the population share of each region:

$$P_\alpha = \Sigma k_j P_{\alpha_j}$$

where j=1.....m regions

k_j= population share of region j.

This in turn enables us to calculate the contribution c_j of each region to national poverty.

$$c_j = \frac{k_j P_{\alpha_j}}{P_\alpha}$$

This measure has direct relevance for policy. This enables us to understand the impact of various policy measures in different groups and regions of the country. Also the knowledge about the share of each region or group in total poverty is essential for targeted interventions.

Having discussed the framework of our analysis we now have to outline the implementation of the framework and issues ensuing from it. The data set for this study was obtained from the National Integrated Survey of Households, undertaken by the Federal Office of Statistics (FOS). We have already noted the coverage of the data set and its main characteristics and now turn to a more practical look at the data, given the proposed framework for poverty analysis.

3.7 Macro-economic Background

Since the start of the adjustment program in 1986, a growing debate has emerged as to the efficiency of these programs to bring about sustainable growth, and as to their short and long term impact on poverty and basic needs fulfillment. It is much less clear what the impact has been on the poor and the social sector in particular. Initial claims of a strong negative impact were based on inadequate empirical evidence and a too limited conceptual approach. This section presents some macro-economic indicators to evaluate their change over the period 1985 to 1993.

Table 3.1: Nominal and Real GDP Growth, 1985-92

	1985	1986	1987	1988	1989	1990	1991	1992	Average
Nominal GDP at market prices (₦ billion)	72.4	73.1	108.9	145.2	224.8	260.8	324.0	549.8	244.3
Real GDP at market prices (₦ billion)	108.3	110.3	108.9	119.3	128.4	138.4	145.9	150.0	128.8
Real Growth rates (in percent)	9.8	1.8	-1.3	9.6	7.6	7.8	5.4	2.8	3.8
Real per capita private consumption (in 1987 Naira)	1117	1003	852	864	893	878	877	851	917

Source: Nigeria Unified Survey, March 1996

1. Table 3.1 shows that in 1986 nominal GDP grew by 1.8 percent, but the growth rate of real GDP was negative in 1987 at -1.3 percent. However, GDP growth picked up and reached a high of 9.6 percent in 1988 and has stabilized at 7.8 percent, 5.4 percent and 2.8 percent in 1990, 1991, and 1992 respectively. In 1993, the relative constancy in the growth rate from the prior year is attributed to the recovery in the services sector, which offset the steady but not increasing oil production levels (World Bank, 1994).

4. EVOLUTION OF POVERTY IN NIGERIA

4.1 The Evolution of Mean Expenditure in Nigeria

It is daunting to try to analyze income distribution in Nigeria. More so than in many developing countries, the availability of relevant data constitutes one of the most serious obstacles to analysis. We do not have an accepted population distribution for Nigeria by age and sex. Almost no national aggregate data exists for the rural areas that would allow us to make a confident judgement about intra-sectoral income distribution. Furthermore, Nigeria is an extremely heterogeneous society. We cannot expect that culturally associated understandings of what constitutes wealth and poverty and the ways people are grouped will necessarily be the same throughout the country. Thus if we want to understand the import of interpersonal, interstate and intersectoral income distinctions, this necessitates sensitivity to the variety of meanings attached to wealth and poverty in different parts of the country.

A number of tentative studies do give various measures of concentration of income in Nigeria or parts of Nigeria. Teriba and Philips (1971) using data from the income tax returns of

1966/67 in the former Western state, put the concentration coefficient (or Gini) at 0.47. Adeboye in a survey of 1635 households conducted in 1967 in all states except three, of the then Eastern Region, found a concentration ratio of 0.58. A number of scholars doing cross-national studies have presented various measures of inequality in Nigeria. Adelman and Morris (1971) presented data for Nigeria showing the richest 5 percent accounting for over 38 percent of income in Nigeria and the poorest 20 percent accounting for 7 percent of income in Nigeria. Odafalo (1981) gave the poorest 34 percent of taxpayers about 7 percent of income and concluded that the degree of inequality in Nigeria was widening.

There has been substantial inquiry into the pattern of income distribution in Nigeria. In an edited volume (Bienen and Diejomoah, 1981) many authors address this issue in detail using fragmented studies and national survey, a study which has attracted many criticisms. Bienen estimates that the national income inequality coefficient has moved from 0.5 in 1960 to 0.7 in 1975/76. He also speculates the worsening of it with the oil boom. There have been studies indicating the pattern of income distribution as far back as 1960 by Adelman and Morris (1971) and Vielrose (1963), although due to different methodologies and sample differences the figures do not compare very well. Anusionwu (1981) estimated income distribution by state using public sector employees for 1976 and gives Gini coefficients of 0.442 for Oyo, 0.494 for Niger, 0.496 for Bendel, 0.37 for Cross River and 0.524 for Sokoto. Most of the studies agree that rural inequality is similar to urban inequality. Aigbokhan (1988), who did the other major study on income distribution shows a decline in income inequality from 0.51 in 1960 to 0.37 in 1980 using consumer surveys. Studies by Collier (1983) and Bevan et al (1988) also provide estimates of changes in income composition and income inequality. Collier provides income inequality and land inequality in terms of different crop growers and regions, while Bevan *et al* provide intra-rural and inter-temporal income distribution.

Another issue of interest has been the general distribution of incomes between urban and rural areas. Bevan *et al*(1988) indicated using nominal expenditure differentials, that between 1950 and 1980, there was a considerable expenditure differential in favor of urban residents because food was cheaper in the rural but manufactures were dearer. Between 1952 and 1954 per capita urban expenditure were 81 percent higher than rural per capita expenditures. It is worth noting that according to the present analysis, in 1985/86 urban per capita expenditures were only 32 percent higher than rural per capita expenditures, and in 1992/93 it was 13.5 percent higher. Faruqee (1993) argues that the gap which was in favor of urban areas at 58 percent in 1980/81 reduced to 8 percent in 1985/86 and reversed to be in favor of rural areas after 1986.

Most of the discussion on evolution of income (or expenditures) distribution included in here will focus on two surveys, the 1985/86 and 1992/93 National Consumer Survey. The first presentations in Table 4.1 below show the mean per capita expenditure distribution of households by expenditure deciles for 1985/86 and 1992/93. Table 4.1 shows that the bottom five percent had a large declining mean per capita expenditure from ₦ 118.11 to ₦ 70.24, between 1985/86 and 1992/93. The table also shows that households in the second five percent had average per capita expenditures of ₦ 175.22 in 1985/86 and a mean expenditure of ₦ 140.5 in 1992/93, a decline of almost 20 percent. The households in the third to tenth deciles show mean per capita expenditures increasing between the two periods from 5 percent in the third

decile to 47.5 percent in the tenth decile. The highest increase is in the last decile with 47.5 percent within the seven years of this study. Overall, mean per capita expenditures increased by 34 percent over the seven year period.

However, overall income distribution as shown by the Gini coefficient worsened slightly. In 1985/86 the Gini coefficient was 0.387, the value increased to 0.45 in 1992/93. The table also shows that in 1985/86 there were 35.8 million people (or 43 percent) in poverty as defined by households in which individuals live on less than ₦ 395 per annum or almost a dollar a day. In 1992/93 the population in poverty was 34.7 million individuals or 34.1 percent.

Table 4.1: Distribution of Per Capita Expenditure by Population Deciles (Constant 1985/86 Naira Per Annum)

Decile	1985/86 PCE	1992/93 PCE	Percentage Change
First five percent	118.11	70.24	-40.5
Second five percent	175.22	140.5	-19.8
Second Decile	229.47	210.94	-8.1
Third Decile	289.98	304.58	5.0
Fourth Decile	351.86	404.13	14.9
Fifth Decile	421.40	505.68	20.0
Sixth Decile	512.03	633.59	23.7
Seventh Decile	624.13	806.09	29.2
Eighth Decile	769.02	1050.90	36.6
Ninth Decile	998.29	1424.91	42.7
Tenth Decile	1688.69	2489.99	47.5
Mean PCE	592.81	792.64	33.7
Moderate Poverty Line (2/3 mean PCE in 1985)	395.41	395.41	---
Core Poverty Line (1/3 mean PCE in 1985)	197.71	197.71	---
Moderate Poverty (%)	31.0	20.5	-10.5
Core Poverty (%)	12.0	13.6	+1.6
Non Poverty (%)	57.0	65.1	+8.1
Gini Index	0.387	0.450	16.0

Source: NCS, 1985/86 and 1992/93.

Table 4.2 shows the distribution by decile of mean per capita household food expenditure. Except for the bottom two deciles, all others indicate an increase in real food expenditures over the seven year period. Overall, there was 41.7 percent increase in mean food expenditure compared to a 34 percent increase in mean per capita total expenditure.

Table 4.1 shows mean per capita expenditure by deciles in both periods. It is clear from the table that except for the first two deciles, incomes have increased in all deciles from 5.0 percent in the third decile to 47.5 percent in the tenth decile. Although the Average per capita expenditure (PCE) has increased by 34 percent nationally, it is important to note that income distribution has worsened with a Gini coefficient of 0.387 to 0.45. Figure 4.1 shows that the proportion of total expenditure by each decile for both periods. It is notable that every decile has a lower share in 1992/93 compared to 1985/86, except the tenth decile. This is also reflected in

the Gini coefficient. Figure 4.2 shows the Lorenz curves for Rural, Urban excluding Lagos, Lagos Urban and Nigeria for 1985/86 and 1992/93. The figure shows that Lagos urban distribution has actually improved. The worsening in national income distribution is thus caused mainly by the worsening rural distribution. The Gini coefficients for rural, other urban and Lagos

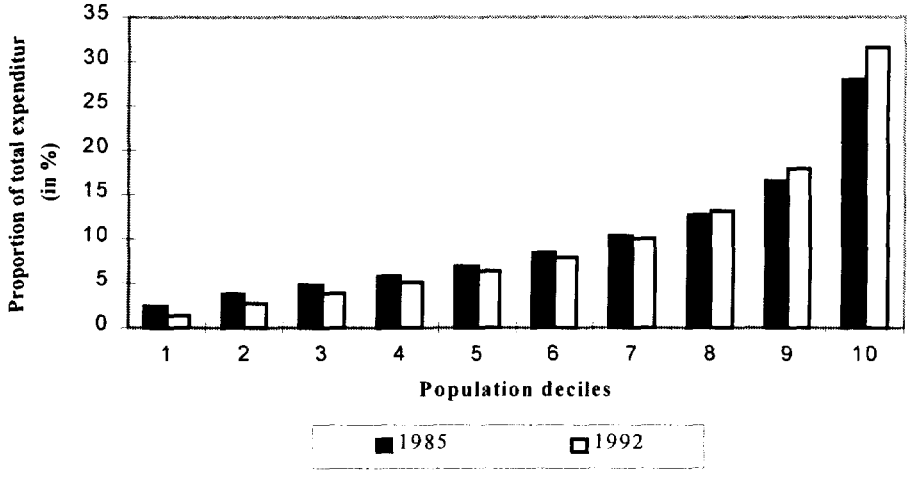
Table 4.2: Distribution of Per Capita Food Expenditure by Population Deciles (Constant 1985/86 Naira Per Annum

Decile	1985/86 PCE	1992/93 PCE	Percentage Change
First five percent	99.20	53.85	-45.7
Second five percent	145.89	110.41	-24.3
Second Decile	186.50	163.89	-12.1
Third Decile	224.17	236.95	5.7
Fourth Decile	260.98	309.41	18.5
Fifth Decile	295.78	374.01	26.45
Sixth Decile	353.27	461.17	30.54
Seventh Decile	408.63	567.06	38.77
Eighth Decile	482.14	698.77	44.93
Ninth Decile	595.65	947.83	59.13
Tenth Decile	1047.96	1472.48	40.51
Nigeria	391.63	554.92	41.7

Source: NCS, 1985/86 and 1992/93

urban are shown in Table 4.3. In Lagos urban, the Gini coefficient increased from 0.340 to 0.399. For other urban excluding Lagos, the value increased from 0.366 to 0.441 and in the rural areas, the Gini increased from 0.391 to 0.456 showing a worsening of income distribution. This worsening is reflected in the national Gini coefficient which increased from 0.387 to 0.450.

Fig 4.1: Evolution of Household Expenditures by Expenditure deciles



Tables 4.3 through 4.5 show the changes in PCE between 1985 and 1992 on a regional basis. For the country as a whole, real household expenditure per capita increased on average by 34 percent over the 1985-92 period. This is consistent with the real positive growth in GDP during this period, and with national account figures on aggregate consumption. The largest increase was recorded in rural areas with 46.8 percent despite a worsening in their distribution. However, other urban areas have also shown an increase in expenditure (25.6 percent) below the national average and even below rural expenditures. Table 4.4 and Table 4.5 show changes by agro-climatic belts together with rural/urban disaggregation. The largest increase in per capita expenditures is in the southern belt region of the country, where per capita expenditures increased from ₦ 660.63 in 1985/86 to ₦ 934.48 in 1992/93. This reflects an increase of 41.4 percent. This increase is followed by middle belt with 40.5 percent. The Northern belt shows the smallest per capita increase of 17.26 percent. Table 4.5 shows the regional changes by urban/ rural split. It shows that the increase in the Middle belt, was due to a large rural increase of 57 percent. The small increase in the Northern belt however, is caused by a small decrease in urban incomes. Nationally, all rural areas show an increase of 46.8 percent compared to 16.08 percent for urban areas.

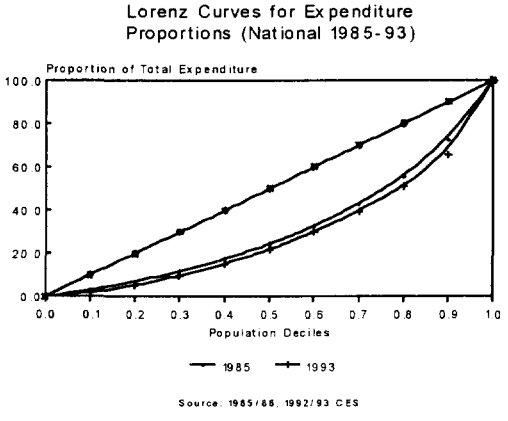
Table 4.3: Pattern of Real Household Per Capita Expenditures by Region

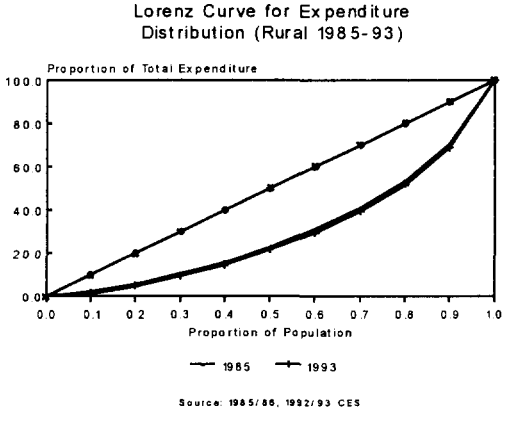
Region	1985/86		1992/93		
	PCE	Gini	PCE	Percentage change	Gini
Lagos Urban	762.67	0.340	748.62	-1.84	0.399
Other Urban	650.28	0.366	816.71	25.59	0.441
Rural	531.28	0.391	779.96	46.81	0.456
Nigeria	592.81	0.387	792.64	33.7	0.450

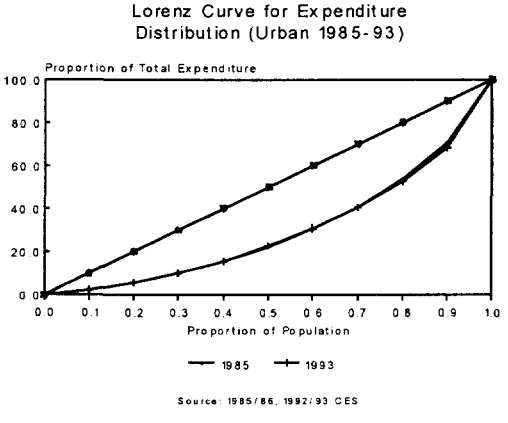
Table 4.4: Pattern of Real Household Per Capita Expenditures by Geographic Regions

Geographic Region	1985/86 PCE	1992/93 PCE	Percentage change
Northern Belt	540.58	633.91	17.26
Middle Belt	536.15	753.56	40.55
Southern Belt	660.63	934.48	41.45
Nigeria	592.81	792.64	33.71

Figure 4.2: Lorenz Curves for Mean per Capita Expenditures by Region







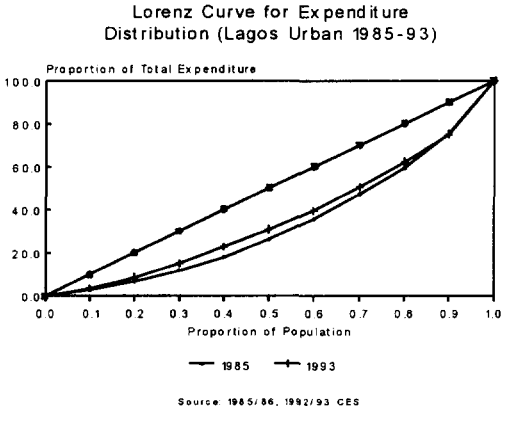


Table 4.5: Rural/Urban Pattern of Real Household Per Capita Expenditures by Geographic Region

Region	RURAL			URBAN		
	1985/86	1992/93	Percentage change	1985/86	1992/93	Percentage change
Northern	476.58	629.75	32.14	682.63	643.4	-5.75
Middle Belt	488.44	766.11	56.85	631.74	732.67	15.98
Southern	607.68	936.70	54.14	732.98	931.78	27.12
Nigeria	531.28	779.96	46.81	700.35	812.95	16.08

Source: NCS, 1985/86 and 1992/93.

4.2 Evolution of Regional Poverty in Nigeria

This section examines the evolution of poverty between 1985 and 1992. In analyzing the extent of poverty, it would generally be preferable to use individuals rather than household as the unit of analysis. Re-weighting the data according to household size is an alternative, but this makes the assumption that consumption is evenly distributed within the households. Given that there is inadequate information to construct adult equivalence scales, Average per capita expenditure (PCE) is used as the basis for poverty analysis.

The evolution of regional poverty is shown in Table 4.6. In 1992 about 23 million people (36.4 percent) were poor in the rural areas, accounting for about 66 percent of the poor in Nigeria. There was a 13 percentage point decline in rural headcount or the number of poor. However, taking into consideration all below the poverty line in Nigeria, rural areas accounted for about 73 percent of the poor in 1985 and 66 percent of the poor in 1992. In 1985 the depth of poverty was about 30 percent higher in the rural than in the urban areas. This value however, despite the decline in poverty in 1992, had increased to two times the depth in "Other urban" excluding Lagos and almost 17 times the depth in Lagos urban. The severity of poverty in the rural areas in 1985 was three times as high as it was for Lagos. In 1992, the value for rural was over 4 times that of Lagos.

Table 4.7 shows the evolution of regional core or extreme poverty. The table shows that the incidence of extreme poverty increased slightly in the seven year period of this study. The depth of extreme poverty and the severity of extreme poverty also increased during this period. The increase in the severity of extreme poverty was observed to be more in the urban than in rural areas. However, the rural areas continue to contribute the largest share to all the indicators.

Table 4.6: Poverty Incidence in Nigeria by Region, 1985-93 (Poverty Line=₦395.41)

REGION	1985/86			1992/93		
	P_0	P_1	P_2	P_0	P_1	P_2
Other Urban (Excluding Lagos)	0.320	0.070	0.038	0.306	0.101	0.048
Rural	0.495	0.189	0.095	0.364	0.122	0.066
Lagos Urban	0.240	0.070	0.032	0.279	0.161	0.095
All Nigeria	0.430	0.157	0.079	0.341	0.147	0.085

Rural/Urban Decomposition of Poverty Incidence

REGION	1985/86			1992/93		
	P_0	P_1	P_2	P_0	P_1	P_2
Other Urban (Excluding Lagos)	26.3	14.8	12.4	32.6	26.9	25.5
Rural	73.1	84.9	87.3	65.7	71.9	73.5
Lagos Urban	0.6	0.3	0.3	1.7	1.2	0.1
All Nigeria	100.0	100.0	100.0	100.0	100.0	100.0

Source: NCS, 1985/86 and 1992/93.

Table 4.7: Incidence of Extreme Poverty in Nigeria by Region, 1985-93 Poverty Line=₦197.71)

REGION	1985/86			1992/93		
	P_0	P_1	P_2	P_0	P_1	P_2
Other Urban (Excluding Lagos)	0.049	0.009	0.003	0.111	0.037	0.018
Rural	0.161	0.042	0.017	0.154	0.060	0.032
Lagos Urban	0.043	0.015	0.006	0.072	0.021	0.008
All Nigeria	0.120	0.042	0.016	0.136	0.085	0.034

Rural/Urban Decomposition of Incidence of Extreme Poverty

REGION	1985/86			1992/93		
	P_0	P_1	P_2	P_0	P_1	P_2
Other Urban (Excluding Lagos)	14.4	3.5	2.6	29.6	20.7	19.4
Rural	85.2	96.3	97.2	69.3	78.7	80.2
Lagos Urban	0.4	0.2	0.2	1.1	0.5	0.3
All Nigeria	100.0	100.0	100.0	100.0	100.0	100.0

Source: NCS, 1985/86 and 1992/93.

As seen in Table 4.8, rural Southern belt has the largest decline (16.6 percentage points) in headcount, 4.2 percentage points decline in depth and 0.9 percentage points decline in

severity. Also, the Northern belt has a 9.1 percentage points decline in headcount, 2.1 percentage points decline in depth and 0.4 percentage points increase in severity.

Table 4.8: Rural/Urban Poverty Incidence in Nigeria by Geographical Belts, 1985-93 (Poverty Line=₦395.41)

RURAL						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	0.555	0.219	0.112	0.464	0.198	0.116
Middle Belt	0.521	0.219	0.120	0.385	0.179	0.112
South Belt	0.420	0.144	0.066	0.254	0.102	0.057
All Rural	*0.495*	*0.169*	*0.098*	*0.364*	*0.167*	*0.098*

URBAN						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	0.331	0.105	0.047	0.417	0.180	0.095
Middle Belt	0.381	0.117	0.049	0.371	0.153	0.086
South	0.289	0.075	0.028	0.221	0.093	0.050
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Note: Northern belt comprises: Bauchi, Borno, Sokoto, and Kano.
Middle belt comprises: Kaduna, Benue, Kwara, FCT, Niger and Plateau states.
Southern belt comprises: Anambra, Cross River, Gongola, Imo, Bendel, Lagos, Ogun, Ondo, Rivers and Oyo States.

Source: NCS, 1985/86 and 1992/93.

Looking at the urban areas in Table 4.8, the headcount in northern belt has increased by 8.1 points and the depth of poverty by 7.5 points. Also, the southern belt shows a higher decline of 6.8 points in headcount compared to 1.0 point in middle belt. Table 4.9 also shows that despite the decline in headcount in the middle belt, its contribution to urban headcount increased by 1 percentage point. In the south, which had displayed a larger decline in headcount there was a decline of 8.3 percentage points in its contribution to urban headcount from 46.7 points in 1986 to 38.4 points in 1992.

Table 4.9: Rural/Urban Poverty Decomposition by Geographical Regions 1985-93, (Poverty Line=₦395.41)

RURAL						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	46.8	52.8	53.4	51.3	50.84	60.24
Middle Belt	19.2	21.7	23.6	20.6	22.06	23.35
Southern	34.1	25.4	22.9	28.1	17.10	16.41
All Rural	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
URBAN						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	34.2	38.6	41.6	38.7	49.6	48.5
Middle	19.0	23.9	24.2	22.9	24.94	26.04
Southern	46.7	37.5	34.2	38.4	25.4	25.5
All Urban	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/93.

Tables 4.10 and 4.11 show the poverty incidence indicators by agroclimatic zones. In 1985, 54.9 percent was poor in rural north and 34.2 percent in urban north. In 1992, the corresponding figures are 44.2 percent and 40.3 percent respectively. The Southern region classified into Southwest and Southeast is very illuminating. Poverty in the cocoa producing rural Southern regions is the lowest. This comes out convincingly in Table 4.11, where rural Southwest contributes the least to national rural poverty with 17.1 percent in 1985 and 15.3 percent in 1992. Even in urban areas, the Southwest decline in poverty incidence is very pronounced. In terms of depth and severity of poverty, Southwest is performing well. Except for rural Southeast, where poverty severity has worsened over the seven year period, all indicators of agroclimatic zones show a general trend of improvement.

Table 4.12 shows the evolution in poverty measures, by state. Taking the head count (P_0) first, the table shows that Gongola, Cross River and Sokoto are the only states that show an increase in head count index of poverty during 1985/86-1992/93. The sharpest decline in head count (26%) was for the state of Bendel, Cross Rivers, Sokota are the states indicating an increase in the depth (P_1) of poverty. Six states however, show an increase in severity (P_2) of poverty during the seven year period of this study. The highest increase in P_2 (6.4 percentage points) occurred in Sokoto.

Table 4.10: Rural/Urban Poverty Incidence in Nigeria by Agro-climatic Zones, 1985-93 (Poverty Line=₦395.41)

RURAL						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	0.549	0.220	0.115	0.442	0.198	0.117
Southeast	0.434	0.158	0.075	0.260	0.117	0.070
Southwest	0.419	0.141	0.064	0.271	0.113	0.062
All Rural	*0.495*	*0.194*	*0.098*	*0.364*	*0.167*	*0.098*
URBAN						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	0.342	0.106	0.046	0.403	0.160	0.086
Southeast	0.273	0.072	0.027	0.226	0.097	0.057
Southwest	0.324	0.087	0.034	0.230	0.084	0.044
All Urban	*0.317*	*0.093*	*0.038*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93.

Table 4.11: Rural/Urban Poverty Decomposition by Agro-climatic Zones, 1985-93 (Poverty Line=₦395.41)

RURAL						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	61.8	70.3	72.5	67.9	56.1	78.8
Southeast	21.2	17.3	16.2	16.8	8.2	17.1
Southwest	17.1	12.4	11.3	15.3	7.2	4.1
All Rural	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
URBAN						
	1985/86			1992/93		
Region	P_0	P_1	P_2	P_0	P_1	P_2
Northern	48.4	55.5	58.4	57.6	71.3	68.5
Southeast	24.9	19.4	17.7	19.1	15.2	15.1
Southwest	26.7	25.1	23.9	23.2	13.5	16.4
All Urban	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/93.

Since the North did not show substantial improvements, one could use Table 4.12 to see which states did well and which did not. Focusing on the poverty measures of Bauchi, Kaduno, Kano and Sokoto in alphabetical order, Kaduna shows a 25.1 percentage points decline in headcount, 8.3 percentage points decline in depth and 3.4 percentage points in severity. The state of Bauchi shows 3.1 points decline in headcount, 1.1 points increase in depth and 0.1 percentage

points increase in severity. The state of Kano shows 2.5 percentage points in head count, 3.5 percentage points decline in depth and 2.8 percentage points decline in severity. State of Sokoto shows 5.7 points increase in headcount, 7.1 percentage points increased in depth and 6.4 percentage points increase in severity.

Table 4.13 shows that Sokoto was the highest contributor to all indicators in 1985, with a contribution of 12.5 percentage points to headcount, 14.1 percentage points to depth and 14.7 points to severity respectively. The values were very closely followed by Kano with 11.3, 11.5 and 10.9 percentage points for headcount, depth and severity respectively. Some states (Bauchi and Plateau) show large increases in contribution to all three indicators for the seven years covered in this study. These two states contribute the highest to poverty incidence, depth and severity even in 1992/93.

Table 4.12: Poverty Incidence in Nigeria by State, 1985-93 (Poverty Line=₦395.41)

	1985/86			1992/93		
STATE	P_0	P_1	P_2	P_0	P_1	P_2
Lagos (Urban)	0.240	0.070	0.032	0.279	0.009	0.003
FCT	0.000	0.000	0.000	0.495	0.245	0.157
Anambra	0.309	0.104	0.045	0.163	0.059	0.031
Bauchi	0.587	0.247	0.132	0.556	0.236	0.133
Bendel	0.417	0.146	0.067	0.162	0.061	0.033
Benue	0.460	0.183	0.093	0.368	0.176	0.114
Borno	0.421	0.168	0.087	0.418	0.185	0.108
Cross River	0.421	0.139	0.061	0.330	0.156	0.094
Gongola	0.488	0.191	0.098	0.317	0.129	0.068
Imo	0.322	0.101	0.045	0.144	0.066	0.040
Kaduna	0.498	0.180	0.087	0.247	0.097	0.053
Kano	0.483	0.164	0.076	0.508	0.199	0.104
Kwara	0.413	0.130	0.054	0.314	0.136	0.082
Lagos (Rural)	0.361	0.116	0.052	0.361	0.145	0.076
Niger	0.566	0.285	0.182	0.444	0.200	0.122
Ogun	0.454	0.145	0.062	0.263	0.097	0.048
Ondo	0.445	0.179	0.093	0.266	0.112	0.066
Oyo	0.315	0.072	0.024	0.229	0.088	0.047
Plateau	0.475	0.172	0.087	0.426	0.188	0.113
Rivers	0.358	0.097	0.036	0.379	0.158	0.088
Sokoto	0.469	0.185	0.094	0.526	0.256	0.158
All Nigeria	**0.430**	**0.157**	**0.079**	**0.341**	**0.147**	**0.085**

Source: NCS, 1985/86 and 1992/93.

Table 4.13: Decomposition of Poverty Incidence by State, 1985-93 (Poverty Line=₦395.41)

	1985/86			1992/93		
STATE	P_0	P_1	P_2	P_0	P_1	P_2
Lagos (Urban)	0.6	0.3	0.3	0.0	0.0	0.0
FCT	0.0	0.0	0.0	1.4	1.9	2.2
Anambra	4.5	2.9	2.6	3.1	1.1	0.9
Bauchi	5.8	8.9	9.7	6.9	9.5	9.4
Bendel	4.1	3.7	3.5	2.0	0.7	0.7
Benue	4.4	4.9	5.1	4.0	4.1	4.7
Borno	5.0	5.3	5.6	6.1	6.7	6.8
Cross River	6.0	5.2	4.7	4.4	4.1	4.3
Gongola	5.1	6.1	6.3	3.6	2.7	2.5
Imo	4.8	3.0	2.7	2.8	1.1	1.1
Kaduna	9.0	10.1	10.0	5.6	3.2	3.0
Kano	11.3	11.5	10.9	15.3	18.1	16.4
Kwara	3.0	2.4	2.1	3.0	2.4	2.5
Lagos (Rural)	1.5	1.3	1.2	4.6	3.9	3.6
Niger	2.8	4.9	6.4	3.3	3.9	4.2
Ogun	2.9	2.6	2.3	1.9	1.1	0.9
Ondo	3.9	4.3	4.6	3.7	2.5	2.5
Oyo	6.6	2.9	1.9	5.8	3.0	2.8
Plateau	3.9	4.1	4.3	6.1	6.8	7.1
Rivers	2.5	1.5	1.1	3.2	3.0	2.9
Sokoto	12.5	14.1	14.7	13.1	19.8	21.3
All Nigeria	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: NCS, 1985/86 and 1992/93

Tables 4.14 and 4.15 shows the evolution of extreme poverty by state. Ten out of the 19 state structure show increases in extreme poverty. We find from the table that the following states have shown an increase in headcount of extreme poverty. Anambra (0.6 percentage points), Cross Rivers (6.7 percentage points), Plateau (4.0 percentage points), Sokoto (9.8 percentage points), Kaduna (7.7 percentage points), Kano (3.9 percentage points), Kwara (4.4 percentage points), Ogun (0.7 percentage points) and Rivers (12.6 percentage points). Also, eleven states have registered an increase in the depth of extreme poverty as follows: Anambra (0.2 percentage points), Benue (3.5 percentage points), Bauchi (0.9 percentage points), Cross River (4.1 percentage points), Kano (2.6 percentage points), Kwara (4 percentage points), Ondo (0.3 percentage points), Oyo (2.5 percentage points), Plateau (3.5 percentage points), and Rivers (4.6 percentage points).

Table 4.14: Incidence of Extreme Poverty in Nigeria by State, 1985-93 (Poverty Line=₦197.71)

	1985/86			1992/93		
STATE	P_0	P_1	P_2	P_0	P_1	P_2
Lagos (Urban)	0.043	0.015	0.006	0.072	0.021	0.008
FCT	0.000	0.000	0.000	0.252	0.108	0.067
Anambra	0.055	0.012	0.005	0.061	0.014	0.006
Bauchi	0.221	0.066	0.025	0.208	0.075	0.040
Bendel	0.099	0.017	0.005	0.052	0.020	0.011
Benue	0.187	0.043	0.014	0.174	0.078	0.054
Borno	0.160	0.042	0.017	0.163	0.067	0.036
Cross River	0.090	0.021	0.009	0.157	0.062	0.034
Gongola	0.144	0.043	0.021	0.117	0.033	0.017
Imo	0.062	0.015	0.005	0.080	0.025	0.012
Kaduna	0.156	0.036	0.013	0.079	0.031	0.016
Kano	0.128	0.027	0.009	0.167	0.053	0.025
Kwara	0.071	0.015	0.004	0.115	0.055	0.034
Lagos (Rural)	0.076	0.019	0.006	0.131	0.057	0.023
Niger	0.295	0.129	0.076	0.176	0.084	0.053
Ogun	0.069	0.019	0.006	0.076	0.020	0.008
Ondo	0.168	0.040	0.013	0.104	0.043	0.023
Oyo	0.011	0.001	0.000	0.076	0.026	0.013
Plateau	0.140	0.043	0.019	0.180	0.078	0.044
Rivers	0.028	0.006	0.002	0.154	0.052	0.024
Sokoto	0.182	0.043	0.014	0.280	0.107	0.055
All Nigeria	**0.120**	**0.042**	**0.016**	**0.136**	**0.085**	**0.034**

Source: NCS, 1985/86 and 1992/93.

More than half (11 states) of the states indicate an increase in the severity of poverty, as follows: Anambra (0.1 percentage points), Bauchi (1.5 percentage points), Benue (1.1 percentage points), Cross River (2.5 percentage points), Kano (1.6 percentage points), Kwara (3.0 percentage points), Ondo (1.0 percentage points), Oyo (1.3 percentage points), Plateau (2.5 percentage points), and Rivers (2.2 percentage points). Seven of the states that show increases in headcount also show increases in all three poverty measures. On aggregate there is a doubling of 1.8 points in the severity of core poverty in Nigeria. From Table 4.15, it can be seen that in 1985, three Northern states (Kaduna, Kano and Sokoto) accounted for 38 percent of all the core poor, contributed 34.0 percent to the depth of poverty and 28.7 percent to the severity of poverty. In 1992 the numbers had reduced by 4 percentage points for headcount, 8 and 11 percentage points for the depth and severity respectively. On the other hand, five states have shown dramatic increases in the headcount, depth, and severity of core poverty. They are Kwara, Oyo, Rivers, Plateau and Sokoto. Lagos urban areas made almost no contribution to extreme poverty in 1992/93.

Table 4.15: Decomposition of Extreme Poverty Incidence by State, 1985-93 (Poverty Line=₦197.71)

	1985/86			1992/93		
STATE	P_0	P_1	P_2	P_0	P_1	P_2
Lagos (Urban)	0.4	0.2	0.2	1.1	0.4	0.3
FCT	0.0	0.0	0.0	1.7	2.9	3.4
Anambra	2.9	0.9	0.8	2.9	0.6	0.5
Bauchi	7.9	12.6	11.9	6.4	7.6	7.6
Bendel	3.5	1.4	1.1	1.6	0.5	0.5
Benue	6.4	6.7	5.3	4.7	5.8	7.5
Borno	6.9	7.1	7.3	6.0	6.3	6.3
Cross Rivers	2.4	2.5	6.8	5.3	5.2	5.4
Gongola	5.4	5.7	6.8	3.3	1.7	1.7
Imo	3.3	1.2	1.0	3.9	1.6	1.3
Kaduna	10.1	9.0	7.9	4.4	2.1	2.1
Kano	10.8	7.2	5.9	12.6	10.6	9.3
Kwara	1.9	0.7	0.5	2.7	2.4	2.7
Lagos (Rural)	1.2	0.6	0.4	4.1	2.7	2.1
Niger	5.1	16.3	23.8	3.3	4.4	5.2
Ogun	1.6	0.7	0.6	1.4	0.5	0.3
Ondo	5.3	5.1	4.3	3.6	2.4	2.4
Oyo	0.8	0.0	0.0	4.8	1.9	1.8
Plateau	4.1	4.3	4.8	6.5	7.9	8.5
Rivers	0.7	0.1	0.1	3.3	2.7	2.3
Sokoto	17.1	17.8	14.8	17.4	29.4	28.5
All Nigeria	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: NCS, 1985/86 and 1992/93.

4.3 Evolution of Poverty and Household Composition

Table 4.16 shows the incidence of poverty by age groups. It should be noted that in the rural areas, the largest decline in headcount of 15.4 percentage points has been in the 66 and over age cohort, followed by the 36 to 45 age group with 14.7 percentage points. The 16 to 25 age cohort showed a 1.1 percentage points decline in headcount. The large decline in the headcount of the 56 and older heads of households in the rural areas can be explained by the fact that most of these are households whose heads are retired and returned to the rural areas thus helping to reduce poverty in these age groups.

Table 4.16: Incidence of Poverty by Age Group of Head of Household 1985-93 (Poverty Line=₦395.41)

	RURAL					
	1985/86			**1992/93**		
Age Group	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
16 to 25	0.273	0.093	0.054	0.262	0.128	0.097
26 to 35	0.389	0.120	0.060	0.305	0.096	0.052
36 to 45	0.512	0.160	0.078	0.365	0.155	0.091
46 to 55	0.512	0.188	0.096	0.391	0.169	0.098
56 to 65	0.552	0.190	0.094	0.398	0.180	0.106
66 and Over	0.570	0.207	0.108	0.358	0.162	0.100
All Rural	*0.495*	*0.169*	*0.085*	*0.364*	*0.167*	*0.098*
	URBAN					
	1985/86			**1992/93**		
Age Group	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
16 to 25	0.101	0.056	0.020	0.172	0.061	0.023
26 to 35	0.226	0.077	0.029	0.182	0.106	0.062
36 to 45	0.304	0.124	0.051	0.316	0.138	0.077
46 to 55	0.411	0.147	0.060	0.364	0.136	0.068
56 to 65	0.390	0.166	0.076	0.393	0.161	0.081
66 and Over	0.406	0.135	0.052	0.344	0.170	0.101
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93.

Focusing on the urban areas, we find the largest decline (6.2 percentage points) in headcount is within the 66 & over age-group, closely followed by the 46 to 55 age-group with 4.7 points decline in headcount.

Table 4.17: Contribution of Poverty by Age Group of Head of Household, 1985-93 (Poverty Line=₦395.41)

			RURAL			
	1985/86			**1992/93**		
Age Group	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
16 to 25	1.7	2.3	1.3	1.9	1.5	2.0
26 to 35	14.2	8.5	10.0	14.6	8.9	8.2
36 to 45	30.2	23.5	27.7	27.8	27.7	27.7
46 to 55	26.5	29.4	29.3	27.0	29.2	28.7
56 to 65	17.6	26.8	19.5	19.5	22.5	22.6
66 and Over	9.6	10.3	12.2	10.1	9.5	9.9
All Rural	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
			URBAN			
	1985/86			**1992/93**		
Age Group	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
16 to 25	1.2	0.5	0.4	2.0	0.0	0.6
26 to 35	17.6	6.1	9.6	13.1	10.1	10.9
36 to 45	29.9	35.8	28.8	31.9	31.9	33.1
46 to 55	28.6	24.5	32.2	28.4	27.9	25.9
56 to 65	14.0	20.9	20.4	15.3	17.8	16.7
66 and Over	8.8	11.7	8.6	9.2	11.4	12.5
All Urban	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/92.

Table 4.18 shows the incidence of poverty by gender of head of household. Taking the rural areas first, in 1985 the headcount for male and female headed households was 50.5 percent and 42.1 percent respectively. In 1992 the values were 37.9 percent and 21.8 percent for male and female headed households respectively. There was a decline of 12.6 percentage points among male headed households and a much larger decline of 20.3 percentage points among the female headed households in the rural areas. There was a 2.7 percentage points decline in the depth of poverty among rural male headed households, compared to 4.8 points decline among rural female headed households. The table also shows that there was 0.4 percentage points increase in the severity of poverty among male headed households in rural areas, compared to 2.5 percentage points increase in urban areas. In the urban areas, there were 0.9 percentage points decline in headcount, 1.5 percentage points increase in depth and 2.5 percentage points increase in severity among male headed households within the period of our study. Looking at the urban female headed households, there were 7.2 percentage points decline in headcount, 2.0 and 0.3 percentage points decline in depth and severity respectively, during the period of our study. The poverty measures for female headed households show that they fared much better than the male headed households in terms of all three measures of poverty. However, it should be recalled that female headed households make up only 10 percent of all households in Nigeria.

Table 4.18: Incidence of Poverty by Gender of Head of Household, 1985-93 (Poverty Line=₦395.41)

			RURAL			
	1985/86			**1992/93**		
Gender of Head of Household	P_0	P_1	P_2	P_0	P_1	P_2
Male Headed	0.505	0.185	0.089	0.379	0.158	0.093
Female Headed	0.421	0.142	0.061	0.218	0.094	0.056
All Rural	*0.495*	*0.169*	*0.085*	*0.364*	*0.167*	*0.098*
			URBAN			
	1985/86			**1992/93**		
Gender of Head of Household	P_0	P_1	P_2	P_0	P_1	P_2
Male Headed	0.326	0.128	0.053	0.317	0.143	0.078
Female Headed	0.277	0.090	0.032	0.209	0.070	0.035
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93.

Table 4.19 shows the incidence of poverty by the educational level of head of household. Taking the rural areas first, in 1985 more than 50 percent of households whose heads had no education were poor. All the poverty measures show an exponential decline with increasing education, in both periods. However, some interesting facts seem to emerge out of this table. There is a decline of 2.4 percentage points in headcount, 3.2 percentage points increase in depth and 3.4 percentage points increase in severity respectively among the uneducated in rural areas, but for primary school leavers while the head count has declined, the depth and severity has increased. For secondary and post secondary school leavers, the results are mixed. For the secondary school leavers, there was a very small (3.1 percentage points) decline in headcount, a 2.1 percentage point increase in depth, and a 2.4 percentage point increase in severity of poverty. For the post secondary school leavers, there was an increase in all measures during the period of our study. In the urban areas, there was a decline in headcount, depth and severity of poverty for households whose heads had below primary education. Again for the post secondary school leavers, the trend was similar to that of the rural areas, resulting in higher depth and severity of poverty.

Table 4.19: Incidence of Poverty by Educational Level of Head of Household, 1985-93 (Poverty Line=₦395.41)

			RURAL			
	1985/86			1992/93		
Education Level	P_0	P_1	P_2	P_0	P_1	P_2
No Education	0.519	0.187	0.095	0.495	0.219	0.129
Primary Educ.	0.475	0.142	0.069	0.289	0.118	0.064
Second. Educ.	0.288	0.075	0.032	0.257	0.096	0.058
Post Secondary	0.162	0.000	0.000	0.215	0.112	0.069
All Rural	*0.495*	*0.169*	*0.085*	*0.364*	*0.167*	*0.098*
			URBAN			
	1985/86			1992/93		
Education Level	P_0	P_1	P_2	P_0	P_1	P_2
No Education	0.378	0.148	0.065	0.428	0.162	0.077
Primary Educ.	0.286	0.102	0.038	0.282	0.113	0.065
Second. Educ.	0.211	0.053	0.018	0.214	0.087	0.046
Post Secondary	0.238	0.000	0.000	0.235	0.084	0.044
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93.

Table 4.20 Incidence of Extreme Poverty by Educational Level of Head of Household (Poverty Line=₦197.71)

	1985/86			1992/93		
Education Level	P_0	P_1	P_2	P_0	P_1	P_2
No Education	0.148	0.049	0.018	0.162	0.061	0.032
Primary Educ.	0.065	0.023	0.007	0.109	0.038	0.020
Secondary Educ.	0.089	0.004	0.004	0.078	0.031	0.018
Post Secondary	0.000	0.000	0.000	0.093	0.030	0.017
All Nigeria	*0.120*	*0.042*	*0.016*	*0.136*	*0.085*	*0.034*
Contribution of Extreme Poverty Incidence by Education of Head						
	1985/86			1992/93		
Education Level	P_0	P_1	P_2	P_0	P_1	P_2
No Education	80.0	89.2	90.6	71.5	81.18	80.7
Primary Educ.	18.5	10.7	9.3	18.2	12.9	13.1
Secondary Educ.	1.5	0.1	0.1	7.0	4.0	4.3
Post Secondary	0.0	0.0	0.0	3.3	1.8	1.9
All Nigeria	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/93.

In Nigeria, as elsewhere, education can play a key role in reducing poverty over the long term, both indirectly through improving the productivity and efficiency of the labor force,

leading to faster rates of economic growth, or directly by giving the poor the skills they need to raise their productivity and hence incomes. For the latter, primary education or its equivalence is of prime importance.

4.3 Poverty and Employment

Unemployment was primarily one of high school graduates. In December 1985 6/, 68.3 percent of the unemployed were secondary and post secondary school leavers. Their unemployment as a percent of the national unemployed increased to 71.5% in 1986 and peaked at 76% in 1987. Although in general education improves household prospects of escaping poverty, the analysis above shows that in the years of our study, many secondary and post secondary school leavers might be expected to be in poverty.

It is important to note here that those who reported themselves as illiterate appear to be only slightly poorer than individuals who declared themselves literate. This may well be indicative of a number of factors related to the supply and demand for education. On the demand side, it might very well be that the benefits of education are not adequately rewarded in the labor markets in Nigeria by increased incomes because skill and technical training are important along with formal educational attainments.

But just how uneducated are the poor? Based on the chosen poverty line, most of the population lives in households where 64.5 percent of the time, the head is illiterate, it is very likely that a lot of the women in the poor households are illiterate. The negative relationship between education and per capita expenditures confirms this hypothesis. Low educational attainment among the adult population, however, is more an indication of past levels of access to education than of present. Enrollment ratios, especially in primary school represent therefore a better measure of current access to education, and the potential for future reduction in poverty through human capital investments.

Although one would expect that the fall in real wages would enhance employment prospects, experience in Nigeria during the 1980s does not support the theory. Table A3.6 (Appendix 3) shows that urban unemployment increased from 7.3 percent in 1983 to about 10.8 percent in 1987, but gradually decreased to 4.2 percent by 1993. Essentially, 3 to 4 million of the labor force were out of work in 1986. This period corresponds to the recession in Nigeria when macroeconomic stabilization was being sought without growth and structural adjustment. Due to critical shortages of foreign exchange, enterprises ran at far less than capacity, and large cuts in employment were effected through involuntary retrenchments. For instance, between 1984 and 1985, the employment in three industrial occupations (manufacturing, trading/services, and building and construction) dropped from 76,560 to 72,604 showing a contraction of over 5 percent in employment.7/ Although the size seems small, the sharpest cut occurred in building and construction (36 percent), though numerically, manufacturing sustained the largest cut.

5/ See Appendix Table 3.6

6/ See Lemma Merrid(1991).

Who were the unemployed and how did they fare? Three pieces of information are given in Table A3.6 (Appendix 3) to illustrate the point; viz. unemployment by age group, level of education, and geographical distribution. Examining the patterns of distribution by age group, a distinct feature of the situation is that unemployment was centered among the youth.

In some years, the rates were very high, take for example the two age groups comprising cohorts 15-19 and 20-24 years, the unemployment rate increased from 28.6 percent in 1985 to 30.1 percent in 1986 (commencement of the adjustment program), for the former and decreased from 39 percent to 37.2 percent for the latter. However, unemployment is highest in the 20-24 age cohort. The rate peaked at 43.3 percent in 1988 and has been fluctuating since then. Following the overall decline in unemployment, youth unemployment declined to 25.1 percent the first year of the adjustment program (June 1987) and 23.9 percent the second year (March 1988) for the 15-19 cohorts and 38.5 percent and 35.7 percent (1990) respectively for the 20-24 year age group.

Looking at the regional distribution, Table A3.6 also shows that unemployment was more pronounced in the southern states, where unemployment rates of 11-13 percent were registered. Most of the unemployed were located in the south, where 47 percent of Nigeria's population lives. The middle states had unemployment rates between 7-8 percent but the number was not estimated to be large since only 18 percent of the population lived in this region at the time.

The urban unemployment rate in 1986 was 10 percent compared to 4.8 percent for rural. This implied that the forces that could induce urban to rural exodus were not strong enough. To the extent that the urban unemployed were the educated youth, agriculture, the largest economic activity in the rural areas did not attract their attention. Even if they decided to take up rural residence, the lack of land and agricultural skills do not seem to support an urban to rural movement. Moreover, to the extent that the unemployed expected urban labor market to revive eventually, the perception of higher urban income is likely to encourage them to stay in the urban areas.

With this background information in mind, this sub-section looks at the effect of labor market on poverty and the sectors/industries in which the poor were employed. Poverty by occupational category showed a high incidence in 1985/86 in the agriculture group. This continues to be the case in 1992/93. There is also an indication that distribution of income has changed against this group as is evident from the distributionally sensitive poverty measures like depth and severity of poverty. Table 4.21 shows that the rural headcount in agriculture reduced by 9.2 percentage points, depth by 3.4 percentage points and severity by 1.1 percentage points between the two periods. This has accounted for the reduction in poverty in the rural areas.

Table 4.21 also shows that rural poverty in the production and transportation area declined substantially. Headcount declined by 23.4 percentage points, the highest of any sector. The depth of poverty declined by 1.4 points while the severity of poverty increased by 1.6 percentage points in the rural areas. The table further shows that in the urban areas, the largest decline in head count was in manufacturing and processing. In this sector there was also a 1.5 percentage points increase in depth and a 2.7 percentage points decline in severity of poverty.

Despite the scope for improving agricultural growth and the poverty focus of existing agricultural programs, about 87 percent of the core poor in 1986 and about 89 percent of the hard core poor in 1992 are engaged in some form of agriculture. The bulk of depth and severity in poverty 97.4 percent and 97.9 percent respectively in 1986 are in agriculture. The same trend is shown in 1992.

Table 4.21: Poverty Incidence in Nigeria by Occupation of Head of Household 1985-92 (Poverty Line=₦395.41)

RURAL						
	1985/86			**1992/93**		
Main Occupation of Household Head	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
Profess./Technic.	0.293	0.107	0.050	0.329	0.120	0.059
Admin./Managers	0.417	0.131	0.069	0.611	0.158	0.083
Clerical Related	0.327	0.084	0.040	0.234	0.106	0.051
Sales Workers	0.319	0.080	0.033	0.266	0.110	0.059
Service Industry	0.373	0.088	0.037	0.228	0.090	0.046
Agric./Forestry	0.543	0.210	0.108	0.391	0.176	0.106
Product./Transp.	0.447	0.119	0.052	0.213	0.133	0.068
Manufact./Process.	0.341	0.103	0.043	0.337	0.072	0.023
Others	0.378	0.094	0.034	0.257	0.093	0.045
Student/Apprentice	0.220	0.096	0.045	0.318	0.120	0.068
All Rural	*0.495*	*0.169*	*0.085*	*0.364*	*0.167*	*0.098*
URBAN						
	1985/86			**1992/93**		
Main Occupation of Household Head	**P_0**	**P_1**	**P_2**	**P_0**	**P_1**	**P_2**
Profess./Technic.	0.309	0.077	0.028	0.273	0.139	0.082
Admin./Managers	0.177	0.037	0.007	0.269	0.102	0.037
Clerical Related	0.219	0.058	0.020	0.331	0.114	0.060
Sales Workers	0.235	0.071	0.027	0.263	0.103	0.058
Service Industry	0.259	0.079	0.030	0.298	0.109	0.056
Agric./Forestry	0.473	0.175	0.079	0.357	0.151	0.080
Product./Transp.	0.265	0.112	0.051	0.396	0.121	0.057
Manufact./Process.	0.351	0.096	0.037	0.233	0.111	0.064
Others	0.305	0.087	0.032	0.292	0.100	0.054
Student/Apprentice	0.414	0.087	0.029	0.379	0.157	0.086
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93.

Most rural areas depend on the labor market for their sustenance. Focusing on the link between urban and rural patterns of welfare as mediated through the labor market, an ILO study based on data from 1964 to 1985 demonstrated that except for intermittent increases, real wages in Nigeria declined sharply between 1973 and 1985 (Jamal and Weeks, 1988). The periodic jumps were observed between 1973 and 1975 and again between 1980 and 1983, the first jump corresponding to the oil price shocks of the early 1970s. Not withstanding these exceptions, real wages in 1985 were a little more than half of the 1973 level. Some data available for 1980 to

1987 in a recent World Bank economic and sector work illustrates that the fall in real wages continued well into the later half of the 1980s (World Bank, 1990). By this account, real wages in urban and rural areas in 1987 were 42-47 percent of the level in 1980. For employees on a fixed payroll, during this period, these data show that they fared very badly during most of the years.

Table 4.22: Incidence of Extreme Poverty by Occupation of Head of Household, 1985-93 (Poverty Line=₦197.71)

	1985/86			1992/93		
Occupation	P_0	P_1	P_2	P_0	P_1	P_2
Profess./Technic.	0.040	0.009	0.003	0.135	0.062	0.023
Admin./Managers	0.044	0.020	0.009	0.075	0.084	0.030
Clerical Related	0.024	0.008	0.003	0.106	0.055	0.018
Sales Workers	0.033	0.006	0.002	0.087	0.056	0.021
Service Industry	0.040	0.008	0.003	0.107	0.048	0.016
Agric./Forestry	0.180	0.047	0.018	0.164	0.086	0.035
Product./Transp.	0.080	0.012	0.004	0.124	0.059	0.018
Manufact./Process.	0.053	0.014	0.004	0.058	0.058	0.018
Others	0.039	0.005	0.001	0.087	0.049	0.016
Student/Apprent.	0.020	0.011	0.006	0.149	0.064	0.023
All Nigeria	*0.120*	*0.042*	*0.016*	*0.136*	*0.085*	*0.034*

Decomposition of Extreme Poverty Incidence by Occupation

	1985/86			1992/93		
Occupation	P_0	P_1	P_2	P_0	P_1	P_2
Profess./Technic.	2.6	0.6	0.5	6.3	4.6	4.3
Admin./Managers	0.2	0.1	0.1	0.2	0.3	0.3
Clerical Related	0.9	0.2	0.2	4.2	3.5	2.9
Sales Workers	4.0	0.6	0.4	10.2	9.3	8.8
Service Workers	1.2	0.2	0.2	2.2	1.4	1.2
Agric./Forestry	86.6	97.4	97.9	67.4	72.4	75.3
Product./Transp.	1.5	0.4	0.4	2.3	1.9	1.5
Manufact./Process.	0.8	0.3	0.2	1.0	1.3	1.1
Others	2.2	0.2	0.1	3.9	3.3	2.7
Student/Apprent.	0.1	0.0	0.0	2.4	1.9	1.8
All Nigeria	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/93

Tables 4.23 and 4.24 provide the employment status breakdown of poverty. Here self employed appear to be the hard hit. Here again the pattern remains same between the two periods. Poverty has declined in the wage earner category from an incidence of 51.5 percent to 27.7 percent in the rural areas, and 33.6 percent to 27.8 percent in urban areas. They constitute a substantially large proportion of the poor than their corresponding proportion in the national population.

Table 4.23: Incidence of Poverty by Employment Status of Head of Household, 1985-93 (Poverty Line=₦395.41)

RURAL						
	1985/86			1992/93		
Employment Status of Head	P_0	P_1	P_2	P_0	P_1	P_2
Employer	0.282	0.089	0.038	0.000	0.000	0.000
Wage Earners	0.515	0.176	0.089	0.277	0.097	0.046
Self Employed	0.514	0.114	0.000	0.367	0.157	0.093
Others	0.453	0.053	0.012	0.368	0.163	0.094
All Rural	*0.495*	*0.169*	*0.085*	*0.364*	*0.167*	*0.098*
URBAN						
	1985/86			1992/93		
Employment Status of Head	P_0	P_1	P_2	P_0	P_1	P_2
Employer	0.256	0.069	0.027	0.000	0.000	0.000
Wage Earners	0.336	0.143	0.083	0.278	0.112	0.062
Self Employed	0.574	0.204	0.127	0.319	0.139	0.076
Others	0.359	0.191	0.104	0.238	0.107	0.043
All Urban	*0.317*	*0.124*	*0.051*	*0.304*	*0.140*	*0.076*

Source: NCS, 1985/86 and 1992/93

Table 4.24: Incidence of Extreme Poverty by Employment Status of Head of Household, 1985-93 (Poverty Line=₦197.71)

	1985/86			1992/93		
Employment Status	P_0	P_1	P_2	P_0	P_1	P_2
Employer	0.038	0.008	0.003			
Wage Earner	0.134	0.034	0.013	0.104	0.054	0.020
Self Employed	0.206	0.019	0.000	0.142	0.075	0.030
Others	0.079	0.000	0.000	0.125	0.079	0.029
All Nigeria	*0.120*	*0.042*	*0.016*	*0.136*	*0.085*	*0.034*

Decomposition of Extreme Poverty Incidence by Employment Status

	1985/86			1992/93		
Employment Status	P_0	P_1	P_2	P_0	P_1	P_2
Employer	4.9	1.1	1.0	0.0	0.0	0.0
Wage Earner	5.1	3.0	0.0	11.9	9.7	9.1
Self Employed	88.9	95.9	99.0	82.7	84.9	85.8
Others	1.1	0.0	0.0	5.4	5.4	5.0
All Nigeria	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

Source: NCS, 1985/86 and 1992/93.

4.3 Decomposition of Changes in Poverty

In the extensive literature on the relationship between growth, distribution and poverty, or between population shifts, intra-sectoral shifts and interaction between sectors and poverty, some empirical questions have always been asked by policy makers and analysts. How much of observed changes in poverty are due to changes in the *distribution* of income, as distinct from the *growth* in average incomes, or how much of the changes in poverty are demographic - due to movements within regions or sectors. Standard inequality measures can be very misleading in this context. The first set of decompositions in the tables below offer tools for rigorously quantifying the contribution of distributional changes to poverty alleviation controlling for growth effects, and the contribution of growth, controlling for distributional changes. The second set of decompositions allow for another rigorous quantification of the contribution of population shifts to poverty alleviation, controlling for intra-sectoral shifts and interactions within sectors and the contribution of intra-sectoral shifts to poverty alleviation controlling for population shifts and interaction between sectors. However, like any descriptive tool, these decompositions have their limitations. For example, the decomposition cannot explain if an alternative growth process with better distributional implications would have been more effective in reducing poverty or not.

The changes in poverty which occurred in Nigeria between 1985 and 1992 are the net result of two effects: a rise in the mean level of household expenditure per capita and a change in the distribution. It is useful to separate out the two effects, in order to properly assess the policies of the period and to see where future policy needs to be focused. Following Ravallion and Datt (1991), the change in P_a can be written as the sum of a growth component, a redistribution component and a residual. Let

$$\mathbf{P_{a,t} = P_a(U_t/Z,p_t)}$$

where Z is the poverty line, U_t is the mean per capita expenditure and p_t is the distribution of expenditure in year t. This decomposition is discussed in detail in Ravallion and Datt (1991), but the basic idea is as follows. For any two periods or dates 0 and 1, the *growth component* of a change in the poverty measure is defined as the change in poverty due to a change in the mean per capita expenditure from U_0 to U_1, with no change in income distribution. The *redistribution measure* is defined as the change in poverty due to a change in income distribution, with no change in mean per capita expenditure. Hence the decomposition can be written as follows:

$$\mathbf{P(U_1/Z,p_1)-P(U_0/Z,p_0) = [P(U_1/Z,p_0)-P(U_0/Z,p_0)] + [P(U_0/Z,p_1)-P(U_0/Z,p_0)] + Residual}$$

Change in Poverty = Growth Component + Redistribution Component + Residual

The change in P_a between 1985 and 1992 can then be written as

$$\mathbf{P_{a,92} - P_{a,85} = G(85,92;r) + D(85,92;r) + R(85,92r)}$$

where r refers to the reference point, which logically will be 1985. With 1985 as the reference year the components will be as follows:

$$G(85,92;85) \circ P_a(U_{93}/Z,p_{92}) - P_a(U_{85}/Z,p_{85})$$
$$D(85,92;85) \circ P_a(U_{85}/Z,p_{92}) - P_a(U_{85}/Z,p_{85})$$

The growth component thus captures the changing level of mean expenditure between 1985 and 1992, while maintaining the 1985 income distribution. The redistribution component shows the effect of the changes in distribution between 1985 and 1992, while maintaining mean expenditure at the 1985 level. The residual reflects the interaction between changes in the mean and the distribution. Since the poverty line is kept fixed for both periods, it is important to ensure that the means have been adjusted for changes in the cost of living over the two dates.

Consider now, the second type of decomposition, the sectoral decomposition of a change in poverty. When analyzing the sources of observed reductions in aggregate poverty, one can make use of a simple decomposition formula proposed in Ravallion and Huppi (1989), and also exploiting the additive property of the FGT class of measures. The idea is to shed light on the on the relative importance of changes within sectors versus changes between them, such as due to inter-sectoral population or work-force shifts.

To see how this works, let P_{it} denote the FGT poverty measure (or any other additive measure) for sector i with population share n_i at date t, where there are k such sectors, and t=1, 2. Then it can be verified that:

$$P_2 - P_1 = S(P_{i2} - P_{i1}) + S(n_{i2} - n_{i1})P_{i1} + S(P_{i2} - P_{i1})(n_{i2} - n_{i1})$$

Total change = Intra-sectoral + Population Shift+ Interaction Effect

where all summation are over i=1,.....k. The "intra-sectoral effects" indicates the contribution of poverty changes within sectors, controlling for their base period population shares. The "population shift effects", show how much of the poverty in the first period was reduced by the various changes in population shares of sectors between then and the second date. The "interaction effect' is a covariance term accounting for the interaction of the intra and inter sectoral effects. The results of the decomposition are laid out in Table 4.27. Over the period, there is very little change in the population shares of the three sectors, thus the component for inter-sectoral population and the interaction term turn out to be very small.

Table 4.25: Decomposition of Change in Poverty (P_a, 1985-93) into Growth and Redistribution Components

P_a Indicator	Total Change	Growth Component	Redistribution Component	Residual
P_0	-0.089	-0.042	0.141	-0.188
P_1	-0.010	-0.059	0.067	-0.018
P_2	-0.004	-0.052	0.038	0.018
Rural Decomposition				
P_0	-0.133	-0.190	0.013	-0.044
P_1	-0.037	-0.094	0.065	-0.008
P_2	-0.006	-0.057	0.066	-0.003
Urban (Excluding Lagos) Decomposition				
P_0	-0.014	-0.077	0.099	-0.036
P_1	0.043	-0.031	0.080	-0.006
P_2	0.024	-0.015	0.058	-0.019
Lagos Urban Decomposition				
P_0	0.036	0.008	0.043	-0.015
P_1	0.027	0.003	0.023	0.001
P_2	0.014	0.001	0.015	-0.002

Source: NCS, 1985/86 and 1992/93.

Table 4.25 shows the estimates of the decomposition of changes in national, rural, urban excluding Lagos and Lagos urban, for per capita expenditures. The tables give the changes in percentage points, in the two periods of our study 1985/86 and 1992/93. For example, the national headcount started at 43.0 percent in 1985/86 and fell by 8.9 points to 34.1 percent in 1992/93. By components, distributionally neutral growth accounted for a decline of 4.2 points, while the distributional shifts accounted for an increase by 14.1 points; the residual effect contributes to decreasing poverty by 18.8 point. The growth component dominates for all measures and contributes more to poverty reduction. This trend is also true for all the regions except the Lagos Urban, where the redistribution effect contributes to decrease in the P_0 and P_1 measures of poverty in Nigeria. However, the effect of the growth component in all the cases, mitigated the adverse effect of the redistribution effect.

Table 4.26: Decomposition of Change in Regional Poverty (P_a, 1985-93) into Growth and Redistribution Components

P_a Indicator	Total Change	Growth Component	Redistribution Component	Residual
Northern Belt decomposition				
P_0	-0.031	-0.082	0.040	0.011
P_1	-0.037	-0.044	0.053	0.001
P_2	-0.006	-0.026	0.048	0.002
Middle Belt Decomposition				
P_0	-0.087	-0.165	0.054	0.024
P_1	-0.052	-0.081	0.069	-0.040
P_2	-0.016	-0.048	0.062	-0.030
Southern belt Decomposition				
P_0	-0.126	-0.159	0.030	0.003
P_1	0.003	-0.067	0.048	0.022
P_2	0.016	-0.034	0.043	0.007

Source: NCS, 1985/86 and 1992/93.

The decomposition of poverty in terms of geographical belts is presented in Table 4.26. The highest decline in incidence has taken place in the Southern belt showing a decline of 12.6 percentage points most of which is due to the growth component (-15.9), and partly due to the redistribution component(3.0). In the middle belt, there was a decline of 8.7 percentage points (-16.5 and +5.5) due to growth and redistribution respectively. In the northern region, the decline was 3.1 percentage points, -8.2 due to growth and +4.0 due to redistribution. Looking at the other measures it is worth noting that the decline in P_1 in South of 0.3 percentage points is predominantly due to growth. We find that growth reduced the depth of poverty by 4.9 percentage points and redistribution by 0.8 percentage points, while the residual increased the depth by 2.2 percentage points. In most of the measures, the residual is small relative to both growth and redistribution components, implying that the distribution is quite insensitive to a change of reference from the initial to final year (Ravallion and Datt, 1991).

The relationship between population shifts and intra-sectoral shifts and interaction between sectors and poverty is examined in Table 4.27. It attempts to answer some empirical question as to how much of observed changes in poverty are demographic - due to movements within regions or sectors. The decompositions allow for another rigorous quantification of the contribution of population shifts to poverty alleviation, controlling for intra-sectoral shifts and interactions within sectors and the contribution of intra-sectoral shifts to poverty alleviation controlling for population shifts and interaction between sectors.

The changes in national poverty over the period 1985-92 can be readily decomposed as follows:

$$P_{92} - P_{85} = S(P_{i92} - P_{i85})n_{i85} + S(n_{i92} - n_{i85})P_{i85} + S(P_{i92} - P_{i85})(n_{i92} - n_{i85})$$

Total change = Intra-sectoral + Population Shift + Interaction Effect

The interaction effects arise from the possible correlation between sectoral gains and population shifts, with the sign of the effect indicating whether people tended to switch to the sectors where poverty was falling or not. The finding can be summarized as follows: the decline in national poverty as expressed by the head count, between 1985-92 was due mainly (97.8 percent) to intra-sectoral effects while 3.4 percent was due to population movements within the country. The interaction effect for the headcount shows that people tended to move to sectors where poverty was falling. For the depth P_1 measure, the intra-sectoral, population shifts and interaction effects, all contributed to reducing the depth of poverty. However, for the P_2 intensity measure the interaction effect increased poverty by 8.3 points, but the effects were balanced by the more than proportional decrease in the severity caused by the intra-sectoral and population shift effects. We have seen that the decline in rural poverty was mainly due to a decline in agricultural households. 1986 was not a very good agricultural year in Nigeria, the improvements in agriculture were due to the rather favorable terms of trade for cocoa farmers and the abolition of the cocoa board. It is no surprise therefore that the intra-sectoral effects have been so strong in reducing poverty. It is also believed that there was reversed migration with families moving from urban to rural areas, thereby causing a reduction in rural poverty (CBN/NISER, 1992).

Table 4.27: Decomposition of Change in Poverty (P_a, 1985-93) Into Intersectoral, Population Shift and Interaction Effects

P_a Indicator	Total Change	Intra-Sectoral	Population Shift	Interaction Effect
P_0	-0.089	-0.087	-0.003	0.001
	100.0	97.8	3.4	1.2
P_1	-0.004	0.001	-0.002	-0.003
	100.0	-25.0	50.0	75.0
P_2	0.012	0.001	-0.001	0.012
	100.0	-8.3	8.3	100.0

Source: NCS, 1985/86 and 1992/93.

4.5 Implications for Targeting

From various aspects of the inter-temporal poverty profile presented thus far, one can draw out the implications for targeting, by using two targeting indices. The indices relate to how much impact on aggregate (national) poverty can be expected from a given transfer across different groups defined by a particular household indicator or characteristic. This paper focuses on two benchmark criteria. These correspond to the additive (or uniform) and multiplicative or (proportional) transfers. Additive transfers are generally defined as those transfers where the amount transferred is the same for all persons within the group. These transfers are progressive if it translates into increased or higher proportion of expenditure for the relatively poor. In the second case of multiplicative transfers, the amount received is proportional to the recipient's income or expenditure, these are distributionally neutral transfers. As shown in Kanbur (1987)

and Datt and Ravallion (1990), it turns out that, to minimize P_a transfers, groups should be targeted in the order of the observed values of:

$\mathbf{P_{a-1,j}}$, for additive transfers and,

$\mathbf{(P_{a-1,j} - P_{aj})/U_j}$ for multiplicative transfers.

where U_j is the mean per capita expenditure for group j. The poverty estimates in this paper already provide the needed information on the targeting index for additive transfers; the multiplicative index is easily calculated as will be shown below. In an earlier discussion on the FGT class of indicators, we saw that the squared poverty gap index, with a=2 (P_2), assumes that the policy objective is to accord a greater weight to reducing poverty for those who are relatively poorer. Our focus will thus be on P_2, these indices have been normalized by the national values of the same index and expressed as percentages. Thus, for additive transfers, the relative targeting index is simply given as the poverty gap for group j, as a percentage of the national poverty gap, and similarly for the index for multiplicative transfers.

Groups with relatively high values of both indicators may be considered good choices for targeting or for design of policies favoring them. Table 4.28 shows that between rural/urban areas, the rural sector becomes a favored choice for targeting. Additive and multiplicative transfers for rural areas are 95.91 and 93.89 respectively, compared to 72.04 and 74.58 for the other urban areas and 59.73 and 77.86 respectively for Lagos urban. In terms of agro-climatic belts, the northern belt becomes preferable.

In general, households whose heads have no schooling, among the employed, the self-employed, female headed households, by occupation, clearly agriculture and forestry feature high in order of preference for targeting. In terms of household structure, polygamous households are good candidates for targeting. When we consider the states in 1992/93 in rural/urban sectors, Bauchi, Benue, Borno, Cross rivers, Gongola, Kano, Plateau, Sokoto and FCT are preferred. Although we did not go into details of what communities and possible Local Government Areas (LGAs) should be targeted, we strongly feel that this is an area that needs further research.

Table 4.28: Targeting Indices by Various Indicators 1992-93 (Poverty Line=₦395.41)

Groups and Indicators	Targeting Indicator for Additive Transfers		Targeting Indicator for Multiplicative Transfers	
Nigeria	100.0		100.0	
Rural	95.41		93.89	
Urban	72.04		74.58	
Lagos Urban	59.73		77.86	
Ecological Belts	**Urban**	**Rural**	**Urban**	**Rural**
Northern	106.34	117.28	144.92	144.31
Middle	90.38	105.90	99.84	96.75
Southern	54.91	60.14	50.17	51.90
Educational Level	**Urban**	**Rural**	**Urban**	**Rural**
No Education	94.68	105.23	119.43	109.85
Primary Education	66.90	69.53	62.46	65.53
Secondary Education	51.76	56.64	47.82	44.20
Higher education	49.61	66.26	45.23	47.63
Employment Status	**Urban**	**Rural**	**Urban**	**Rural**
Wage Earner	63.34	94.79	77.92	116.43
Self Employed	66.36	96.75	67.57	67.46
Other	82.54	92.82	87.09	91.18
Household Structure	**Urban**	**Rural**	**Urban**	**Rural**
Traditional male	64.71	78.62	77.0	77.45
Polygamous	131.00	138.68	214.67	177.56
Single male	63.18	45.60	20.82	26.77
defacto female	71.34	94.20	57.47	102.06
dejure female	36.66	49.94	30.06	33.56

Source: NCS, 1985/86 and 1992/92.

Table 4.28 (Cont...): Targeting Indices by Various Indicators 1992-93 (Poverty Line=₦395.41)

Groups and Indicators	Targeting Indicator for Additive Transfers		Targeting Indicator for Multiplicative transfers	
Main Occupation	**Urban**	**Rural**	**Urban**	**Rural**
Profess/Technic.	82.2	70.9	75.76	78.01
Admin. Managers	60.5	93.5	80.65	103.91
Clerical Relat.	67.5	62.9	76.00	64.49
Sales Workers	61.1	64.9	58.52	59.01
Service Industr.	64.4	53.5	68.67	55.86
Agric/Forest.	89.5	104.1	101.57	104.71
Product/Transp.	71.4	78.7	96.78	77.96
Manufact/Process.	65.7	42.7	55.11	58.87
Others	59.1	55.3	66.70	54.91
Student/Apprent.	93.1	70.9	100.37	59.74
State of Residence	**Urban**	**Rural**	**Urban**	**Rural**
Anambra	42.95	27.49	28.86	24.12
Bauchi	125.83	144.01	193.71	254.11
Bendel	26.77	42.21	31.52	34.30
Benue	95.86	107.97	89.83	103.10
Borno	95.13	114.38	119.85	126.31
Cross River	72.57	95.94	76.25	80.68
Gongola	70.60	78.51	82.57	85.30
Imo	40.66	37.97	28.51	30.21
Kaduna	48.94	62.18	50.70	50.41
Kano	106.79	122.46	224.29	186.58
Kwara	49.46	90.21	64.45	71.16
Lagos	77.29	90.79	100.75	113.61
Niger	92.42	130.55	166.09	136.78
Ogun	58.90	55.98	73.84	54.79
Ondo	53.57	77.08	50.01	63.47
Oyo	54.25	50.14	44.04	46.71
Plateau	103.99	118.17	123.61	90.13
Rivers	85.88	100.11	122.65	105.89
Sokoto	160.08	148.62	230.01	202.90
FCT	166.56	130.49	140.70	179.71

4.6 Sensitivity Analysis of Poverty

The poverty line of ₦ 395.41 has been the basis for poverty incidence, depth and severity indices for 1985/86 and 1992/93 periods. However, these poverty measures are dependent on the chosen poverty line. Hence, it would be meaningful to do some sensitivity analysis of the poverty indices over time and cross sectionally by changing the poverty line. This is done in the tables that follow. Table 4.29 shows that if the poverty line of₦ 237.246 was used as the poverty line, then only 18.67 percent of the population would have been in poverty. Similarly, by using ₦ 553.574 as the poverty line almost 48.9 percent of the population would have been in poverty.

Table 4.29: Poverty Simulation with Varying Poverty Line

Poverty Line	Head Count Index (P_0 %)	Depth Index (P_1 %)	Severity Index (P_2%)
(Z=₦237.246)	18.67	6.67	3.19
Elasticities: with respect to Mean Consumption	-1.37	-1.78	-2.19
(Z=₦316.328) (1)	26.88	10.71	5.64
Elasticities: with respect to Mean Consumption	-1.20	-1.51	-1.80
(Z=₦474.492) (1)	41.89	18.66	10.84
Elasticities: with respect to Mean Consumption	-1.00	-1.24	-1.45
(Z=₦553.574) (1)	48.95	22.46	13.43
Elasticities: with respect to Mean Consumption	-0.90	-1.16	-1.35
(Z=₦632.656) (1)	54.34	26.08	15.98
Elasticities: with respect to Mean Consumption	-0.82	-1.08	-1.26
(Z=₦711.738) (1)	59.58	29.52	18.47
Elasticities: with respect to Mean Consumption	-0.74	-1.02	-1.20
(Z=₦790.820) (1)	62.2	32.76	20.89
Elasticities: with respect to Mean Consumption	-0.67	-0.96	-1.14

Note: Z= Poverty Line; (1) Indicates Poverty Line in 1985 prices used throughout the paper.
Source: NCS, 1985/86 and 1992/93.

An important aspect of this analysis is shown above where poverty is simulated using different poverty lines (Z). The poverty measures used in this paper, are sensitive with respect to the poverty line chosen. The 1985/86 relative poverty line of Z=₦395.41 is super-imposed on the 1992/93 expenditure, by using the mean estimated consumer price index. It is obvious that the choice of an index has a bearing on the number of poor and the depth and severity of poverty.

In order to understand the impact in changes in mean consumption and Lorenz curves in general the elasticities of each of the poverty measures need to be estimated. This is also presented in Table 4.29. Since we are estimating point elasticities the estimate differs depending on which point we choose. The poverty lines were chosen depending on different possible rates of inflation. Other than elasticities we also indicate the general changes in poverty indicators. It is useful to note the responsiveness of poverty measures decreasing with higher levels of poverty lines.

4.7 Dominance Test of Poverty

Apart from this broad changes in poverty due to changes in poverty line it is useful to do more detailed analysis of changes in poverty using dominance tests. This involves plotting the entire distribution of expenditures by cumulative proportion of population (or decile) in terms of regions, geographical locations and socio-economic groups.

The usual first test in this, "first order dominance", involves plotting the cumulative percent of people at successive levels of per capita expenditures. If we plot this for a country in two different periods and if period two is always below the initial period then it implies that poverty has declined over time and any change in poverty line will not change this result. However, if ever these lines were to intersect then the welfare implications of this will depend upon where one sets the poverty line and also vary according to different classifications. It is also

possible to carry out higher order dominance tests using "poverty deficit curves" which plot the area under the cumulative distribution at each expenditure level. Figure 3 depicts the first order dominance test for Nigeria using 1985 and 1993 information (as in Figure 3) 1/. In all classifications we find that poverty has declined between 1985 and 1993. The figures (in Appendix 2) show the cumulative distribution functions of national, urban, rural and Lagos urban.

In principle, the entire distribution of expenditure must be plotted, but in practice this can be restricted to the highest possible location of the poverty line. We restrict the distribution to 120% of the poverty line, a reasonable upper limit for the poverty line as seen in figure 3. Between 1985/86 and 1992/93 the two curves intersect between 40 percent and 60 percent of the poverty line, (around 45 percent) showing that the conclusions about poverty incidence are sensitive to where in that range the line is set. Any poverty line below 45 percent of the line, will result in an unambiguous increase in poverty.

The higher order dominance tests were carried out by plotting the poverty deficit curve and poverty severity curve. The deficit curve is the area under the incidence curve. A fall in poverty requires that the poverty deficit curve is nowhere lower for 1985 at all points up to the poverty line. As we see in Fig A2.4 (Appendix 2), the 1985 deficit curve intersects the 1992 curve around 35 percent of the poverty line, which makes the second-order dominance test inconclusive. The third order dominance test relies solely on the distribution sensitive measures such as P_2. A poverty severity curve is the area under the poverty deficit curve; the dominance test is again inconclusive, since the 1985 severity curve intersects the 1992 curve around 55 percent of the poverty line. This means that conclusions about poverty distributions are not likely to be robust.

If the poverty line was at₦ 158.16 per annum per person then poverty would increase between 1985-92 from 2.67 percent to 3.69 percent. This indicates that in terms of poverty trends while the whole Nigerian population did not uniformally benefit from the economic growth achieved since the mid 1980s. There are substantial segments of the population, especially those in the bottom decile, who have actually neither participated nor benefited from the economic growth since the mid 1980s. Hence the future growth strategy for Nigeria needs more poverty focus if it has to ever prove beneficial to the extreme poor.

1/ We also do the dominance tests in higher order (using the poverty deficit curve and poverty severity curve) and also in terms of broader regions and geographical zones. The results are presented in Appendix 2.

Figure 4.3: First order dominance Test 1985-92.

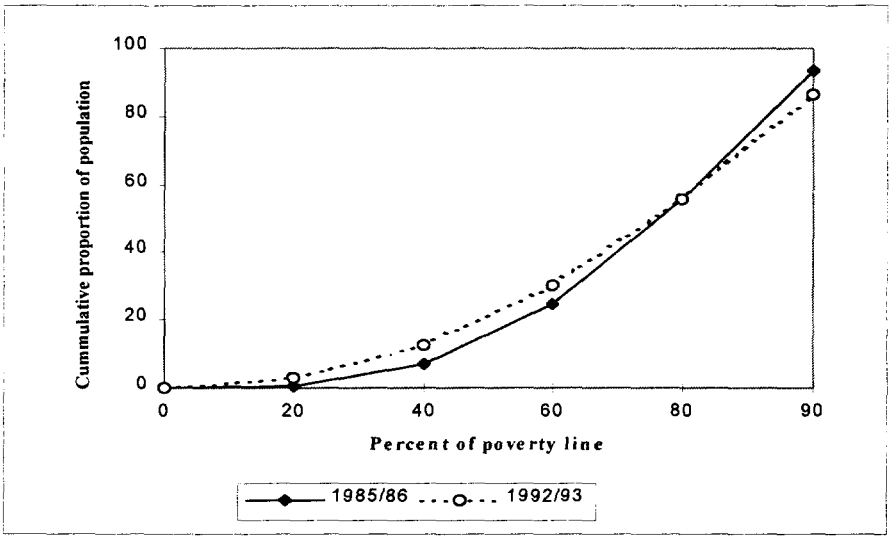


Table 4.30: Projected Impact of (5%) Distributionally Neutral Growth in Real per Capita Expenditure on Poverty (1994-2005)

Year	Mean Per Capita Expenditures	Head Count (P_0 %)	Depth Index (P_1 %)	Severity Index (P_2%)
1994	825.34	32.54	13.78	7.85
1995	842.18	31.95	13.41	7.61
1996	859.37	31.30	13.03	7.38
1997	876.91	30.54	12.66	7.16
1998	894.80	29.95	12.31	6.94
1999	913.07	29.22	11.95	6.72
2000	931.71	28.41	11.61	6.51
2001	950.72	27.80	11.27	6.31
2002	970.12	27.05	10.94	6.11
2003	989.92	26.03	10.62	5.92
2004	1010.12	25.39	10.32	5.73
2005	1030.73	24.75	10.01	5.55

Source: NCS, 1985/86 and 1992/93.

As mentioned earlier, poverty is widespread and cannot be eliminated without sustained economic growth. Nigeria needs to choose a growth strategy which ensures that the poor benefit. A poverty reducing growth strategy for Nigeria, will need to start with removing any existing restrictions on labor mobility and moving agricultural policy and practices away from a bias towards specific crops to encouraging an environment where producers will shift towards the most profitable crops. A long term vision for growth will be based on broad based export production to provide the cash stimulus to get the economy moving. Under such a strategy, the government would promote exports by creating appropriate conditions by removing those fiscal, regulatory and monetary restrictions that tend to hamper export development. Labor intensive exports would create employment and incomes which would increase the demand for upstream activities and for domestically produced food.

The above strategy with a growth rate of 5 percent in real per capita expenditure during the 1990s and the first decade of the next century would produce the results in Table 4.30. This per capita growth rates can be achieved if accelerated GDP growth is accompanied by decelerated population growth. Such a combination of economic growth and decelerated population growth would reduce the percentage of the population below the poverty line, from 32.5 percent in 1994 to 24.7 percent in 2005[8]. The remaining poor could be brought to the poverty line by targeted transfers.

5. EXPENDITURE PATTERNS OF THE POOR

The analysis so far has focused on per capita expenditure, as a measure of welfare. We have mentioned the significance of changes in welfare due to increases in farm income. It is useful to check the importance of this and other sources both in the expenditure and in the income of the household, to see whether these differ according to poverty status. We have also presented disaggregation on a rural/urban split, regional basis, by poverty status and by gender of head of household. As we have done before, we want to distinguish the very poor from the poor and non poor. This has been done by aggregating poor by the core poor and others.

The presentation has been done in two parts. Each table show the share of the different categories in total expenditure, within each group. This presentation is useful to see how important an item or category is for each poverty group. It also indicates the extent by which each group will be affected by changes in the price of the item, for example when subsidies are cut or prices are increased. The tables also present the changes in the per capita expenditure for each item during the period of our study.

According to Table 5.1, in 1985, 83.8 percent and 77.7 percent of expenditures by the core poor and the poor respectively was on food. In 1992 the value had decreased to 76.7 percent for the core poor and 77.7 percent for all poor. For the non poor, the values are 63.4 percent and 65.8 percent for both periods respectively. This clearly shows that even though general economic conditions have improved, in Nigeria as a whole, the share of food in total per capita expenditure does not reflect it. In 1992 the value had increased to 67 percent from 66.1 percent in 1985. Food consumption and in turn nutritional welfare are likely to depict an adverse trend between 1985-93.

Table 5.2 shows the evolution in food and non food expenditures by different regimes and socio-economic groups. Food expenditures have gone up by 51.4 percent for the rural and 27.4 percent for other urban(excluding Lagos) households. In 1985 food expenditures as share of total was 66 percent, and in 1992 the value was 67 percent. This happened despite an increase in the real per capita expenditure and fall in poverty during this period. There are several plausible explanations for this rise in food share. It could be due to change in tastes, increase in the relative price of food, reduction in rationing or over-reporting of non-food expenditure in the first survey and under-reporting of non-food expenditure in the second survey. Although, all or some of these

[8] The simulations are based on per capita household expenditure, with 1992 as the base year; with real income growing at 5 per cent per annum.

reasons are plausible, the effect of an increase in the relative price of food (assuming, plausibly that food demand is not price elastic) by 15 percent over the non-food prices is partly responsible for the food shares to be the same during 1985-92, even though the per capita expenditures have increased by 34 percent.

For urban (excluding Lagos) the values are 68.4 percent and 72.95 percent for 1985 and 1992 respectively. An increase of 4.5 points in the urban areas shows a worsening of food consumption welfare. In Lagos urban, we find that in 1985 food expenditures were 70.8 percent of all expenditures. In 1992 the share had increased to 76.0 percent. Although the increase is not as large as for other areas, it is important to stress the fact that welfare levels throughout Nigeria have not performed well over this period. The table gives the values for male and female headed households. In male headed households, 67.8 percent and 74.5 percent are the foodshares for 1985 and 1992 respectively. In female headed households, we find 65.8 percent and 66.5 percent as the share of food in total per capita expenditure for 1985 and 1993 respectively. There is no significant difference between the changes in the male versus female headed households.

Table 5.3 shows the shares of food and non-food expenditures in total expenditure by agro-climatic zones. In the Southern belt, which has shown the largest increase in per capita expenditures over the 7 years period, food as a share of total expenditure was 66.3 percent in 1985 and 74.5 percent in 1992. While the share of food to total expenditure has decreased by 1.09 percentage points and 3.14 percentage points in the northern and middle belt respectively, it has increased by 4.0 points in the South.

Tables A1.1-A1.3 (in Appendix 3) show a breakdown of food expenditure. The tables show that the expenditure on cereals, meat and starchy food items, has increased both for the poor and non poor. The same pattern is observed in the urban and rural breakdown and in the geographical region breakdown. However, there has been a sharp decline in the per capita expenditure on poultry, pulses and nuts. On a geographical basis, we find the a the largest increase in food expenditure was on fats and oils. However, the expenditure on rice, meat and poultry declined in the north. In the south the same pattern holds but we find the largest increase in the Southeast has been on pepper followed by beans and tomatoes.

Tables A1.4-A1.5 show a breakdown of non-food expenditures. There has been a 30.1 percentage points decline in expenditures on non-food, nationally. More so for the poor than the non-poor. The non-food expenditures increased for all items except clothing education and medical expenses (which decreased by 68 percentage points), while the expenditure on transportation (mostly due to durables) has increased by 469 percentage points. Looking at the rural urban split, non-food expenditures have increased only in rural areas and in Lagos Urban. In the rural areas, non food expenditure increased by 36.3 percent, while in the urban areas it increased by 31.24 percent. In the other urban areas, the largest decline was in medical services and the largest increase in household items. The same pattern is seen at the agro-climatic zonal basis. In the northern regions, the largest increase was in household items, while the largest decline was in services. In the south however, the largest increase was in transportation and the largest decline was again in services.

On the income side, per capita household income has increased by over 70.7 percent between 1985-92 (Tables A1.6-A1.8), mainly due to a big increase in farm income(324 percent), while non-farm increased by 120.9 percent. Non-farm income showed the biggest increase in Middle and Southern belts. Within the non-farm income group, the biggest increase were due to rent received and other income. Wage income received by households decreased by 5.8 percent during this period. Similar patterns were observed in rural and urban areas and by geographical areas. Wage incomes showed the largest increase in the northern belt and the smallest increase in the southern belt. This may also be reflecting the fact that even at lower real wages more members of the household might have been employed.

Table 5.1: Evolution of (Real) Per Capita Expenditure by Type and Poverty Group (Poverty Line=₦395.41)

	POOR		NON-POOR		ALL NIGERIA	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Own Consumption	28.85	56.24	59.00	370.80	44.74	263.55
Food Cash Expend.	171.73	119.888	479.14	343.51	346.89	267.27
All Food Expend.	197.58	176.12	538.14	714.31	391.62	530.82
Non Food Expend.	56.69	50.50	310.30	371.14	201.19	261.82
P. C. Expend.	254.27	226.62	848.43	1085.45	592.81	792.64
	EXTREME POOR		**OTHERS**		**ALL NIGERIA**	
			(Poverty Line=₦197.71)			
Own Consumption	15.83	40.16	48.68	298.85	44.74	263.55
Food Cash Expend.	107.81	55.45	379.45	300.74	346.89	267.27
All Food Expend.	123.64	95.61	428.13	599.59	391.62	530.82
Non Food Expend.	24.30	28.98	225.28	298.62	201.19	261.82
P. C. Expend.	147.94	124.59	653.41	898.21	592.81	792.64

Source: NCS, 1985/85 and 1992/93.

Table 5.2: Evolution of (Real) Per Capita Expenditure by Type, Region and Gender (Poverty Line=₦395.41)

	RURAL		OTHER URBAN		LAGOS URBAN	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Own Production	53.24	62.54	30.56	18.63	1.20	8.76
Food Cash Expend.	288.08	443.96	446.99	577.57	530.63	726.20
All Food Expend.	341.32	516.72	477.55	608.36	539.87	748.24
Non Food Expend.	189.96	109.91	220.77	183.38	222.80	237.70
P. C. Expend.	531.28	707.63	698.32	791.74	762.67	985.94
	MALE HEADED		**FEMALE HEADED**		**ALL NIGERIA**	
Own Consumption	52.75	44.43	43.64	54.26	44.74	45.45
Food Cash Expend.	396.41	487.89	340.07	590.77	346.89	498.48
All Food Expend.	449.16	542.94	383.71	659.34	391.62	554.92
Non Food Expend.	213.71	185.41	199.47	221.94	201.19	189.17
P. C. Expend.	662.87	728.35	583.18	881.28	592.81	744.09

Source: NCS, 1985/86 and 1992/93.

Table 5.3: Evolution of (Real) Per Capita Expenditure by Type and Geographical region (Poverty Line=₦395.41)

	NORTHERN BELT		MIDDLE BELT	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**
Own Consumption	54.72	168.24	49.77	344.92
Food Cash Expend.	309.14	271.23	324.37	142.50
All Food Expend.	363.86	439.47	374.14	487.42
Non Food Expend.	174.54	194.44	177.50	266.14
P. C. Expend.	538.40	633.91	551.64	753.56
	SOUTHERN BELT		**ALL NIGERIA**	
Own Consumption	39.46	304.18	44.74	263.55
Food Cash Expend.	371.10	317.15	346.89	267.27
All Food Expend.	410.56	621.33	391.62	530.82
Non Food Expend.	245.86	313.15	201.19	261.82
P. C. Expend.	656.42	934.48	592.81	792.64

Source: NCS, 1985/86 and 1992/93.

6. CONCLUDING REMARKS

Poverty declined sharply from 43 percent of the population in 1985 to 34 percent of the population in 1992. However we observe that, despite this, some households suffered a loss in incomes. The top 10 percent of the population had more than 47 percent increase while the bottom 20 percent of households experienced absolute decline by more than 20 percent. The latter group form the extreme poor of Nigeria who have been adversely affected in terms of poverty and welfare during this period

Although growth reduced poverty, the distribution of income has worsened during the same period. This is particularly true for the rural sector and the extreme poor for whom the depth and severity of poverty increased between 1985-92. If income distribution had remained unchanged, the national incidence of poverty would have declined further by another 4 percent. The Lagos urban area is the only region where income distribution improved. Hence, for all other regions growth without improvements in income distribution have adversely affected the extreme poor in Nigeria.

Poverty declined in Nigeria mainly due to the 34 percent growth in household expenditures which was a result of economic growth. However, the regional pattern of household expenditure growth is varied in different parts of the country. While the south and middle zones had higher growth rates of household expenditures, the northern zone experienced hardly any growth. This particularly evident in the rural areas of the north.

Poverty in Nigeria differs depending on socio-economic groupings. Those with no education comprise the poor and extreme poor, and this is very true in rural areas. If the household head is older, the probability of being poor increases. Wage workers and self-employed are often poor. Households which are large and families with large number of children are more frequently poor.

6.1. Analytic Methodology

Several lessons can be learnt from the methodology in this paper. First the results have demonstrated that there is a difference between the poor and the extreme poor. It has also been established that while the headcount declined for the poor and extreme poor, depth and severity actually increased for the extreme poor. This would have been entirely missed if the analysis had used only one poverty line. Second, it is important to check how robust the results are, to changes in the poverty lines and poverty measures. Sensitivity analysis showed that all major patterns remained unchanged with small changes in the poverty lines. Dominance analysis permitted us to broaden that conclusion, and did indicate that caution was needed because for values up to almost half of the present poverty line, the conclusions would be reversed, in the sense that, it would find an increase in poverty over the seven year period. Third, the decomposition analysis of the over-time changes in poverty into growth and redistribution, and further into intra-sectoral and population shifts, was particularly useful to understand the dynamics of poverty and its implications for a continuously changing scene.

The analysis of targeting indicators is very useful to identify vulnerable groups. This is particularly useful to policy makers who always ask the question, who are the vulnerable groups and who should be targeted. Lastly, our use of a multi-dimensional approach in combination with decomposable poverty indices proved to be a very effective tool in linking economic change to welfare of households and individuals within the household. We do not claim in any way to have proved causality, as perhaps we could have done with a comprehensive economy-wide model, but what we do claim is that this collaborative effort has broken ground in the field of poverty in Nigeria. However, a lot of research still needs to be done to explain many of the findings in this paper.

6.2. Beyond the Poverty Profile

Considering the severe constraints imposed on the poverty profile by the difficulties in accessing and cleaning the Nigerian data sets, it is important that consideration be given to follow-up strategies to improve in-country capacity for data collection and analysis and establishing poverty monitoring systems. A systematic study is needed to fully assess user-oriented data needs for Nigeria. This paper recommends the establishment of an annual monitoring report on poverty and welfare in Nigeria. Year-to-year changes in Nigeria were very drastic as we saw, and there is no reason to think that these changes will not occur again. The paper also recommends that both household expenditure and basic needs information is needed, since neither is by itself sufficient to give a full picture of welfare. We recommend that once in every five years an integrated living standards survey be carried out to permit in-depth analysis of household behavior and response.

Apart from that, there should be other quicker monitoring surveys, or even some sort of priority surveys, focusing only on selected basic needs variables of the sort indicated before - for example, for the rural areas, the mix of crops they farm, the quality of their land, the value of their assets such as livestock, or even the degree to which they rely on wage labor compared to better off farmers. There is no information on the asset base, typical of the poor and the sort of

assets the poor lose first, when coping with survival crises. The lack of these indicators makes it difficult to build up an understanding of the capabilities and resources of the poor - in terms of physical assets and human resource endowment. The survey should include some limited information on household expenditures, solely to provide the means to group households into approximate expenditure quintiles.

One rather overwhelming lesson which the research team learned is the complexity, cost and time-consuming nature of analyzing two years of a National Consumer Survey. Expenditure coding was overwhelmingly large. With 1600 codes for household expenditure, one cannot do this type of research without questioning whether these codes could not be aggregated into 50-100 key expenditure items, same as the items for which prices are collected.

Another key lesson for the team has been the fact that the Nigerian statistical system is in need of a major overhaul. A complete review of the system is crucial, not only for poverty monitoring, but for the basic information needed to understand welfare in Nigeria.

The data used in this study was particularly weak with respect to information on women. Gender analysis in the paper was limited because of the nature of the data set. In most surveys, and the present one is no exception, women are liable to be missing. This invisibility does not only refer to failure to count women, but also to the way questions are posed and coded. For example, in so far as it is true that men are more likely than women to be participants in the modern sector, then, a focus on that sector will exclude women. We recommend that the next surveys should consider these issues for improved policy-making and planning, and make a significant contribution to the gender dimensions of poverty. Data collection could focus on: (a) female resources: education, responsibility for child care, (b) female economic activity: time use, work actually done by women, whether paid or, more commonly, unpaid, and (c) female poverty:

Finally there is need to enrich our knowledge and expand information on measuring poverty in terms of its multi-dimensional nature. There is very scarce reliable information on the social indicators of welfare for Nigeria. It is necessary to collect annual or periodic monitoring indicators for measuring changes in living and welfare conditions. This is fundamental in understanding the deprivations faced by the poor and in designing poverty alleviation programs. A critical analysis of coping strategies of the poor can help design safety net programs for those hardly hit. Also poverty alleviation is not feasible without a comprehensive employment policy. There is very little information about the functioning of labor markets, wage formation and labor legislation. Gender dimensions of poverty need to be understood more clearly to be able to design programs that can target the poor women and children. An integrated "food poverty" analysis together with "money-metric" poverty measures to address the nutritional and health consequences of the poor, is also a high priority.

In summary:

a) Nigeria needs to establish a demand driven poverty monitoring system which will include a poverty monitoring unit, and a program of both quantitative and qualitative surveys;
b) The FOS should continue to collect basic welfare indicators through an annual household survey. The current NISH can provide the basis, but a number of improvements can be made

to the questionnaire design, the data entry and processing procedures and to the ways in which the data are disseminated and analyzed - so as to improve the quality and timeliness of the results;

c) A more detailed integrated survey, including full income and consumption details should be carried out once every five years;
d) The formal statistical surveys need to be supplemented with a program of qualitative studies that would be capable of addressing qualitative aspects of poverty that the surveys do not capture well;
e) Consideration should be given to the idea of a panel study (or to the establishment of a Sentinel Site Surveillance System, with a permanent panel of sites) for monitoring how changes in moneymetric and other indicators affect the same households over time.

APPENDIX 1

Table A1.1: Evolution of (Real) Per Capita Food Expenditure by Region (Poverty Line=₦395.41)

	RURAL		OTHER URBAN		LAGOS URBAN	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Rice	57.47	45.35	88.14	25.98	112.49	19.01
Millet	12.01	14.94	25.20	6.65	0.33	0.01
Other Cereals	11.04	24.42	18.71	10.50	25.40	3.83
Total Cereals	*99.37*	*104.18*	*147.86*	*107.06*	*142.77*	*113.60*
Meat	31.39	24.5	56.40	31.69	75.56	27.46
Poultry	5.06	0.31	3.09	0.18	6.59	0.20
Fish	17.85	29.46	20.16	34.09	29.40	36.34
Meat/Fish/Poultry	*54.30*	*54.27*	*79.65*	*65.96*	*111.55*	*64.00*
Yam/Yam Products	14.78	56.0	27.67	47.97	28.95	46.88
Cassava	12.25	40.64	20.58	37.30	32.94	36.16
Other Starchy	-		-	4.56	-	
All Starchy	*27.03*	*87.97*	*48.25*	*120.97*	*61.89*	*136.72*
Fats and Oils	10.09	0.34	17.11	0.54	19.47	3.19
Dairy Products	10.09	9.77	16.76	15.39	23.21	28.24
Pulses and Nuts	66.87	25.46	61.31	20.08	51.19	5.83
Fruits	18.17	10.70	22.03	13.85	30.53	15.06
Beverages	2.38	1.09	3.98	2.52	8.06	2.55
Tomatoes	2.79	16.26	8.22	25.62	7.92	22.68
Beans	10.88	45.35	17.30	54.65	26.71	41.32
Vegetables	21.64	14.24	28.41	22.14	20.22	19.86
Sugar	7.04	15.19	7.03	17.75	6.09	16.30
Pepper	4.41	37.65	7.74	36.20	22.18	33.65
Other Foods	9.24	19.05	11.90	15.32	8.09	10.85
Total Other Foods	*163.6*	*194.67*	*201.79*	*224.06*	*223.66*	*199.53*
Total Food	**344.3**	**529.92**	**441.31**	**536.03**	**539.87**	**467.86**

Source: NCS, 1985/86 and 1992/93

Table A1.2: Evolution of (Real) Per Capita Food Expenditure by Gender (Poverty Line=₦395.41)

Expenditure Type	MALE HEADED		FEMALE HEADED		ALL NIGERIA	
	85/86	92/93	85/86	92/93	85/86	92/93
Rice	80.91	25.24	67.26	22.22	68.91	22.53
Millet	8.99	4.27	17.56	12.46	16.53	11.61
Other Cereals	13.63	12.05	13.95	19.72	20.74	18.93
Total Cereals	*123.21*	*120.54*	*116.10*	*121.49*	*117.0*	*86.60*
Meat	39.23	39.13	40.92	25.8	40.71	27.17
Poultry	2.98	0.26	2.42	0.26	2.49	0.26
Fish	28.69	57.39	17.44	28.29	18.81	31.29
Meat/Fish/Poultry	*70.90*	*96.78*	*60.78*	*54.35*	*61.47*	*58.72*
Yam/Yam Products	30.32	72.47	18.00	50.64	19.49	52.89
Cassava	23.14	62.18	14.37	36.70	15.43	39.32
All Starchy	*53.46*	*134.65*	*32.37*	*87.34*	*34.92*	*92.21*
Fats and Oils	15.92	0.63	12.23	0.46	12.67	0.48
Dairy Products	12.38	10.56	12.62	12.39	12.59	12.20
Pulses and Nuts	65.74	23.25	64.59	23.07	64.73	23.09
Fruits	27.03	12.46	18.66	11.88	19.67	11.94
Beverages	3.92	2.28	2.89	1.56	3.01	1.64
Tomatoes	5.76	26.92	4.63	18.98	4.77	19.80
Beans	17.80	78.83	12.71	45.18	13.33	48.64
Vegetables	24.98	21.54	23.88	16.74	31.77	17.23
Sugar	7.77	21.48	6.92	15.53	7.03	16.14
Pepper	8.60	54.45	5.41	35.04	8.71	37.03
Other Foods	11.71	27.4	9.96	16.39	8.71	17.52
Total Other Foods	*201.61*	*279.80*	*190.0*	*307.16*	*178.28*	*205.71*
Total Food	**449.18**	**718.76**	**428.14**	**509.26**	**391.63**	**530.82**

Source: NCS, 1985/86 and 1992/93.

Table A1.3: Evolution of (Real) Per Capita Food Expenditure by Region (Poverty Line=₦395.41)

Expenditure Type	NORTHERN		MIDDLE		SOUTHERN		ALL NIGERIA	
	85/86	92/93	85/86	92/93	85/86	92/93	85/86	92/93
Rice	65.87	23.44	63.91	25.49	73.51	20.56	68.91	22.53
Millet	36.03	27.88	12.97	7.56	0.91	0.50	16.53	11.61
Other Cereals	15.68	32.85	10.56	24.19	13.66	5.71	20.74	18.93
Total Cereals	*127.75*	*84.17*	*133.83*	*57.24*	*101.02*	*26.77*	*117.01*	*86.60*
Meat	42.27	24.35	32.81	22.36	42.44	31.45	40.71	27.17
Poultry	1.27	0.36	1.55	0.09	3.92	0.25	2.49	0.26
Fish	5.97	13.02	15.96	24.15	31.10	48.74	18.81	31.29
Meat/Fish/Poultry	*50.07*	*37.73*	*56.08*	*46.60*	*77.46*	*80.44*	*61.47*	*58.72*
Yam/Yam Products	10.19	22.73	20.96	49.05	27.02	78.31	19.49	52.89
Cassava	5.21	17.56	9.80	35.32	26.54	58.20	15.43	39.32
All Starchy	*14.89*	*40.29*	*25.64*	*84.37*	*53.56*	*136.51*	*34.92*	*92.21*
Fats and Oils	8.93	0.45	13.43	0.29	15.63	0.58	12.67	0.48
Dairy Products	14.21	16.38	9.65	7.37	12.33	10.96	12.59	12.20
Pulses and Nuts	61.93	27.95	62.62	24.65	67.99	18.59	64.73	23.09
Fruits	16.38	10.35	15.93	11.23	24.01	13.49	19.67	11.94
Beverages	2.77	0.81	1.60	1.23	3.77	2.46	3.01	1.64
Tomatoes	5.02	17.26	3.57	15.00	5.01	23.85	4.77	19.80
Beans	10.48	35.79	8.54	45.28	17.68	60.20	13.33	48.64
Vegetables	22.39	12.48	22.96	16.90	30.29	21.12	25.98	17.23
Sugar	7.43	18.60	6.87	13.59	6.30	15.28	7.03	16.14
Pepper	5.05	23.92	3.40	35.69	7.37	47.95	8.71	37.03
Other Foods	10.95	3.81	7.77	7.78	5.96	32.48	8.71	17.52
Total Other Foods	*172.16*	*167.80*	*158.59*	*179.01*	*155.19*	*246.96*	*178.28*	*205.71*
Total Food	**371.51**	**439.47**	**342.22**	**487.42**	**428.58**	**621.33**	**391.63**	**530.82**

Source: NCS, 1985/86 and 1992/93.

Table A1.4: Evolution of (Real) Per Capita Non Food Expenditure by Region and Gender (Poverty Line=₦395.41)

	RURAL		OTHER URBAN		LAGOS URBAN	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Drinks	12.39	14.12	12.82	17.27	20.00	26.19
Fuel and Lighting	11.79	49.52	20.33	49.52	10.58	35.83
Accommodation	5.06	3.51	7.79	10.63	6.69	17.7
Household Items	4.21	38.09	5.11	38.91	5.19	29.23
Personal Care	9.09	30.34	11.93	42.22	6.90	34.38
Clothing	49.42	24.51	50.11	24.79	60.70	27.79
Education/Books	3.44	2.90	4.92	3.03	7.24	6.42
Medical Services	39.83	12.85	43.31	13.95	37.18	10.26
Transportation	3.91	18.76	5.90	26.80	6.86	27.90
Services	39.75	16.39	43.22	18.89	47.20	21.68
Other Expenses	6.45	33.51	8.42	22.37	9.53	21.42
Total Non Food	**183.34**	**250.04**	**213.86**	**280.68**	**218.1**	**280.77**
	MALE HEADED		**FEMALE HEADED**		**ALL NIGERIA**	
Drinks	14.30	15.51	12.40	15.65	12.63	15.52
Fuel and Lighting	14.33	47.30	14.85	66.45	14.78	49.27
Accommodation	6.66	6.20	5.96	8.13	6.04	6.40
Household Items	5.15	37.15	4.45	47.37	4.54	38.20
Personal Care	11.55	32.85	9.86	51.21	10.07	34.74
Clothing	46.24	24.07	50.28	30.04	49.79	24.68
Education/Books	6.33	2.84	3.69	4.57	4.01	3.02
Medical Services	52.30	12.40	39.47	20.07	41.41	13.19
Transportation	5.92	21.28	4.47	27.04	4.64	21.88
Services	36.61	16.93	41.67	21.58	41.06	17.41
Other Expenses	7.96	29.57	7.07	26.06	12.22	29.21
Total Non Food	**207.35**	**254.03**	**194.17**	**329.79**	**201.19**	**261.82**

Source: NCS, 1985/86 and 1992/93.

Table A1.5: Evolution of (Real) Per Capita Non-Food Expenditure by Geographical Region (Poverty Line=₦395.41)

	NORTHERN		MIDDLE		SOUTHERN		ALL NIGERIA	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Drinks	5.84	1.94	6.21	12.53	17.94	27.51	12.63	15.52
Fuel and Lighting	19.12	44.62	11.21	45.14	12.39	54.69	14.78	49.27
Accommodation	5.25	4.59	5.24	5.14	7.04	8.35	6.04	6.40
Household Items	4.39	38.20	4.36	33.12	4.73	40.36	4.54	38.20
Personal Care	8.36	24.89	9.25	30.89	11.87	44.16	10.07	34.74
Clothing	44.56	18.80	52.93	24.49	53.11	29.41	49.79	24.68
Education/Books	2.34	0.82	3.50	2.82	5.82	4.85	4.01	3.02
Medical Services	34.72	7.17	36.07	12.64	48.45	18.18	41.41	13.19
Transportation	3.29	12.60	4.42	20.77	5.90	29.66	4.64	21.88
Services	31.05	16.23	44.07	19.85	48.60	17.31	41.06	17.41
Other Expenses	2.42	19.59	2.45	51.73	4.17	27.22	3.20	29.21
Total Non Food	**169.08**	**194.44**	**193.95**	**266.14**	**232.05**	**313.15**	**201.19**	**261.82**

Source: NCS, 1985/86 and 1992/93.

Table A1.6: Evolution of (Real) Per Capita Income by Source

	RURAL		URBAN		ALL NIGERIA	
	1985/86	1992/93	1985/86	1992/93	1985/86	1992/93
Non Farm Income	208.01	349.50	589.15	531.26	346.72	419.38
Farm Income	143.7	516.78	56.87	119.81	112.10	364.16
Total Income	351.71	866.28	646.02	650.07	458.83	783.54
	MALE HEADED		**FEMALE HEADED**		**ALL NIGERIA**	
Non Farm Income	335.79	409.47	426.21	505.78	346.72	419.38
Farm Income	112.96	355.30	105.84	441.35	112.10	364.16
Total Income	448.75	764.77	532.04	947.13	458.83	783.54
	NORTHERN		**MIDDLE BELT**		**SOUTHERN**	
Non Farm Income	260.02	376.18	252.76	406.29	358.15	459.02
Farm Income	98.56	264.02	93.04	437.69	97.36	411.92
Total Income	358.57	640.20	345.79	843.98	455.51	870.94

Source: NCS, 1985/86 and 1992/93.

Table A1.7 Evolution of (Real) Per Capita Income by Source, Region and Gender of Head

	RURAL		URBAN		ALL NIGERIA	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Non Farm Income	208.01	349.5	589.15	531.26	346.72	419.38
Esusu	5.23	5.14	7.49	5.57	6.06	5.31
Profess. Fees	24.25	18.1	86.16	30.89	46.78	23.01
Profit	28.75	32.59	140.31	102.321	69.35	59.40
Rent Received	1.43	20.43	4.53	23.71	2.56	21.69
Loan income	6.93	5.33	17.12	9.34	10.64	6.87
Wages/Bonuses	49.22	71.55	205.93	145.643	106.25	100.03
Other Income	92.20	29.87	127.61	27.68	30.39	29.03
Farm Income	143.7	516.782	56.87	119.81	112.10	364.14
Total Income	**351.71**	**866.28**	**646.02**	**651.07**	**458.83**	**783.52**
	MALE HEADED		**FEMALE HEADED**		**ALL NIGERIA**	
	85/86	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Non Farm Income	335.79	409.47	426.21	505.78	346.72	419.38
Esusu	5.90	5.02	7.20	7.82	6.06	5.31
Profess. Fees	49.52	26.63	26.87	17.63	46.78	23.01
Profit	61.20	53.99	128.60	106.56	69.35	59.40
Rent Received	2.66	20.89	1.82	28.65	2.56	21.69
Loan income	10.72	6.65	10.03	8.81	10.64	6.87
Wages/Bonuses	108.92	100.08	86.85	99.610	106.25	100.03
Other Income	96.87	28.57	164.84	33.02	30.39	29.03
Farm Income	112.96	355.30	105.84	441.35	112.10	364.14
Total Income	**448.75**	**764.77**	**532.04**	**947.13**	**458.83**	**783.52**

Source: NCS, 1985/86 and 1992/93.

Table A1.8: Evolution of (Real) Per Capita Income by Source, and Geographical Regions

	NORTHERN BELT		MIDDLE BELT		SOUTHERN BELT		ALL NIGERIA	
Expenditure Type	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**	**85/86**	**92/93**
Non Farm Income	260.02	376.18	252.76	406.29	358.15	459.02	346.72	419.38
Esusu	3.71	2.07	3.47	4.31	7.52	8.29	6.06	5.31
Profess. Fees	31.25	15.07	30.53	19.84	51.19	30.63	46.78	23.01
Profit	69.76	46.53	48.27	57.09	61.62	70.53	69.35	59.40
Rent Received	1.64	24.06	1.97	16.27	2.86	22.11	2.56	21.69
Loan income	28.64	4.93	17.65	4.83	19.40	9.27	10.64	6.87
Wages/Bonuses	51.07	63.42	77.18	102.85	127.16	127.72	106.25	100.03
Other Income	73.94	28.42	73.67	27.87	88.38	29.83	30.39	29.03
Farm Income	98.56	264.02	93.04	437.69	97.36	411.92	112.10	364.14
Total Income	**358.57**	**640.20**	**345.79**	**843.98**	**455.51**	**870.94**	**458.93**	**783.52**

Source: NCS, 1985/86 and 1992/93.

APPENDIX 2: Poverty Dominance Test Graphs (by region).

Fig A 2.1: Poverty incidence curves in 1985/86 and 1992/93 (National).

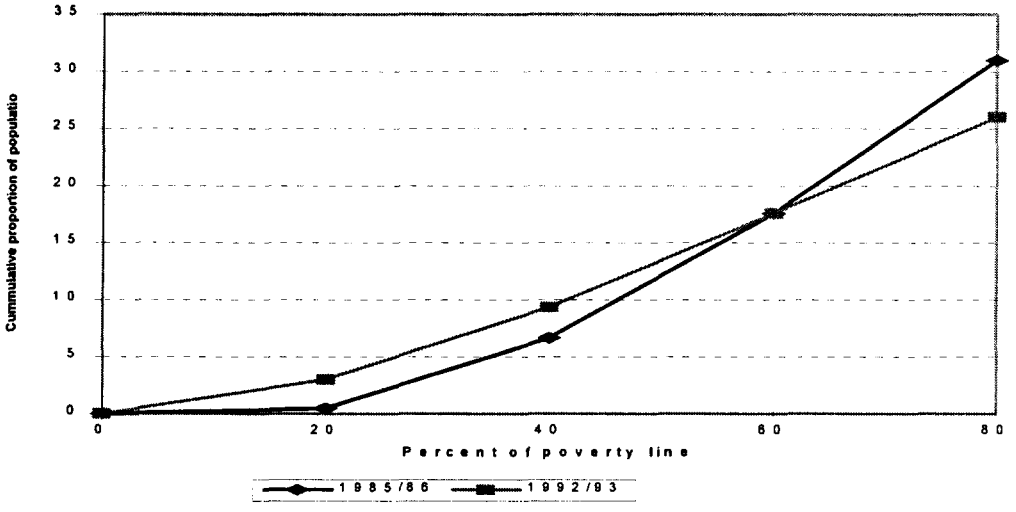


Fig A 2.2: Poverty incidence curves in 1985/86 and 1992/93 (Rural).

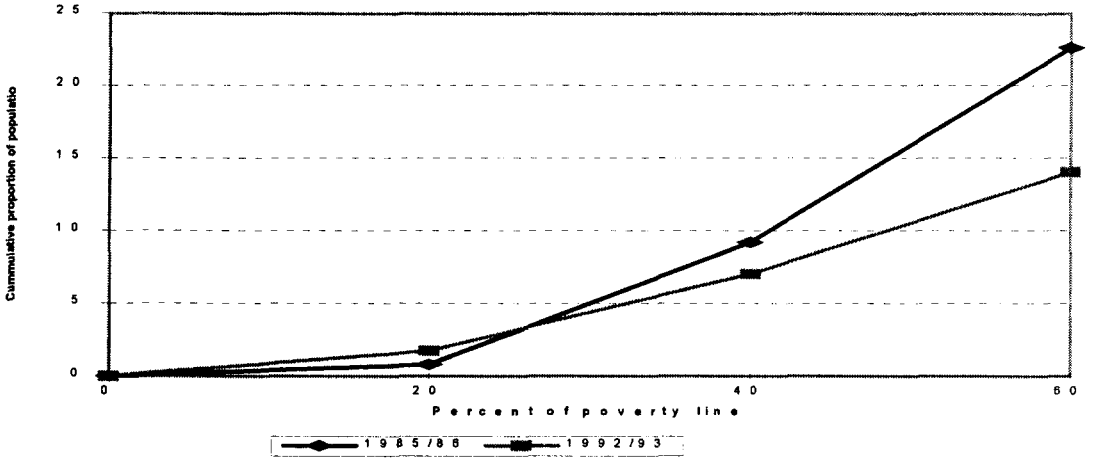


Fig A2.3: Poverty incidence curves in 1985/86 and 1992/93 (Urban).

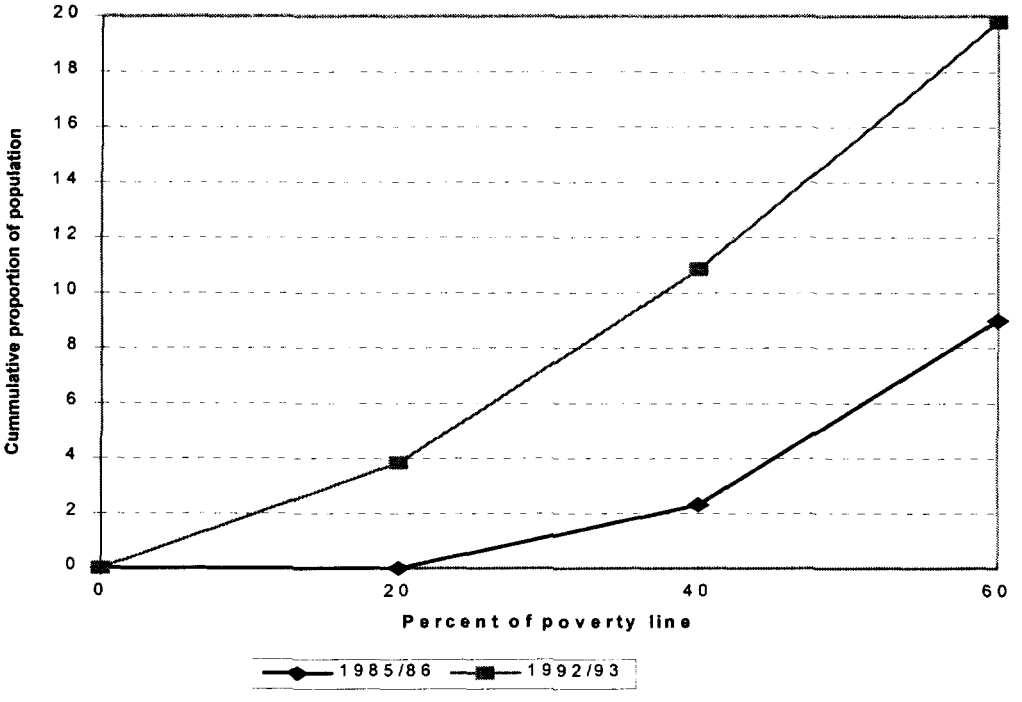


Fig A2.1: Poverty deficit curves in 1985/86 and 1992/93 (National).

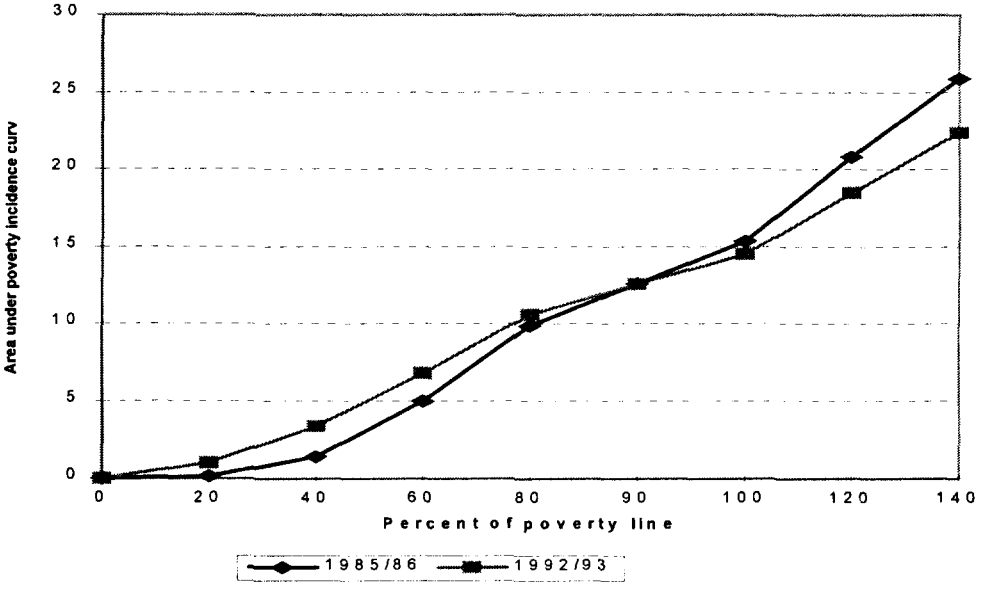


Fig A2.2: Poverty deficit curves in 1985/86 and 1992/93 (Urban).

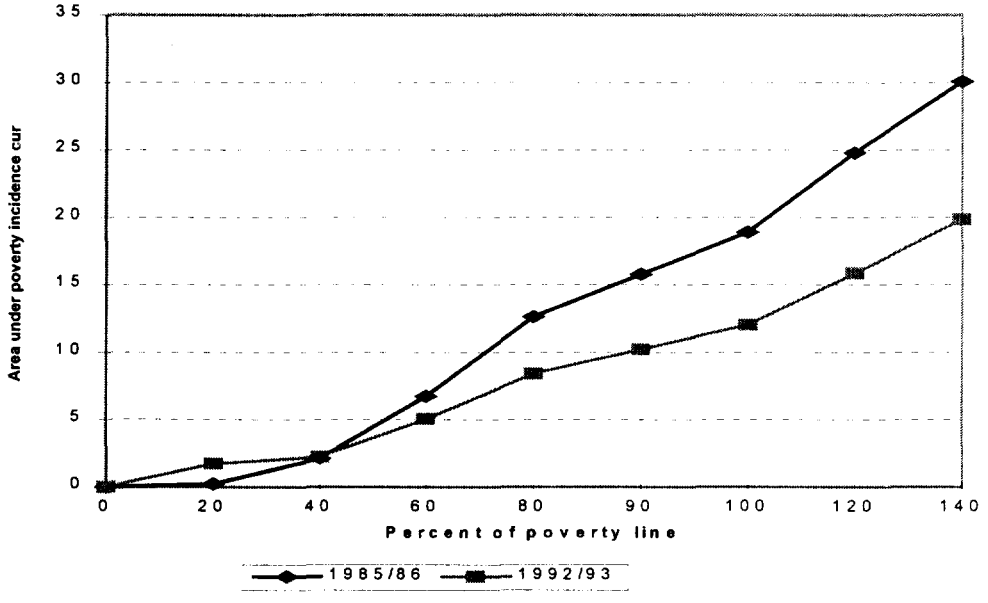


Fig A2.3: Poverty deficit curves in 1985/86 and 1992/93 (Rural).

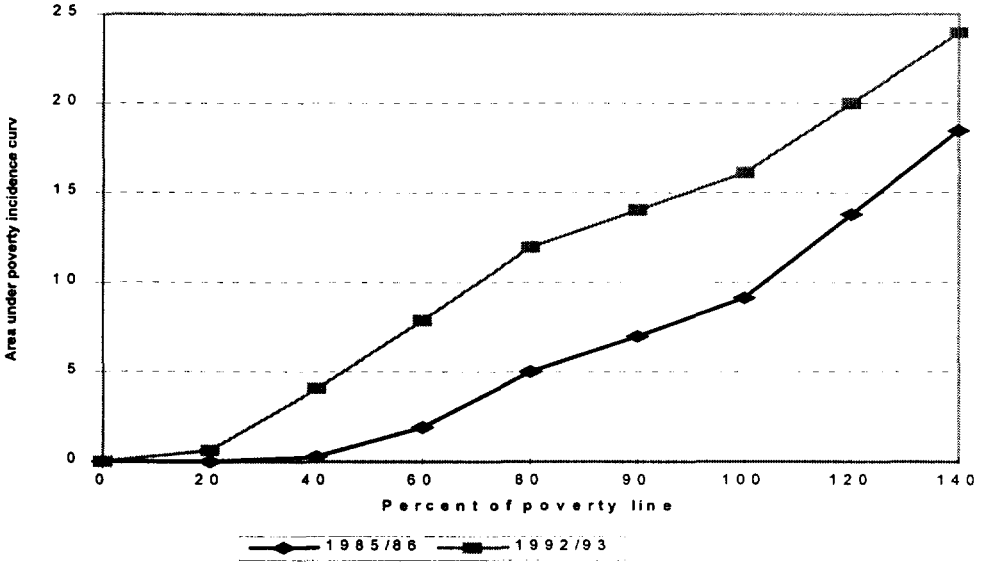


Fig A2.1: Poverty severity curves in 1985/86 and 1992/93 (National).

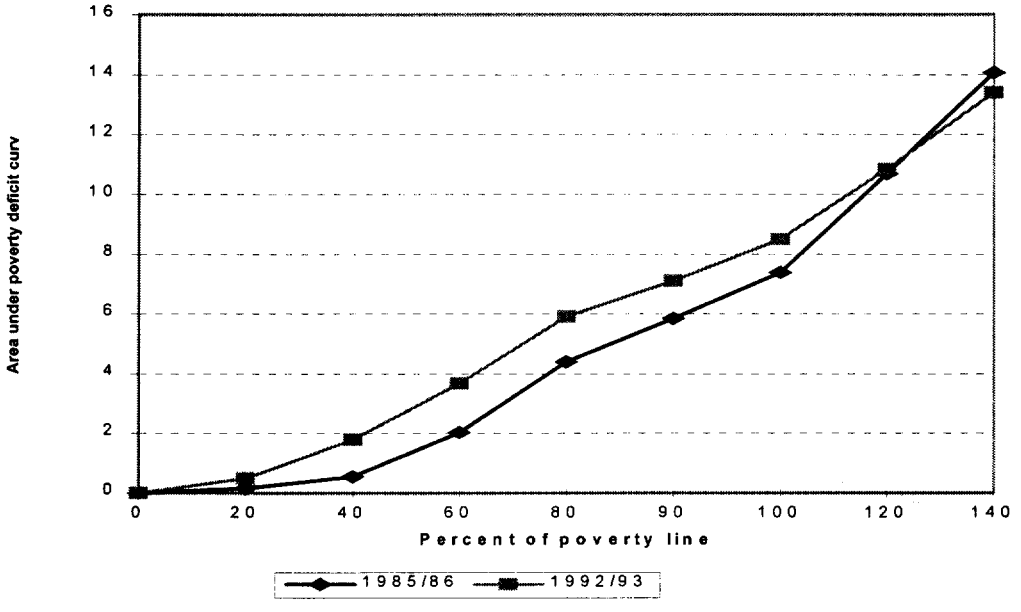


Fig A2.2: Poverty severity curves in 1985/86 and 1992/93 (Urban).

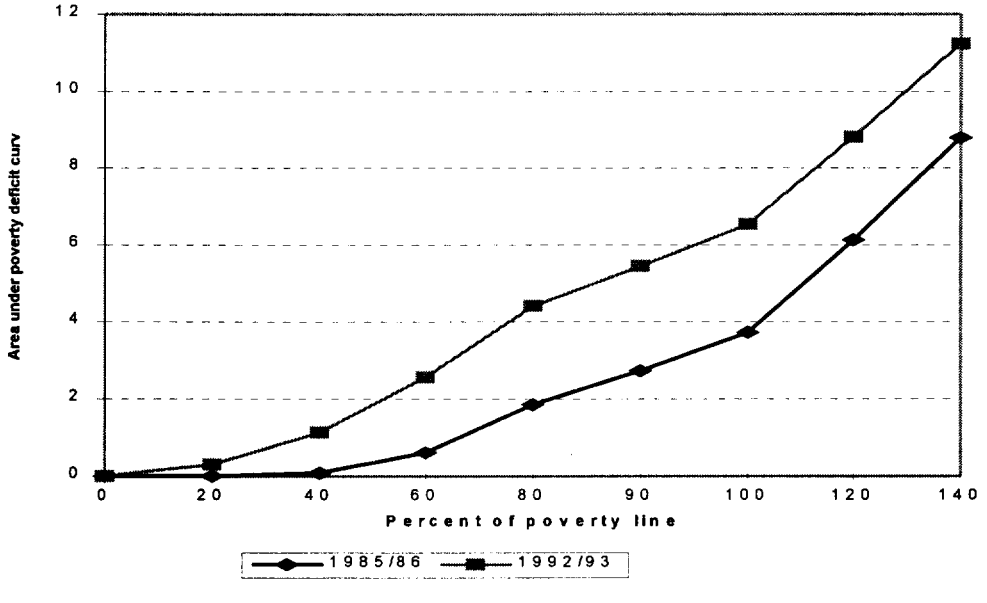
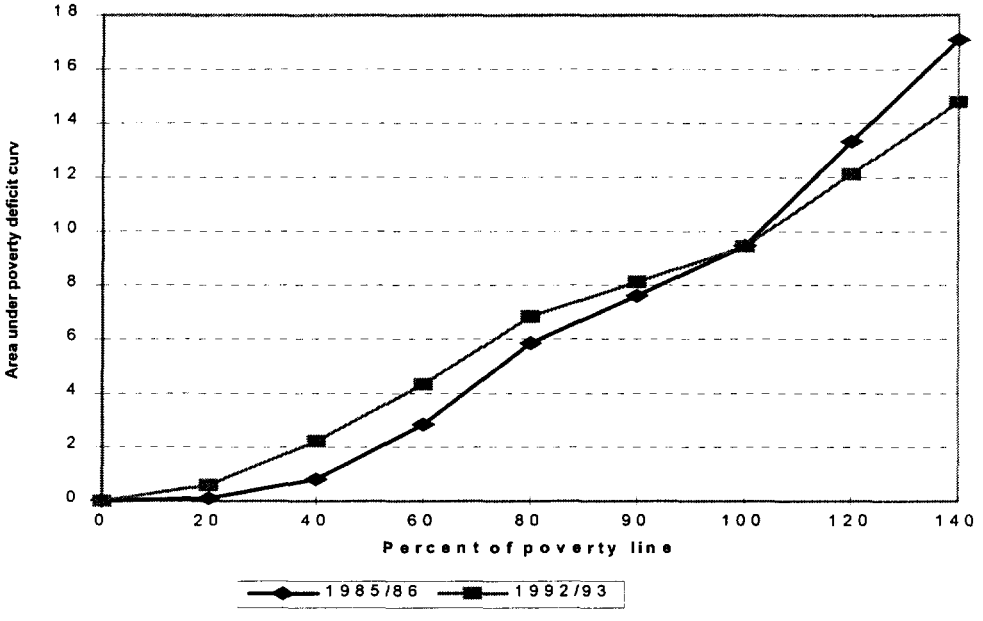


Fig A2.3: Poverty severity curves in 1985/86 and 1992/93 (Rural).



APPENDIX 3: Rural/Urban Price Deflators by State for Selected Items

Introduction

An important problem in comparing consumption levels across states or regions and time, is that prices are not constant. For Nigeria, the inter-state and rural/urban differences in prices at one point in time may be just as important as the usual inter-temporal differences associated with inflation. The consumer price index (CPI)1/ for Nigeria, published by the Federal Office of Statistics, monitors price changes over time, for a set of commodities which are predetermined for urban areas, which are not very comparable for the rural areas. There is also the issue of differences in the consumption baskets between the urban and rural areas.

Rural-Urban Price Differentials

No price index is available for the rural areas in Nigeria. Table 3.1 summarizes ten estimates which range between 120 and 181 percent and are for various dates between 1952/53 and 1984/85. The table suggests that between 1950 and 1980, there was a considerable differential in favor of the urban areas, but that this was massively eroded during the 1980s. Bevan et al (1988) presented the table on the right, in an attempt to explain urban rural income differentials. They explain that there is no estimate of differences in the cost of living between rural and urban areas. Food is cheaper in the rural but manufactures are more expensive. The nominal differentials appear in the table above, which shows that between 1950 and 1980 there was a considerable differential in favor of urban residents, although it was massively eroded in the 1980s. Indeed it seemed likely that, allowing for cost-of living differences, the differential in welfare could be reversed.

Table 3.1 Rural - Urban Per Capita Expenditure Differentials

Year	Rural	Urban	Differential (Rural=100)
1952/54	--	--	181
1974/75	--	--	163
1979/80	--	--	151
1980/81	22.45	40.18	179
1981/82	26.71	40.18	150
1982/83	27.83	40.98	147
1983/84	31.43	43.80	139
1984/85	39.51	47.41	120

Source: Bevan et Al (1988).

Past practice has been to make some assumptions about the rural-urban cost-of-living differentials, reflecting the fact that the prices for most goods, especially housing and food, tend to be higher in urban areas. These observations have often led to researchers to use different

9/ The index tracks changes in the cost of an average consumption basket in each of the capital cities of the 19 states in 1985.

poverty lines for urban and rural areas of Nigeria. This has implications for the rural/urban disaggregation of the population below the poverty line. We saw this in Chapter I.

However, a proper treatment of the urban rural price differential issue, would require a demand system analysis to construct a true spatial cost-of -living index or money metric utility function for Nigeria. This is beyond the scope of the present analysis. Nonetheless, we have attempted to correct for price differentials as shown below.

Construction of an Appropriate Price Index

In the absence of an ideal price deflator, we have based all our distributional comparisons in this paper on prices submitted by the FOS digest of statistics and on the ordinary Price Data.1/ This data, is available in FOS publications for 1985. The data, unfortunately was only for the capital cities. However, when it was decided to go with the numbers than not to correct for regional differences, we decided to use Lagos as a base. The deflator was calculated in three steps:

- First, we calculated the proportion of household expenditure that goes to each item, call this x;
- Next, we calculated the price deflator for the item, taking Lagos as base, (100). If we call this y, then the price deflator applied to each item is xy.1/
- Price deflators were calculated for 50 items considered common in the Nigerian market.

Take for example table D.1, which shows the price deflators by state for vegetables. It can be concluded that vegetables are more expensive in Lagos than in any other state in Nigeria.

Let us take some extreme cases, okro in Rivers and Yam in Cross River state, Fuel in Bauchi state and spices in Sokoto. The price of okro in Rivers was 1.77 times the price of Lagos and the price of Yams in Cross River state was 2.2 times the price of yams in Lagos in 1985/86. The price of fuel in Bauchi was 1.9 times the price in Lagos, and finally, the price of spices in Sokoto was 2.1 times the price in Lagos.

10/ There are two alternatives to construct a spatial distribution of prices. The first is a spatially adjusted CPI, which uses the expenditure data by city underlying the CPI, to construct an index normalizing all 1985/86 consumption to the rural/urban prices. A second alternative is to use the "Minimum Physical Requirements Index" method, by applying the method to average market prices compiled by FOS. This is based upon the same expenditure basket for each state.

11/ Prices were available for capital cities only. This implies that the differential in the deflators between urban and rural is greatly influenced by x, the differences in consumption proportions of the item, between rural and urban.

The simple illustration is to give a feel for the need to correct for price differential. To go a little deeper, we saw that the proportion of expenditure of the item in the household will have an influence. Take Bauchi for example where the price of fuel is 1.9 times the price of Lagos. Households in rural Bauchi consume so little fuel that it becomes important to reflect the differences in consumption patterns in our formula. Although the differential is so high, any policies enacted to correct for this price differential will have very little effect on the average rural households due to their expenditure patterns.

Use of average market prices can create some doubt about regional deflators. Though there is no hard evidence, analysts have argued that the quality of items should be taken into consideration. The use of average prices masks the quality differentials that exist between urban and rural commodities. Thus the use of these market prices could bias the estimates of the cost of a given quality of any item. Looking at the table one gets the feeling that price level in other states is generally lower than it is in Lagos, but if quality were considered, this might not be the case. However, it should be noted that we have used this deflators in all our calculations in this paper.

Table A3.2 State Price Deflators (Lagos Urban=100)

STATE	Veget-	Rice	Maize	Millet	Cereals	Meat	Fish	Poultry	Dairy	Fruits Vegs.	Okro	Other	Tomatoes	Pepper	Yams	Cassava	Beans	Melon Pulses	Onions	Nuts
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
Anambra	51.16	66.78	101.74	138.34	76.69	63.73	39.49	83.57	86.80	43.70	77.09	43.02	87.86	69.04	100.00	66.08	85.59	96.34	77.56	43.70
Bauchi	51.16	73.99	62.41	51.04	64.05	58.85	23.00	45.87	99.94	86.68	97.23	51.16	104.05	74.51	138.82	67.00	97.85	125.51	82.39	86.68
Bendel	95.72	90.81	140.75	00.00	52.25	78.12	34.87	98.01	79.90	35.34	94.49	95.72	74.84	162.63	174.13	102.61	111.87	81.48	79.34	35.34
Benue	58.08	86.34	74.54	68.31	44.07	75.39	80.64	65.43	85.25	37.50	87.11	58.09	89.37	106.90	117.64	78.26	95.48	88.44	74.22	37.50
Borno	79.22	48.14	58.29	44.25	60.99	60.83	97.76	117.90	98.71	40.92	89.50	79.22	70.86	120.10	157.63	75.64	82.67	123.64	63.98	40.92
Cr. River	48.41	77.87	77.72	00.00	81.92	82.66	109.36	73.13	98.21	32.39	111.21	48.41	145.10	54.28	216.46	73.04	98.25	89.80	98.51	32.39
Gongola	78.53	87.06	62.01	54.34	67.55	58.45	35.00	58.11	137.11	35.50	76.03	78.53	80.99	76.48	43.52	76.52	118.94	57.48	74.42	35.50
Imo	72.72	87.11	75.42	108.74	42.65	88.21	38.04	86.33	86.70	30.91	82.06	72.72	95.79	00.00	38.82	28.70	110.38	103.87	85.92	30.91
Kaduna	54.02	74.02	73.91	55.94	85.96	72.44	141.70	69.60	122.90	46.48	72.22	54.02	69.41	30.23	140.00	73.91	114.54	92.40	68.81	46.48
Kano	71.96	74.41	64.55	52.49	81.66	67.90	112.79	75.54	87.46	63.45	121.17	71.96	93.94	88.22	191.75	71.30	106.71	115.92	66.26	63.45
Kwara	31.72	81.01	55.59	54.91	88.15	68.20	129.33	62.49	109.63	33.53	79.04	31.72	76.73	61.03	117.64	70.43	107.52	77.17	77.70	33.53
Niger	51.00	87.06	62.01	54.34	67.55	58.45	62.10	58.11	137.11	35.50	76.03	51.00	80.99	76.48	98.82	88.69	18.94	57.48	74.42	35.50
Ogun	73.60	56.01	146.12	76.80	72.68	76.45	42.80	78.22	91.10	34.69	135.58	76.60	95.96	98.52	223.51	75.65	83.45	75.76	78.63	34.69
Ondo	36.14	65.50	111.51	175.39	105.03	81.47	87.02	52.12	90.89	18.57	99.12	36.14	93.58	62.15	100.00	106.08	131.44	97.00	96.76	18.57
Oyo	45.18	79.59	64.16	45.63	61.46	69.37	50.40	68.20	99.07	20.45	78.51	45.18	67.64	75.36	120.00	60.00	90.80	87.01	82.49	20.45
Plateau	66.06	94.02	84.69	84.31	52.38	81.39	60.40	54.05	89.79	38.99	84.09	66.06	54.81	107.11	138.81	58.26	105.53	69.48	64.22	38.99
Rivers	89.16	81.18	75.42	152.23	74.17	88.09	101.66	93.50	86.59	53.49	176.46	89.16	122.37	91.77	51.76	33.91	93.13	74.70	98.82	53.49
Sokoto	59.66	86.36	102.78	72.57	87.42	67.74	168.51	54.05	82.82	82.48	100.73	59.66	65.75	56.56	135.29	152.16	99.88	141.47	58.61	82.48

Note:
(1) Includes: Kulca Fresh/Dried, Water Leaf, Bitter Leaf, Tete, Lettuce, Okasi, Cabbage, Garden Eggs, Radish, Carrots, Cauliflower, Cucumber, Ewedu, Apon, Igbo (Ugu fresh/pumpkin).
(2) Includes: Brown Rice, White Rice, Rice Krispies, Uncle Ben's Rice, Rice Olumo and any Unspecified Rice.
(3) Includes: New/Old Grain Maize, Corn on the Cob, Whole Peg Corn, Corn wrap (Eko, Kafe, Agidi) Kellog's Cornflakes, Creamed Corn, Corn Chips, Corn Flour, Guguru, Cooked Maize and Other Unspecified Maize.
(5) Includes: Local Cereal and Bakery products (processed and unprocessed), biscuits, bread and teases cereal.
(6) Includes: Beef (fresh/dried), Beef Suya, Mutton, Pork, Bush Meat (fresh and dried), corn beef (local/imported), ham, sausages, steaks, goat, donkey, sheep and dog.
(7) Includes: Snails, Fish (fresh/dried), shrimps (red/white), stock fish (dried), periwinkle and other seafood.
(8) Includes: Fowl, Guinea Fowl, Duck, turkey dressed (turkey, chicken and Duck), Pigeon.
(9) Includes: Milk and milk products, Eggs, Butter, Omelette.
(10) Includes: Oranges, Grapefruits, Grapes, Banana, Pawpaw, Pineapples, Mangoes, Pear (Avocado), Pear (Ube local), Palm fruits, Guava.
(13) Includes: Fresh and canned tomatoes, native whole, tomato heinz (ketchup), H.P. sauce.
(14) Includes: Pepper (Atarodo), pepper (tatase), pepper (dried), papper (ground) and aligator pepper.
(15) Includes: Yam-tuber, water yam, yam flour (elubo), yam preparation (amala), fried yam, cooked yam, pounded yam.
(16) Includes: Cassava (garri), cassava (red), cassava (tubes), cassava (akpu), cassava (starch).
(17) Includes: Beans (white), beans (brown), beans wrap (moin-moin), beans balls (akara), locust beans and cooked beans.
(18) Includes: Melon seed (shelled), melon seed (unshelled).
(19) Includes: Spring and bulb onions.
(20) Includes: Kolanuts (red), kolanuts (white), shelled and unshelled groundnut, cooked and uncooked walnuts, coconuts, kulikuli, palmnuts, bitter kola, bambaran, kosai.

Table 3.2 (cont.) State Price Deflators (Lagos Urban=100)

STATE	Sugar	Palm oil	Veg. oil	Sugar cane	Fats/Oil	Spices	Beverage	Drinks	Tobacco	Accomod.	Fuel	Hhld. items	Person. care	Educat.	Services	Medic.	Clothing	Transp	Monet. transac.
	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
Anambra	102.52	77.14	83.25	102.52	64.64	118.04	90.99	77.27	86.52	104.39	135.85	100.12	100.12	75.45	104.30	68.71	100.70	117.29	100.58
Bauchi	134.45	90.23	84.97	134.45	73.94	110.28	96.13	91.55	88.82	116.41	188.68	110.29	110.29	80.00	116.30	112.59	84.96	103.73	110.79
Bendel	96.64	86.06	90.08	96.64	74.00	91.26	93.27	86.19	91.60	132.19	43.64	126.36	126.36	83.82	132.06	109.36	114.06	140.77	126.93
Benue	107.85	84.68	78.74	107.85	71.84	45.63	98.20	93.39	90.30	109.13	00.00	105.39	105.39	98.00	109.03	97.10	110.91	113.43	105.87
Borno	107.87	92.42	78.71	107.87	100.08	96.12	92.10	91.60	93.04	113.63	124.53	111.76	111.76	100.00	113.52	89.68	118.00	108.30	112.27
Cr. River	104.20	81.37	81.94	104.20	114.57	77.76	95.42	98.28	94.39	100.17	83.70	99.03	99.03	88.09	100.08	103.88	81.82	125.47	99.47
Gongola	104.04	99.45	79.85	104.04	99.47	147.09	94.07	95.02	95.33	94.35	99.06	92.50	92.50	71.67	94.26	96.78	106.98	104.13	92.92
Imo	100.74	83.10	118.35	100.74	118.35	98.06	94.05	88.58	86.16	101.00	60.64	97.94	97.94	90.00	100.90	85.17	41.69	139.22	98.38
Kaduna	72.36	97.30	77.57	72.36	150.64	89.97	87.04	88.41	88.66	108.95	123.90	105.08	105.08	62.83	108.85	93.55	92.04	97.51	105.56
Kano	86.07	96.49	86.98	86.07	101.24	57.20	90.12	90.20	83.55	90.49	46.17	90.01	90.01	84.44	90.40	87.42	90.47	90.07	90.42
Kwara	83.91	111.52	102.64	83.91	107.19	106.80	92.68	86.23	102.95	120.68	102.95	115.49	115.49	73.17	120.57	103.23	96.76	114.80	116.01
Niger	104.04	99.45	78.92	104.04	99.47	169.09	94.07	95.02	95.33	139.83	99.06	130.71	130.71	71.67	139.69	97.42	120.40	134,18	131.30
Ogun	83.11	87.99	84.81	83.11	93.78	58.58	94.55	82.25	89.30	101.08	41.51	96.00	96.00	60.80	100.99	97.42	73.94	105.57	96.43
Ondo	96.68	78.40	83.01	96.68	66.30	108.01	93.09	95.97	94.94	92.08	64.15	91.26	91.26	69.33	91.99	95.50	44.83	107.70	91.67
Oyo	91.83	80.82	104.29	91.83	77.51	104.05	87.36	90.26	104.69	80.99	62.64	78.83	78.83	55.56	80.91	90.65	84.18	81.00	79.19
Plateau	95.07	102.46	87.01	95.07	107.32	68.61	87.01	94.12	98.48	106.95	23.60	103.06	103.06	67.50	106.84	110.33	41.69	147.58	103.53
Rivers	93.07	89.37	100.69	93.24	99.33	97.09	96.42	100.28	93.14	87.17	52.51	88.22	88.22	76.67	87.09	84.84	115.64	108.22	87.51
Sokoto	99.20	97.74	61.03	99.20	103.43	208.74	97.76	94.18	95.44	108.27	118.35	106.25	106.25	91.27	108.16	113.56	103.83	85.92	106.72

Note:
(21) Includes: Sugar lumps, St Louis, Tete & Lyle, Niger cube, glucose.
(22) Includes: Palm oil.
(23) Includes: Ground nut oil, coconut oil, melon seed oil, corn oil, vegetable oil, cooken.
(24) Includes: Sugar cane fresh stems.
(25) Includes: Shea butter lump, margarine (local), butter (local), sunnyvale, anchor butter, wheelbarrow butter, blueband margarine, planta margarine, cheese.
(26) Includes: Vegetable soup, mushroom soup, tomato soup, white pepper, thyme, curie, black pepper, maggie cube, salt, local maggi/iru/dawadawa.
(27) Includes: Ovaltine, bournvita, pronto, milo, coffee/nescafé, tea (Lipton and Kettle), milk, chocolate and horlicks.
(28) Includes: All alcoholic drinks and beverages, beers, stout and carbonated drinks.
(29) Includes: Tobacco leave (imported), tobacco (local), ground (local), snuff (imported), cigarettes (all brands), cigars, tobacco flakes, moore and pipe.
(30) Includes: Rent, conservancy, water, cement, corrugated iron sheets, asbestos sheets, wood, nails, sand, blocks, paints and window panels.
(31) Includes: Gas, electricity, firewood, charcoal, kerosine, matches, candles, lighting materials, battery, gilobe, fuel and socket.
(32) Includes: Furniture, fixtures, mattresses, chairs and cupboards, pillows, cutlery, crockery, glassware, utensils, pots and buckets.
(33) Includes: Soap, toothpaste, comb, mirror, hair drier, skin lotions, toilet rolls, after shave, etc.
(34) Includes: Printed material, educational supplies.
(35) Includes: General services, servants wages, shoe repairs, tailoring services, newspaper and magazines, stationery.
(36) Includes: Medical care and health expenses, ointments and liniments, oils, salts/worm expellers, antibiotics, pain/cold relieve medications, vitamins, cough syrup, anti malaria, medical equipment, medical fees and other medications.
(37) Includes: Women's and men's apparels, scarfs, rain coats, shoes, hats and caps, belts and ties.
(38) Includes: Transportation (cars), motorcycles, bicycles, car/bike maintenance, personal licenses and transport fees and auto insurance
(39) Includes: Recreation, entertainment, cultural exercise, maintenance of relatives, gifts to relatives and friends, alms, donations, dowry, tax, fines, hire purchase payment, savings, esusu, other savings and loans given.

Source: Federal Office of Statistics, Nigeria.

Table A3.3 Regional Cost of Living Index by State (1985/86 to 1992/93) 1/

	1985/86		1992/93	
STATE	**Urban**	**Rural**	**Urban**	**Rural**
Lagos Urban	100.00	----	609.10	----
Anambra	72.60	74.8	324.88	308.47
Bauchi	87.52	90.9	471.73	445.41
Bendel	84.50	88.3	440.92	422.96
Benue	97.60	94.8	560.71	484.43
Borno	91.00	82.3	493.40	373.97
Cross River	89.60	91.2	478.64	448.70
Gongola	79.70	86.2	315.05	387.90
Imo	71.70	76.6	309.17	314.06
Kaduna	80.50	82.3	385.92	362.12
Kano	106.40	87.9	680.96	421.92
Kwara	81.70	79.5	397.88	341.85
Lagos	-----	100.5	-----	543.80
Niger	97.60	90.9	566.08	463.59
Ogun	82.10	80.4	410.50	361.80
Ondo	81.00	78.8	375.43	330.96
Oyo	74.00	73.9	328.71	296.33
Plateau	89.70	80.6	484.38	346.58
Rivers	113.50	105.1	783.15	590.56
Sokoto	91.50	89.8	495.84	413.08

Source: Federal Office of Statistics, Nigeria.

12/ The CPIs were constructed using the expenditure basket of the bottom 20 percent of the population. This was then applied to the 1985 regional price indices, so that we maintain the same regional price differences in the two time periods.

Table A3.4: Population Estimates* and Extrapolation Factors by State and Region

	POPULATION (in million)			ESTIMATES			COEFFICIENTS FOR EXTRAPOLATION			
	1985/86			1992/93			(1985/86)		(1992/93)	
STATE	Rural	Urban	All	Rural	Urban	All	Urban	Rural	Urban	Rural
Anambra	2.90	2.50	5.40	3.53	3.09	6.62	2233.49	3719.94	6693.41	2814.26
Bauchi	2.70	1.00	3.70	3.04	1.24	4.28	415.99	3881.96	867.82	1866.73
Bendel	1.90	1.80	3.70	2.26	2.11	4.37	1315.05	2170.05	3127.41	2282.73
Benue	2.20	1.30	3.50	2.39	1.38	3.77	873.18	1583.74	2157.34	2720.53
Borno	3.20	1.20	4.40	3.65	1.45	5.10	1121.36	4658.63	1519.58	2817.27
Cross River	3.40	1.90	5.30	3.61	2.08	5.69	1854.81	4069.68	642.53	1643.90
Gongola	2.50	1.40	3.90	2.46	1.49	3.95	736.12	2074.25	3356.48	2758.54
Imo	2.90	2.50	5.40	3.60	3.25	6.85	2575.10	3562.97	3918.73	3100.45
Kaduna	4.80	1.80	6.60	4.71	3.13	7.84	821.23	3804.96	2101.18	1561.98
Kano	6.30	2.30	8.60	7.55	2.93	10.48	1322.88	3246.11	2719.91	4138.24
Kwara	1.70	1.00	2.70	2.22	1.09	3.31	587.36	1358.22	1328.88	1342.94
Lagos	1.20	1.10	2.30	2.24	2.17	4.41	1040.03	1402.63	1855.97	3883.00
Niger	1.30	0.70	2.00	1.86	0.74	2.60	696.16	1219.39	801.59	1119.31
Ogun	1.20	1.20	2.40	1.40	1.17	2.57	1492.73	1832.05	2065.53	1711.02
Ondo	2.20	1.10	3.30	2.47	2.37	4.84	1394.99	3151.99	4726.46	3231.29
Oyo	4.20	3.50	7.70	4.53	4.25	8.78	3796.32	5482.98	4692.11	5696.61
Plateau	1.90	1.20	3.10	2.71	2.29	5.00	412.75	1838.68	3456.35	2552.52
Rivers	1.30	1.30	2.60	1.66	1.31	2.97	2016.48	1316.06	2064.68	1157.28
Sokoto	5.10	1.50	6.60	5.33	2.33	7.66	4780.88	4711.38	3198.60	6948.98
FCT	0.00	0.00	0.00	0.59	0.37	0.93	000.00	000.00	909.09	405.80
ALL	**52.90**	**30.3**	**83.2**	**61.7**	**40.2**	**101.9**				

Note: This paper uses the rural/urban breakdown of population estimates released by Federal Ministry of Agriculture, Water resources and rural development, Nigeria, in " Rural water supply and sanitation: sector strategy and action plan", July 1992. The latter is the only document which gives the national population for 1990 and 2005 with rural and urban spilt which is necessary for a detailed poverty profile. The current paper uses the population estimates of 83.2 million for 1985 and 101.9 million for 1992 from the World Bank Economic and Social Database (BESD).

Source: World Bank Staff Estimates.

Table A3.5: COMPOSITE CONSUMER PRICE INDICES (1985/86 to 1992/93)

	YEAR	COMPOSITE CPI
	1985	100.0
	1986	105.1
	1987	116.1
	1988	181.2
	1989	272.7
	1990	293.8
	1991	330.9
	1992 January	377.8
	1992 February	385.9
	1992 March	406.8
S	1992 April	437.0
U	1992 May	457.4
R	1992 June	499.3
V	1992 July	518.6
E	1992 August	531.5
Y	1992 September	528.9
	1992 October	526.6
P	1992 November	530.8
E	1992 December	540.3
R	1993 January	566.2
I	1993 February	596.1
O	1993 March	634.0
D	1993 April	677.0
	1993 May	739.2

Source: Federal Office of Statistics, Nigeria.

Table A3.6: Unemployment Rates in Nigeria (1983-1993)

	1983	1985	1986	1987	1988	1989	1990	1991	1992	1993*
A. National Unemploy. rate (in percent)	4.3	5.2	5.8	6.1	5.3	4.3	3.4	3.6	3.5	4.0
Rural Unemployment rate (in percent)	3.0	6.1	4.3	5.5	4.3	3.4	2.9	3.5	3.0	4.0
Urban Unemployment rate (in percent)	7.3	9.7	9.7	10.8	10.6	8.6	5.7	3.4	4.8	4.2
B. Male Urban Unemployment										
15-19	28.6	30.1	25.1	23.9	26.9	26.5	23.0	--	--	
20-24	39.0	37.2	38.5	43.3	40.0	35.7	41.2	--	--	
25-44	23.2	26.5	28.7	27.5	29.3	31.7	26.5	--	--	
45-54	3.5	3.5	3.5	3.4	3.2	4.0	7.2	--	--	
55-59	5.7	6.7	2.7	1.9	3.0	2.3	1.6	--	--	
C. Urban Unemployment by Education Level(Both Sexes)										
None	12.8	12.5	12.8	13.9	11.8	12.3	18.7	16.2	11.5	
Primary	20.1	16.1	11.0	15.4	14.7	20.1	15.2	11.4	12.2	
Secondary Post	61.9	65.2	70.5	64.4	66.0	62.7	59.2	66.6	68.0	
Secondary	5.4	6.3	5.5	6.3	7.9	5.0	6.7	5.8	8.3	
D. Unemployment by Geographical Areas										
Urban	10.0	10.3	8.1							
North	6.6	6.7	5.4							
Middle	8.3	7.8	6.8							
South	12.4	13.2	10.7							
Rural	4.8	5.2	4.3							
North	1.6	2.7	2.2							
Middle	3.2	4.7	2.6							
South	7.4	6.4	6.0							

Note: * Refers to march 1993 Only.

Source: Federal Office of Statistics (FOS):(i) Labor Force Survey (For Aggregate Unemployment rates and distribution); (ii) Food Security: For the Geographical Distribution of Unemployment.

APPENDIX 4: Previous Research on Poverty in Nigeria

Table A4.1 Summary of Past Studies on Poverty in Nigeria

Source	Date	Urban Poverty Line (1)	Rural Poverty Line (1)	Population in Poverty	% of Urban Poor	% of Rural Poor	Comments: Level and Type of analysis. Per Capita, HH=Household Level, BN= Basic Needs approach)
Bevan et al, 1988	1952/53	---	---	---	---	17/58	20/40 percent of the distribution of 1952/53 is used as poverty lines.
ILO, 1982	1978	2303.60	1240.40	38	33	40	HH, BN (Food Only)
Stewart, 1985	1978	4323.68	---	43.7	50	40	HH, BN, Estimates for Lagos/Kano Only, No rural line. Estimates 60% Food.
ILO-Mission, 1982	1979	2557.80	---	---	---	---	HH, Food only as BN, for Lagos/Kano only.
W.B Mission	1980	2085.71	---	---	---	---	HH, Food only as BN, and analysis for Lagos/Kano only.
Ade- Lawal	1986	1428.57	---	---	---	---	HH, Uses Minimum Wage as proxy, but no values percentage for urban or rural poverty.
Oyejide	1988	1318.68	1054.95	---	---	---	HH, Food only as BN, but no percentages for rural and urban poverty.
Kogbudoku	1988	1648.35	--	---	---	---	BN, no estimates for urban and rural poverty
Food Security	1989	1970.80	1313.87	17.9	22.2	17.2	HH, Food Poverty.
UNICEF	1992	4000.00--	---	50	---	---	Focal LGAs Only, and Minimum Wage used as proxy.

Note: (1) Past Poverty Lines in 1985 Naira (Composite CPI), per Household per annum.

APPENDIX 5: The Estimation of Household Accounts from the National Consumer Survey

I.1 The Household Economy

At the macro level, the nation can be subdivided into mutually exclusive and exhaustive set of institutions or groups of transaction agents, chosen on the basis of their economic functions, legal status or other characteristics. Each institution can be viewed as an economic system, which interacts with other institutions both within and outside of the national economy and its boundaries. Taken to a limit, each household can be viewed as a minuscule economy engaging in the economic activities of production, consumption, and accumulation to a great extent and interacting with the rest of the nation, through its trade in commodities and factor services and its accumulation of assets and liabilities, both real and financial. If a household does not engage in production, then all of its income must come from outside in the form of factor income or labor supply or non-factor transfers. Similarly, its expenditure out of incomes received would be on goods and services produced outside of the household.

On the other hand, if it engages in production of marketed goods and services then the incomes generated inside the household would be derived from the disposal of the product to users outside. Production on own account will be internal to the household, in which case no actual transactions will take place between members, and the implicit own account income or expenditure that arise has to be imputed. Through out this document, that income or expenditure has been called home consumption.

In an entirely analogous way to the standard accounting constructs for the nation as a whole, it is conceptually feasible, using survey information to assemble a set of economic accounts at the household level. The discipline one derives from an accounting framework helps in several key respects with the problems encountered in choosing the appropriate income and expenditure aggregates. But the accounting framework does not and cannot alleviate all the conceptual difficulties encountered in their constructs, some of which are beyond immediate resolution and are still the subject of debate.

I.2 Issues in Estimating Household Income and Expenditure Aggregates

The core of any set of estimates of income and expenditure however, is represented by the observed transactions in goods and services arising in the market economy. The market valuation is often subject to a range of distortions (like taxes, duties and transportation) whose incidence could materially affect the comparability of the estimates across households or household groups. Nevertheless, market prices tend to be the only feasible options in computing estimates based on market output. A significant number of both conceptual and empirical issues are encountered during the computations and are highlighted below.

The first relates to the issues of ***imputation.*** The first and perhaps most tractable group of imputations relate to consumption of ***non-market*** goods and corresponding payment of income

in kind. This is not only restricted to farm produce although in practice it accounts for most of the imputed output in this category. Due to ***consumption of own production*** in the case of the present analysis, the valuation of each product was obtained from the survey response by each individual household.

A second category of imputations relate to those non-marketed goods and services for which no direct valuation can be obtained from a given household survey, but for which a valuation is critical for comparability with national accounting practices. A classic example of such imputations relate to imputed rent or owner-occupied dwelling. In the present survey, an attempt was made to elicit the valuation from respondents which unfortunately is often very unreliable.

The distinction between current and capital items in the complete household accounting scheme, is crucial to the determination of the income and expenditure aggregates. A classic debate surrounds the treatment of consumer durables. National accounts conventionally have counted expenditure on consumer durables as part of current consumption, completely written off at the time of purchase. This however, is difficult to justify, in view of the services that consumer durables provide over time. The 1985 expenditure survey did not collect any information on consumer durable. In 1993 this information was collected with about 200 households or about 2 percent of the sample reporting some expenditure on durable items. Because expenditure on durables are a very insignificant part of total expenditures at the aggregate level, they were included in total expenditure.

I.3 The Choice of Current Account Aggregates

The choice of aggregates reflects some of the conceptual issues raised above. On the income side, the distinction between factor and non-factor income is made explicit. The factor incomes are distinguished according to factor remuneration, thus giving income from employment (returns from labor supply), rental income (returns from the ownership and supply of capital), and self-employment income (a joint return to labor and capital supplied by the household in which the separate contributions of labor and capital cannot be easily distinguished). The remaining income aggregates cover non-factor incomes and various miscellaneous incomes the majority of which are not well defined. Remittances received by the household as current transfers from other households are separately identified as a category. Other incomes which include non-factor incomes received by the household as current transfers from the government, income from insurance, pension schemes and others form a category called other income.

On the expenditure side, the main conceptual distinction is between monetary transactions and imputations. The monetary transactions are subdivided according to the type of expenditure, thus giving food expenditure (cash expenditure and home consumption) and non-food expenditures. Information on the main items of expenditure are collected by the surveys at a highly dis-aggregated level. This, plus the fact that there is less incentive to understate because of fear of taxation, implied to us that expenditure estimates would be more accurate and less subject to bias than the income estimates.

In general an assessment of the reliability of aggregate measures of income and expenditure derived from a household survey is far from being a straight forward exercise. Ideally, it should rely on the existence of reliable estimates of the aggregates, where one can be sure that the definitions of the alternatives are consistent. This paper suspects that the under-coverage of non-food expenditure in 1992/93 and the under-representation or coverage of non-formal economy may also be responsible for the conclusions. In Nigeria, the most common source is the National Accounts. Estimates used in the present analysis, have been found to be fairly close to National account estimates. Whether the national accounts are to be trusted is an issue beyond the scope of this analysis. However, another method which is used in most instances is the comparison of the aggregate estimates of total income and total expenditure, that is to consider the plausibility of the implied estimates of savings.

The experience from a vast majority of household surveys, including the surveys in this analysis, suggest that estimates of savings calculated by subtracting total expenditure from total income are sharply and implausibly negative. Our results show that in 1985 the average household in Nigeria spend ₦592.81 on an average income of ₦458.83 implying a negative savings of 29.2 percent which is implausible. In 1993 the average expenditure rose to about ₦744.10 and per capita income rose to ₦541.29 still showing a dis-savings rate of 37.5%. Clearly, although someindividual households may dis-save in a particular year, it is simply not credible that the household sector as a whole is dis-saving to the extent implied by the two surveys. One can only conclude that there is a significant understatement of incomes and/or an overstatement of expenditures. This definitely needs further research.

Table A5.1: Aggregates of the Household Current Account

(a)	Income sources
	Income from Employment
	Household Farm Income
	Non Farm Income
	Income from Rent
	Remittances Received
	Other Income
	Total Income
(b)	Expenditure sources
	Consumer's Expenditure on Food: Cash Expenditure
	Consumer's Expenditure on Food: Home Production
	Consumer's Expenditure on Non Food: Home Production
	Non Food Expenditures
	Remittances Paid Out
	Monetary Transactions (savings, Esusu)
	Total Expenditure

Source: NCS, 1985/86 and 1992/93.

I.4 Practical Issues: Zero Values, Missing Values and Outliers

The discussions so far, have focused on the theoretical procedures and assumptions in calculating aggregates in the household accounts. However, it needs to be supplemented by a brief discussion of the inevitable and complicated problems which will arise in practice. Two of these practical issues are endemic and thus their treatment need to be made a central part of the calculation procedure. These are:

- the problem that instances of missing values will occur, in which respondents are either unable or unwilling to provide an answer to a question; and

- the fact that the responses provided may contain outliers which need to be detected and treated or replaced, i.e. values which deviate so much from the other values as to raise suspicion that they are erroneous.

The difficulty in identifying missing values is that they are only a small subset of instances of non-response to a question. Apparent non-response will also occur in questions which have been identified as not applicable and hence skipped. In other words, the response is not missing, but zero. There is need to distinguish between these two types of missing values as their meaning and implications are quite different. For the zero values, this may be achieved very easily by following the skip pattern in the questionnaire, to identify individuals to whom the question was not asked. In such cases the response may be safely set to zero. This procedure does not identify all missing values. Having used the skip pattern, the remaining missing values are genuine missing values. The extent of the problem will depend on the number of missing values. In a consumption survey, it is even more difficult to identify missing values. If a value is missing, it may be the household did not consume the item during the reference period or the household failed to remember or even report the expenditure on the item. In our analysis, we have assumed that expenditures or incomes not reported for any item implies that the household did not consume the item during the reference period. The values are set to zero.

The second problem, the identification of outliers is controversial and important. If an outlier is not identified and consequently treated, the impact could be very serious. However, extreme values may arise for genuine reasons as well as due to errors, and it is important that these cases are distinguished as far as possible. The procedure for identifying an outlier depends on the statistical process believed to be generating the variable. If the variable is believed to be normally, independently, identically distributed, then a simple criterion may be that variable values are outliers if they are more than a certain number of standard deviations from the mean value. In our analysis we have applied a treatment for values lying more than 5 standard deviations from the mean, where both the mean and the standard deviation are both calculated only over non-zero values.

In any analysis of survey data certain assumptions and decisions have to be made. One important decision is whether to treat or not to treat data for outliers. In the analysis of the National Consumer Survey (NCS) and particularly the 1992 survey, this decision had to be made for the following reasons. Looking at Table A5.3 below, it is clear that the tenth decile with a mean per capita expenditure of ₦4742.91 is almost three times the average per capita expenditures for the ninth decile . The proportion of per capita food expenditures to total expenditures was 81 percent compared to 66.4 percent for the ninth decile. The proportion of food to total expenditure incurred by the tenth decile was also found to be unrealistic. It was decided to treat for outliers at the one level only, the annualized variable level.

Tables A5.2 and A5.3 give the mean per capita expenditure by total and disaggregated level by each decile for 1985 and 1992 respectively.

Table A5.2: Per Capita Expenditure by Decile (Untreated data:1985/86)

DECILE	Per Capita Expenditure		Food Expenditure		Non-Food Expenditure	
	Estimated Population	Mean	Estimated Population	Mean	Estimated Population	Mean
1st five percent	4051377.00	32.95	4051377.00	14.91	4051377.00	18.04
2nd five percent	4227092.00	65.23	4227092.00	28.61	4227092.00	36.62
2nd Decile	8857027.00	112.36	8857027.00	43.79	8857027.00	68.57
3rd Decile	8392167.00	179.85	8392167.00	66.30	8392167.00	113.55
4th Decile	8271549.00	266.85	8271549.00	85.08	8271549.00	181.77
5th Decile	8622862.00	374.18	8622862.00	103.44	8622862.00	270.74
6th Decile	8629648.00	515.44	8629648.00	125.44	8629648.00	390.00
7th Decile	8651754.00	713.52	8651754.00	145.30	8651754.00	568.23
8th Decile	9167076.00	1058.33	9167076.00	222.36	9167076.00	835.98
9th Decile	8792658.00	1778.06	8792658.00	333.59	8792658.00	1444.47
10th Decile	8831902.00	9169.98	8831902.00	1700.12	8831902.00	7469.86
ALL	**86495112.0**	**1448.55**	**86495112.0**	**289.58**	**86495112.0**	**1158.97**

Table A5.3: Per Capita Expenditure by Deciles (Untreated Data:1992/93)

DECILE	Per Capita Expenditure		Food Expenditure		Non-Food Expenditure	
	Estimated Population	Mean	Estimated Population	Mean	Estimated Population	Mean
1st 5%	5149460	70.35	5149460	53.97	5149460	16.38
2nd 5%	5097324	140.75	5097324	110.26	5097324	30.49
2nd Decile	10168250	212.82	10168250	164.59	10168250	48.23
3rd Decile	10234385	307.44	10234385	240.66	10234385	66.78
4th Decile	10198564	409.87	10198564	313.08	10198564	96.80
5th Decile	10207626	514.90	10207626	379.84	10207626	135.06
6th Decile	10197552	653.21	10197552	475.46	10197552	177.75
7th Decile	10207761	842.84	10207761	588.16	10207761	254.68
8th Decile	10198719	1125.93	10198719	746.60	10198719	379.33
9th Decile	10194882	1581.04	10194882	1049.85	10194882	531.19
10th Decile	10163790	4742.91	10163790	3834.31	10163790	908.60
ALL	**1.0202E8**	**1047.84**	**1.0202E8**	**786.01**	**1.0202E8**	**261.82**

Treatment at sub-aggregate levels have had the effect that in more than one instance, the value of an aggregate may be inconsistent with the values of the sub-aggregates at an annualized value. To avoid these inconsistencies, outlier treatment was only carried out at the individual item and per capita level. As Table A5.3 above shows, the impact has been on the tenth decile and on the aggregate, mean per capita expenditures have been reduced from ₦1047.84 to ₦792.64, an insignificant reduction of 7.6 percent. The treatment has had no effect on the head count and other measures of poverty as the impact has been on the expenditures of the non poor only. Furthermore, the presence of outliers was in non food expenditures only. Without treatment, non food as a proportion of total expenditure is 26.4 percent national. With treatment the value of non-food is 24.9 percent of total expenditure.

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