

**AERC-UNECA DISSEMINATION CONFERENCE ON POVERTY, INCOME
DISTRIBUTION AND LABOR MARKET IN SUB-SAHARAN AFRICA: PHASE II**

A DYNAMIC POVERTY PROFILE FOR CAMEROON

By

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ABSTRACT

ABSTRACT

The purpose of this paper is to construct a dynamic poverty profile for Cameroon covering the 1996-2001 period, using poverty profile standard construction methods, and data drawn from the two Cameroonian Household Surveys ECAM I and ECAM II, respectively conducted in 1996 and 2001 by the National Institute of Statistics (NIS). To that end, poverty has been assessed using FGT-class poverty indexes (i.e. the poverty ratio, the poverty gap index and the severity of poverty index), as well as stochastic dominance methods in order to gauge change in poverty over the study period.

In addition, the decomposition of FGT poverty indexes was carried out to highlight the main factors affecting poverty. The levels of poverty were estimated using household expenditures per adult equivalent for the years 1996 and 2001, and the official poverty line calculated by the NIS. Evaluations of poverty were therefore made to capture the degree of hardship experienced by both rural and urban Cameroonians. Households were also classified by socio-economic characteristics and their poverty indicators were calculated to render the profile more comprehensive, and to identify the attributes characterizing poor households. Income inequality was captured with the Gini index and two generalized entropy measures. In general, the results of the study show that while poverty declined thanks to economic recovery to some extent, especially in the urban areas, inequality on the other hand increased between 1996 and 2001. However, the urban areas record a reduction in inequality whereas it is the opposite in the rural areas. Finally, these results are used to make policy recommendations aiming at poverty relief in Cameroon.

1. Introduction

Poverty reduction may be considered as the ultimate goal of economic policy. Thus, in recent years, poverty relief and efforts to reduce it have been the corner stone of the Cameroon's economic policy¹. However, the identification of the poor in the country toward which government efforts are directed is not an easy matter. The profile of poverty² constitutes one of the methods with which such efforts could be implemented more efficiently by targeting government actions toward the regions or socio-economic groups encompassing a disproportionate number of poor people. In this regard, poverty profiles play an important role in the understanding of poverty and the formulation poverty policies³.

Up until recently, there was very little dependable information on poverty in Cameroon. This situation has changed with the availability of the two Cameroonian household surveys (ECAM I and ECAM II) realized by the National Institute of Statistics respectively in 1996 and 2001, and which gathered a range of diverse data on the living conditions of Cameroon's households.

The present study aims at constructing a poverty profile for Cameroon by using ECAM I and ECAM II survey results in order to characterize the level, nature, and evolution of poverty in Cameroon over the 1996-2001 period. This analysis proposes to provide a dynamic poverty profile over a relatively not so recent period, but it could be updated by using future data.

The study revolves around six sections. Section 2 presents the macroeconomic context of the study, while Section 3 is devoted to methodology and the major characteristics of the data used in the study. In Section 4, we present the balance sheet of developments in monetary and non monetary poverty. The analysis of poverty in terms of stochastic dominance allows to determine the robustness of the results based on the comparison of FGT-poverty indexes (Foster, Greer, and Thorbecke, 1984). Section 5 analyzes total expenditure inequalities and their evolution by using the Gini index, entropy measures, and stochastic dominance. Lastly, Section 6 makes a few policy recommendations on the combat against poverty.

2. Brief Review of Development in Cameroon's Economy

Cameroon is a Central African country extending over an area of 475 650 Km² with a population estimated at 15 292 000 inhabitants in 2001. Discovered by the Portuguese in the

¹ In April 2003, Cameroon adopted a final Poverty Reduction Strategy Paper (PRSP) covering the 2003-2015 period. The PRSP was prepared through intensive consultations with the poor; civil society, the private sector and development partners. The PRSP present the government's view and the priority actions programmed to combat poverty in accordance with the Millennium Development Goals established for 2015.

² Poverty profiles are analytical tools which summarize information related to poverty, and aim at answering the following questions: who are the poor? Where do they live? What are the main characteristics of their poverty? Why are they poor? A poverty profile may be considered simply as a particular case in poverty comparisons showing how the latter varies by according to subgroups of a society: socio-economic group, employment sector, residence area. A poverty profile may be very useful, notably to show the incidence of structural changes on overall poverty.

³ The poverty map, which is part of the poverty profile and highlights the concentration of different types of poverty throughout the country, will not be addressed in this study.

middle of the 15th century, Cameroon was colonized by the Germans, and then divided after World War II into eastern Cameroon governed by France, and western Cameroon which was put under British rule. The country gained independence on January 1st, 1960 for francophone Cameroon and in 1961 for Anglophone Cameroon under the British mandate. Cameroon became an independent Stat in 1960, then a Federation in 1961, a United Republic in 1972, and has now been the Republic of Cameroon since 1983.

From independence up to 1985, Cameroon displayed sound economic health. In fact, during the 1961-1975 and 1976-1984/85 periods, Cameroon's economy witnessed an average annual economic growth of 15% in nominal terms. This positive evolution was driven by the development of the agricultural sector⁴ and the exploitation of the oil resources of the country. Between 1978/79 and 1984/85, GDP was growing at a nearly exponential rate of about 17% on average each year⁵, fuelled by oil exports⁶. The rise in budgetary and off-budget resources generated by the oil sector helped increase the investment rate and maintain a tolerable level of external indebtedness for the country.

Concurrently, the proportional expansion of public expenditures induced by the rise in oil revenues manifested itself by a new, and increasingly stronger economic dependence on the oil sector, owing to a less than proportional growth in non-oil sector exports⁷, and because of the increasing poor performance of traditional agricultural exports. This phenomenon, known as the "Dutch disease" combined with the continued accumulation of the equally poor results of heavily subsidized public enterprises to bring about worsening public finance imbalances⁸.

Starting in fiscal year 1985/86 however, Cameroon found itself facing an extremely unfavourable external evolution, following the persistent and concomitant fall in the US dollar, and in the world prices of its main export products such as oil, cocoa, coffee, and cotton. To this should be added poor macroeconomic management, and, despite a sustained rate of growth and apparent economic health, Cameroon suddenly fell into an economic crisis in late 1986, which was to last for almost a decade.

Confronted with this situation and given the extent of deterioration in the terms of trade which were reducing tax revenues, the government put in place in 1987 an autonomous adjustment program without assistance from foreign institutions⁹. This program turned out to be incapable of stemming the economic crisis.

From 1988, Cameroon accepted the support of international organizations (World Bank and IMF), structural adjustment programs aimed at stabilizing the situation and hastening the recovery of economic growth. Among the number of measures taken in the context of this program and those intended to promote a market economy for the country, we may mention

⁴ It is during this period in effect, that significant investment are realized in the agricultural sector (creation agro-industries and development companies) in accordance with the 3rd and 4th Five-year Plans of economic, social and cultural development.

⁵ PNUD (1993): Rapport sur le Developpement Humain au Cameroun, Yaoundé, 1993

⁶ In 1984/85, petroleum represented 25.8% of nominal GDP (USAID-Cameroon, 1989).

⁷ 3% on average during the period.

⁸ It is estimated that 150 billion CFAF worth of subsidies were disbursed to public enterprises in 1984/85 (FMI, 1988).

⁹ This autonomous program basically aimed to reduce the government's life style and relieve the weight of the public sector in the economy through the reduction of subsidies. The search of budgetary balance also led to the reduction of certain benefits paid to government employees and to the freeze of the financial effects of promoting these employees.

the following: spending cuts, enhancing tax revenue collection, civil service reform, trade regime reform, reform and privatisation of public enterprises and parastatals and banking sector restructuring.

The implementation of these reforms was slow and inadequate for stemming increasing economic deterioration, except perhaps for trade liberalization measures which were carried through. Elsewhere, the persistence of problems increasingly worsened the situation, in such areas as the balance of trade and budgetary position where the latter recorded a deficit of 50 billion CFAF between 1989 and 1990. Consumption per head fell 40% between 1985/86 and 1992/93. The outstanding foreign debt, which was less than one third of GDP in 1984/85 rose to more than one fourth of GDP in 1992/93. The rate of capital expenditure went from 27% to 13% of GDP during the same period. Further public finance imbalances were characterized by cash flow problems which forced the government to initiate drastic salary cuts in the Civil Services¹⁰ in January and November 1993¹¹. The liberalization of the economy in general and of the main agricultural industries in particular drove the rural sector into major problems. Recruitment freezes and redundancies in the Civil Service led a large number of unprepared government employees sudden unemployment, whose rate was further increased by a vast privatisation restructuring and liquidation of most public enterprises and parastatals following the gradual disengagement of the State from the productive sector of the economy¹². It is estimated on the other hand that between 1984 and 1991, the private sector itself laid off nearly 21% of workers, thus leading to the reduction of employment in the formal sector of the economy and the development of job precariousness.

Aware of the failure of “internal adjustment” and the efforts to correct price distortions through export subsidies and import taxes, Cameroon and the other Zone Franc countries decided in January 1994 to devalue the CFAF franc by 50% to establish its parity at 100 CFA francs for 1 French franc.

After devaluation, the government adopted a stabilization program and structural reforms supported by the IMF and World Bank. This program aimed to maintain the inflation rate at less than 5% starting in 1995, to increase the annual economic growth rate to 5% from than same year, based on expectations of the competitiveness rural and urban sector’ exports which could yield adequate primary and overall budgetary surplus likely to increase public savings to finance high priority public and social expenditures.

In August 1997, after the satisfactory implementation of a reference program monitored by the IMF during the 1996/97 fiscal year, the government put in place another economic and financial program supported by IMF in the context of the Enhanced Structural Adjustment Facility (ESAF). This program aimed at consolidating the reorganization of the public finance situation and to establish the conditions for sustained economic growth and a concrete increase in the level of living of population.

¹⁰ Following these two salary cuts in January and November 1993, high salaries are estimated to have been of 60% over all.

¹¹ See National Institute of Statistics (2002)

¹² The vast civil service deflation program was accompanied by a reinsertion program through the creation of the National Employment Fund (NEF) in the Social Dimension of Adjustment (SDA). At the outset, the NEF’s mission was to provide insertion assistance to those dismissed from the Civil Service and the formal private sector. From the mid 90’s onward, it has progressively become the principal public agency for the promotion of employment in the country.

These policy measures, combined with the CFAF devaluation led to the recovery of the country's economy after a decade of economic depression. Significant improvements were in effect recorded, first in the export sector and then in public finance. From 1997, real GDP rose at an average annual growth rate of 4.5%, inflation remaining moderate at a rate of about 2% per year (See Table 1).

Furthermore, the satisfactory execution of the ESAF gradually restored Cameroon's credibility with the international financial community. Thus the government engaged by October 2000, in the implementation of a second 3-year economic and financial program supported by the IMF in the context of a Poverty Reduction Growth Facility (PRGF) covering the Oct.2000-Sept. 2003 period. This so-called second generation program had prescribed the enhancement of achievements and the pursue of efforts to promote high economic growth. In the context of this program, public authorities succeeded in finalizing the poverty reduction strategy paper (PRSP) an interim version of which was adopted in August 2000. The PRSP finalized in 2003 allowed authorities to negotiate the enhanced HIPC initiative's completion point which was reached in April 2006.

Since the decision point was reached in October 2000 the economy has experienced overall macroeconomic stability as indicate in Table 1. As a matter of fact, non-oil economic growth has remained robust over the 2001-2005 period, pursuing the same trend as during the 1995-2000 period. Concurrently, inflation has showed down since the second half of the 1990's. Real non-oil GDP growth rate, estimated at nearly 4.9% per year since 1995 has recorded a non negligible recovery compared to the negative growth trend of the first half of the 1990's. During the 2001-2005 period growth has mainly been driven by a considerable increase in tertiary sector activities, as well as by the high growth of food crop production as cash crops. However, over the 2001-2005, real GDP growth was estimated at only 3.8% on average per year owing to a significant fall in oil production. The increase in growth was equally combined with investment growth.

3. Methodology

Obtaining an easily defensible poverty definition both on the theoretical and empirical levels, which may be tested using information provided by household surveys, requires the identification of an appropriate welfare indicator, a poverty line which separates the poor from the non poor and an index capable of capturing the different dimensions of poverty.

3.1 Household Welfare Measurement

The identification of households' wellbeing, which constitutes the first step in poverty analysis, is probably the most important and the most difficult to answer¹³, insofar as the concept of well-being is not only multidimensional, but also subjective. Welfare is multidimensional concept, for some of its component cannot be easily transformed into a simple numeraire¹⁴; it is subjective because of the usual problem concerned with interpersonal

¹³ In poverty comparisons over time, obtaining reliable information on the variable used to measure household welfare is central. Moreover as will be seen later, poverty statistics are standardized functions of welfare distribution measures.

¹⁴ The level of living of an individual or a household is a multidimensional concept which in principle encompasses each aspect of direct consumption, as well as non immediately consumable activities and services (see Sen, 1987 for more details). It is important to note that the "basket" of consumer goods is composed of many goods and services (food and non food), while on the other hand the State often provides services, notably

comparisons of utility levels. In spite of the problems, it is usually recognized that a money-metric is the best way to measure welfare at the level of the individual. (Deaton and Muelbauer 1980)

Thus, in accordance with several works on poverty, analysis in this study rests on a monetary measure of utility and welfare. Household total expenditure is used as a measure of household welfare and as a basis for ordering (or ranking) households and determining the poverty line. Expenditure is used instead of income, since the former is better reported in household consumption budget surveys. Moreover, there exists a theoretical consideration according to which expenditure reflects permanent income better. In fact, on the conceptual level, permanent income theory permits to argue that expenditures constitute a better approximation of income over the long run and of the level of living over time as compared to current income such as gathered by household surveys.

On the empirical level, it can be shown that expenditures are measured with greater accuracy than incomes especially in the case where a large part of these incomes originate from the informal sector. This observation is particularly pertinent for a developing country like Cameroon where, in the case of the ECAM I survey which is the data base used in this study, only 86% of the households surveyed declared having earned incomes higher than their expenditures! In other words, incomes were widely underestimated everywhere, which explains the exclusion of income as a measure of welfare from the present study.

The analysis that follows below considers disparities in the size and composition of households, and consequently uses expenditure per adult equivalent as a measure of welfare¹⁵. In fact to compare the standard of living of households with different compositions the statistician resorts usually to equivalence scales¹⁶, in order to obtain the value of the level of living indicator in terms of adult equivalents. Adult equivalent scales help specify the relationship between household consumption and the number of adults and children member of that household, for a given standard of living. An equivalence scale captures the scale economies realized by a household with several persons mainly through sharing the goods that can be used collectively¹⁷.

health and education, which should be considered as being as many level of living elements, even if it is difficult to quantify their contribution to direct consumption.

¹⁵ The level of living indicator retained in analysing the evolution of poverty is composed of: adjusted food and non food expenditures (clothing and footwear, household equipment, transport and communications, board and lodging services and miscellaneous services); use value of durables common to both surveys, self-consumption, and in kind transfers received.

¹⁶ Adult equivalence scales were developed due to the practical need to compare the levels of living of households whose statuses differ in terms of incomes, consumption or expenditure, but also in terms of the number and categories of individuals sharing this income. The issue of using commensurable magnitudes when dealing with different households also emerges in the construction of income distributions, and measurement of inequality and poverty.

¹⁷ There exists economies of scale among goods consumed by a household. A private good is used by one household member only: clothes, medications, movie ticket, etc. In contrast, a collective good is used by all household members: bath room, television, the house itself etc. It can therefore be shared and lead to economies of scale. That is the reason why an equivalence scale is constructed in accordance with household characteristics, i.e. as an index of the cost of characteristics, whose construction rests on a comparison of the costs necessary for two households with different characteristics to attaining the same level of welfare.

There exists a great variety of adult equivalence scales and distinct scales are used in different countries. The objective of our study requires the use of a simple scale, and we have selected an adjusted variant of the Oxford scale¹⁸ because it is widely used and simple to use. The adjusted Oxford scale assigns a coefficient 1 to any adult 15 years old or more and 0.5 to children less than 15. It is the adjusted version used in this study, and it reflects the scale economies generated by household size, but does not incorporate differences in gender.

Households in any country confront different prices because the markets on which they do their shopping are different. From a practical point of view, differences should be taken into account when household expenditures are used in measuring welfare. The classical technique consists of deflating household expenditures using a cost of living index. In this respect, temporal and spatial price movements were smoothed out of 1996 and 2001 expenditures, using 2001 as the base year, given the relevance of the poverty threshold constructed for that year¹⁹.

3.2 The poverty line

Once the welfare measure is established, the poverty threshold must be determined. In fact, poverty analysis in any country requires the construction of a poverty line which distinguishes the poor from the non-poor, and which will then be used in relation to welfare indicators. There exist two major approaches for constructing poverty thresholds: the relative approach and the absolute approach.

The relative poverty line is totally determined by the distribution of expenditure from which it is calculated. To arrive at this, we decide on a poverty threshold as being an arbitrary and pre-selected percentage of the population making these expenditures. To study poverty in Ghana for instance, Boateng et al. (1989) used another method, which consists of establishing a poverty threshold as an arbitrary and pre-selected proportion of average expenditure. The poverty line constructed on the relative approach basis may therefore have several possible values, and may be unable to provide a set of coherent comparisons for measuring poverty under these conditions.

The absolute poverty line is often based on a minimum of nutritional need to be satisfied, which is converted into minimum food expenditures to which is added a non-food goods basket judged to constitute a basic minimum. The poverty threshold established on the absolute approach basis has a fixed value. This approach is widely accepted, easy to understand, and requires the classification or presentation of households according to income or consumption.

¹⁸ The most widely used Oxford scale assigns the coefficient 1 to the household head, 0.7 to other adults in the household, and 0.5 to children less than 15.

¹⁹ To adjust 1996 expenditures to the 2001 – base year level, a temporal price index is constructed by considering the month of October, 2001 as the base month. The latter corresponds to the middle point in the period during which ECAM II survey data were collected. Collection operations were carried out from February to April 1996 for ECAM I, and from September to December for ECAM II. Expenditure data of each survey month were divided by the index of the corresponding month. On the spatial level, Yaounde was chosen as the region of reference. To deflate expenditures, the 2001 spatial index was used for both surveys, under the assumption that the relative cost of living between different regions did not change much. The Paasche index was used to deflate the expenditure uses for comparisons at the level of regions, since it takes into account the weights of each region (for more details, see National Institute of Statistics (2002)).

In the present literature, there exists two principal commonly used methods to estimate the absolute poverty line namely, the method based on the satisfaction of nutritional needs (calories) or Foods Energy Intakes (FEI) method, and the method of Cost of Basic Needs (CBN).

These two approaches rest on the determination of certain consumption basic needs, judged as being relevant in poverty comparisons. The most important basic need is obviously expressed by the necessary food expenditures to ensure the recommended nutritional energy consumption. The Food Energy Intake (FEI) method, in particular; is applied by looking for the level of consumption expenditures or of income for which a person's typical consumption of food energy is just adequate to satisfy a predetermined food energy need. This method has been largely used in the literature (see for instance, Greer and Thorbecke, 1987, and Ahmed, 1991)²⁰.

The Cost of Basic Need (CBN) approach consists of defining a basket of goods and services an individual should be able to get in order to be considered as being non poor. Such a basket encompasses not only food and basic nutrition, but also clothing and housing. This would amount to calculating the minimum amount of expenditures necessary to purchase the consumer goods indispensable on the calorific level of survival.

The poverty line used in this study, which is worth 185 490 CFAF per year and per adult equivalent is the inferior poverty line calculated by the National Institute of Statistics following the CBN approach suggested by Ravallion and Bidani (1994). This method firstly consist of calculating a food poverty line from a basket of basic foods, and then estimate the food expenditure Engel function by then regression the share of foods on the differences in household size and composition, and other exogenous variables.

3.3 Poverty Indices

Once the criterion and poverty line are determined, the information gathered must be aggregated in order to the poverty measure. In this regard, the incidence of poverty within a population or sub-groups related to it is usually evaluated by indicating the percentage of individuals involved. As a matter of fact, recent analyses give prominence three principal measures of monetary (income) poverty or poverty in terms of consumption, which are generally used to evaluate poverty. These concern: the incidence of poverty (or headcount ratio) the depth of poverty (or the poverty gap index), and the inequality of poverty (or the severity of poverty index)²¹. These three indexes refer to a certain amount of income (expenditure), which is taken as a threshold separating the poor from the non poor.

The first and most simple of poverty measures is the ratio or incidence of poverty (P_0). It is the ratio between the number of poor households or individuals (q) and the total number of households or individuals (n). This index yields the proportion of the population which lies below the poverty threshold. The interpretation of this index poses no problems. In fact, if P_0

²⁰ Concerning the conceptual difficulties in the construction of poverty lines following the CBN and FEI methods, see Ravallion and Bidani, 1994.

²¹ These three approaches are derived from the family of poverty measures proposed by Foster, Greer, and Thorbecke (1984) whose general form is presented in the Appendix A. Moreover, it is important to note that up to now, many studies have been published on axiomatic poverty measurement methods (Sen, 1976; Donaldson and Weymark, 1986). This is why Sen (1976), for instance, has proposed that a poverty index should satisfy four axioms, namely: axioms of concentration, monotonicity, transfer, and decomposability.

= 0.70, this means that 70% of the population is poor. However, certain specifications must be made while construction poverty profile. Although this ratio is widely used, it has the defect of not capturing the gravity or extent of poverty, and it does not satisfy Sen's monotonicity and transfer axioms²².

The second poverty measure is the poverty gap measure (P_1) which measures the magnitude of poverty. Unlike poverty incidence, the poverty gap measure allows to estimate the proportional deficit of poverty, i.e. the average distance between the income (expenditure) of the poor and the poverty threshold. Therefore, this is a poverty gap index which measure the depth of poverty. It takes into account not only the number of poor persons, but also the extent of poverty. In fact, with P_0 , if a household or an individual is very poor, this will not be taken into account. The poverty gap index P_1 is the product of the poverty ratio and the average extent of poverty among the poor²³. This index is sensitive only to the average poor's situation and does not take into consideration the situation of the poorest among the poor.

In the context of designing policy actions for poverty reduction, it is central to know not only the number of poor persons, but also the degree of their poverty. The poverty gap index (P_1) is used in this respect, and thus allows to measure simultaneously the incidence and degree of poverty. Consequently, the P_1 index turns out to be a valuable instrument for comparing the relative poverty of various groups or geographic regions and thus permit to target actions towards the most destitute. The expression $nz P_1$ provides an estimation of the transfer of resources from the non poor to the poor to eradicate poverty if there are no negative incentive effects associated with money transfers and if targeting is perfect. Under these conditions $nz P_1$ represent the minimum financial commitments required to eliminate poverty for a given poverty line.

Despite the fact that P_1 takes into account the number of poor persons and the depth of poverty, it is not sensitive to income distribution among the poor. If there is a transfer from a poor person to another less poor person who lies below the poverty threshold, the value of P_1 is not affected. Hence P_1 does not satisfy Sen's transfer axiom.

The third poverty measure is the severity index of poverty (P_2), which is not only sensitive to the incidence and depth of poverty, but also to the distribution of resources among the poor. If income is redistributed from the poorest to the less poor (without any of them emerging from below the poverty threshold) neither the poverty ratio nor the poverty gap index will change. However, the severity index of poverty will increase, thus indicating that the poverty of the poorest has become more severe. The index of the severity of poverty is more sensitive to changes in the incomes of the poorest, and less sensitive to changes in the incomes of those who live close to the poverty threshold.

²² The monotonicity axiom stipulates, *ceteris paribus*, that a fall in the income of a person lying below the poverty threshold leads automatically to an increase in the poverty measure. The transfer axiom on the other hand requires that an income transfer from a person lying below the poverty line to a person enjoying a higher standard of living automatically increases the poverty measure's value unless there is a reduction through the transfer in number of households lying below the poverty line.

²³ In other words, this ratio is obtained by multiplying the ratio of poverty by the ratio of the difference between the poverty threshold and the average income (expenditure) of the population living below the poverty threshold expressed as a fraction of the poverty threshold.

The interest of the above poverty measures lies in the fact that they are additive and decomposable into sub-groups. In fact, if the population is divided into $j = 1, 2, \dots, m$ mutually exclusive and exhaustive sub-groups, and P_{aj} is the measure calculated for the group j , and f_j , the proportion of the national population lying in group j such that ($f_1 + f_2 + f_3 + \dots + f_m = 1$), the nation measure P_a is simply the sum of sectorial P_{aj} measures :

$$P_a = \sum_{j=1}^m f_j P_{aj}$$

From the preceding equation, we can derive the contribution c_j of each sector or sub-group of

national poverty: $c_j = \frac{f_j P_{aj}}{P_a}$

These contributions provide us with a good idea of where packets of poverty are located in the country (i.e. which regions, professional groups, various sectorial groups etc), and they can be used as a basis for dialogue on the decisions that need to be taken in order to reduce poverty.

Comparisons of poverty measures over time or between different groups require a test of robustness in the changes observed in poverty indexes. These changes may depend on the poverty line chosen, so that using two different poverty lines may lead to changes taking opposite directions. Stochastic dominance techniques in poverty analysis help ensure that poverty comparisons are necessary valid for several classes of poverty indices, while they are also valid for a series of thresholds. Generally speaking, stochastic dominance as related to poverty consists in ranking income/expenditure distributions, i.e. it checks whether a distribution clearly has more or less poverty than another for a series of poverty lines.

First order stochastic dominance implies a comparison between the cumulative distribution functions of the welfare indicator (total expenditure per adult equivalent) for each of the survey years or for different household groups. A distribution “dominates” another if the expenditure distribution function for the year or household group considered, lies above the one corresponding to the other year or group at all expenditure levels. When first order dominance checks out for two different years or two groups, it may be concluded that FGT-class poverty measures, namely, the poverty ratio, poverty gap index and severity index of poverty of the first year or the first group, are higher than those of the other year or other group for all the poverty lines.

If the distribution curves intersect, the analysis is ambiguous. In this case, some poverty lines and some poverty measures will rank the distribution in a different manner. Thus, when first dominance test results are not decisive, a higher order dominance test is required²⁴.

The poverty analysis conceptual framework presented previously will be applied to data derived from two Cameroonian household surveys, then completed with information on the satisfaction of basic needs and economic activities of individuals.

²⁴ Second order dominance tests rest on the analysis of so-called “deficit” curves which are the integrals of cumulative expenditure distribution functions. These curves permit to determine whether poverty has decreased or increased with time for all poverty measures of the poverty gap index order, or of a higher order (i.e. severity of poverty index). Higher dominance levels may still be defined. For more details on stochastic dominance in poverty, see Ravallion (1994), Davidson and Duclos (1998).

3.4 Data Sources

Usually, poverty profiles are work out from different data sources. Although the availability of much information contribute to obtaining a better poverty profile, it is important to note that an operational poverty profile mainly requires easily accessible and adapted data, and a precise definition of poverty. In this context, we present below the two Cameroonian household surveys (ECAM I and ECAM II) used for the construction of the poverty profiles and respectively conducted in 1996 and 2001 by the National Institute of Statistics (NIS).

ECAM I was carried out during 3 months, covering the country's ten provinces, and gathered a random sample of 1700 urban and rural households. It aimed at three main objectives, namely, to measure the impacts of the economic crisis and structural adjustment policies on household living conditions and levels; to analyze inter-relations between the dimensions of levels of livings; and to analyze the trends and evolutions relative to other sources of data. This was a stratified survey with two degrees in Yaounde and Douala and with three degrees in the country's other cities, with a distinction between urban and rural areas. Two types of questionnaires were designed, one type for the cities and large cities, and the other for the rest of the country. These questionnaires were administered to select households and comprised 11 sections several of which could be used to analyze poverty in Cameroon.

The second Cameroonian Household Survey (ECAM II) was concerned with the measurement of Cameroon household living conditions in 2001. Its main objective was to put in place the foundations of a permanent mechanism for monitoring and evaluation household living condition in general, and the poverty reduction program in particular. It allowed to establish a situation of reference which could be used periodically to assess the impacts to programs and policies implemented in Cameroon.

ECAM II was random sampling survey covering the whole country and comprising a sample of 12 000 households²⁵. It aimed to construct a poverty profile at the national level and at the 10 provincial levels. To that end, the large cities of Yaounde and Douala were considered as special cases, and each of the ten provinces was divided into two strata, one urban and the other rural. The surveys therefore was conducted on 22 strata of which 10 were rural and 12 urban. The questionnaire was organized into 15 sections to study the various dimensions of poverty in Cameroon. Data collection lasted for 3 months in each of the 3 areas (rural, semi-urban and urban) from September to December 2001). Moreover, a particular part of the survey was dealing at the same time with gathering data on prices to permit the evaluation of self-consumption and to render the household expenditures of different regions comparable.

To evaluate the change in poverty between 1996 and 2001, adjustment had to be made in data collection techniques and methods for calculating poverty indicators²⁶.

²⁵ With the exception of the diplomatic corps and their households.

²⁶ The evaluation of the change in poverty between 1996 and 2001 using ECAM I and ECAM II survey data required a number of adjustment in the methodological and conceptual differences between these two surveys. These differences mainly concerned sample size, nomenclature structure used, data collection techniques, and methods for calculating the main poverty indicators. Data from the two surveys were therefore harmonized in 2002 by the National Institute of Statistics (NIS) with World Bank support to smooth out their inherent points of divergence. (For more detail on ECAM I and ECAM II data adjustment, see National Institute of Statistics of Cameroon (NIS), 2002).

4. The Poverty profile

4.1 Evolution of Total Expenditures

Improvement in the welfare status of a population may be roughly measured on the basis of changes in the total expenditures of this population. Tables 2 and 3 in Appendix B present average total household expenditures per adult equivalent for the years 1996 and 2001 and for the residence areas and strata of household heads, respectively.

It clearly emerges from examination of both Tables that the level of living of Cameroon's population improved between 1996 and 2001. The average per adult equivalent expenditures on the national level rose by about 3% on the average over the period.

We note that according to residence areas of household heads, the average total expenditures per adult equivalent of urban households are higher than those of rural households, and that they increased over the 1996-2001 period (see Table 2). Urban household average expenditures are almost twice as high as those of rural households. Consequently, urban households gained more benefits from the increase in expenditures than rural households. In other words, the poor benefited less from the rise in expenditures than the non poor, since the majority of the poor reside in rural areas. Which means that the good performance of agricultural export products (coffee, cocoa, etc) resulting from the higher world prices and the CFAF devaluation could have benefited more to exporters and middlemen than to producers who mostly reside in rural areas.

Table 3 presents the evolution of per adult equivalent total expenditures over the 1996-2001 period, according to households heads' residence strata. Examination of this Table shows that urban strata expenditures (Yaounde, Douala, Other cities) are higher than rural strata's (Forest, High Plateaux, and Savannah), regardless of the year considered. Moreover, the city of Yaounde and the "Rural Forest" stratum recorded significant total expenditures per adult equivalent undoubtedly derived from the slight restructuring of Civil service salaries in 1997, and from the new activities of the industrial units in the Forestry industry.

We also note that the increase in total expenditures per adult equivalent in the economic capital of Douala is lower than those of the political capital of Yaounde. The city of Douala lower performance may be attributable to the problems facing the private enterprises located in that economic capital. The evolution of the "Rural Savannah" stratum recorded a fall in expenditures over the period under review, due particularly a one year of drought and two years of cattle epidemic in the Northern Province during the study period.

4.2 Evolution of Income Poverty

The poverty ratio, the poverty gap index and the severity of poverty index have been calculated, using the annual poverty line of 185 490 CFAF per adult equivalent. Table xxx and z presents the estimation of these three (indexes) poverty indexes on the national level for the years 1996 and 2001. As expected, these three show a decrease in poverty in 1996 and 2001. This result is confirmed by the poverty incidence curves of figure 1, Appendice C. The analysis of these curves show that starting from about 90 000 CFAF per year and per adult equivalent, the 2001 FGT curve dominates the 1996 curve. In other words, regardless of the poverty threshold used starting from this minimum level, poverty is lower in 2001 than 1996.

4.2.1 Evolution of Poverty According to Residence Area

In 1996, 53.3% of the population had annual expenditures per adult equivalent below the poverty threshold of CFAF 185 490. In 2001, the poverty ratio decreased to 40.2%. Over the same period, the poverty gap index dropped from 19.1% to 14.1%, and the severity of poverty index from 9% to 7%. Such changes in the depth and severity of poverty indicate that those lying below the poverty threshold were not the only ones who gained from improvement in Cameroon's economic performance between 1996 and 2001.

There also exist large regional disparities in the incidence, depth and severity of poverty in Cameroon. Table 4 shows the ratio of poverty, the poverty gap index, and the severity index of poverty for the rural and urban areas of the country, and for the years 1996 and 2001, using the poverty line of CFAF 185 490. Changes in these three poverty indexes between these two years permits to study the evolution of this phenomenon on the monetary level.

All three poverty measures systematically higher in the rural than in the urban area. In 1996, the poverty ratio in the rural area was 59.6% compared with 45% in the urban area. Increase in consumption between 1996 and 2001 induced a reduction in the rural area's poverty ratio by 9.7 percentage points, while the urban area's poverty ratio fell by 19 percentage points. Similar reductions are observed for the poverty gap index and the index of the severity of poverty. Overall, poverty decreased between 1996 and 2001, and this decline was more pronounced in the urban than in the rural area regardless of the poverty index considered.

Moreover, an analysis of relative contributions to national poverty confirms the rural area's vulnerability. In fact, use of the poverty ratio shows that the rural area contributed 73.1% to national poverty in 1996 and 8% in 2001. It is interesting to note that this relative contribution decreases with the rise in the coefficient of a version for poverty. In other words, poverty incidence is not only higher in the rural area, but its gravity is also more pronounced. Under these conditions, any policy aiming at reducing poverty in Cameroon should give priority to the rural population.

To test the robustness of the overall reduction in poverty between 1984 and 1996, we used welfare dominance standard tests²⁷, by graphing poverty incidence curves for the entire study period and for each household residence area. The robustness tests of temporal variations in poverty boils down to comparing the poverty incidence curves of different years for each separate area. Figure 1 in Appendix C shows that from a poverty line of CFAF 90 000 per adult equivalent per year poverty decreased unambiguously in Cameroon, for the 2001 poverty incidence curve dominates that of 1996, that is it lies entirely to the right of that of 1996²⁸. The examination of figure 2.1 in Appendix C of the urban area shows that poverty is higher in 1996 regardless of the poverty line retained. On the other hand, examination of figure 2.2 of the rural area indicates that this result only holds true from a poverty threshold of about CFAF 90 000 per adult equivalent per year.

²⁷ Generally, dominance analysis requires graphing the distribution curves of the various regions, socio-economic groups or years to be compared. Normally distributions must be graphed entirely. But practically, the graphic representations of these distributions may be limited to the highest possible position of the poverty line.

²⁸ When the poverty incidence curve of a group of individuals (or the same group at a final date) lies entirely below that of another group of individuals (or of the same group at an initial date) the first group of individual is less poor than the second group (and poverty dropped during the two dates).

4.2.2 Evolution of Poverty by Strata

An analysis similar to the preceding one may be carried out according to household heads' residence strata. In this respect, we note that the poverty profile according to strata remained almost unchanged between 1996 and 2001. In fact, poverty incidence analysis shows that in 1996 and 2001, the strata had the same ranking, except for Douala and Yaounde, respectively the country's economic and political capitals (see Table 5). However, it is important to note that all strata witnessed a fall in poverty incidence, except for the "Rural Savannah" stratum, which rather recorded an increase in the poverty rate. Therefore, it seems that the households of the other rural strata can develop better poverty reduction strategies than those of the "Rural Savannah" stratum. The two biggest cities of Yaounde and Douala witness the most significant reductions in poverty incidence which decreased respectively from 37.3 to 18.5% and from 49.0 to 18.3%, from 1996 to 2001.

The poverty gap index and the severity index of poverty fell during the period considered in all strata, excluding the Rural "High Plateaux" stratum, which recorded an increase the severity of poverty index. Moreover, urban strata witnessed the most significant reductions relative to rural strata, thus indicating that urban households were the principal beneficiaries of income during the period.

Analysis of the different relative contributions to poverty at the national level highlights rural strata vulnerability. In fact rural strata contribute more to national poverty than urban strata both in 1996 and in 2001.

In the final analysis, data in Table 4 and 5 provide useful information for targeting policy actions of poverty reduction. Firstly, despite the reduction of poverty indexes during the period studied, poverty remains significant. In this regard, it has become urgent to the measures intended to reduce the scourge further. Secondly, target areas should be rural areas, which include the Forest High Plateaux and Savannah strata where half of Cameroon's poor people live.

To complete the spatial distribution of poverty started earlier, we now consider in turn the relationship between poverty and some factors which may be considered as possible determinants of poverty such household economic activities, the level of education and certain demographic factors.

4.2.3 Evolution of Poverty According to Sex

Table 6 in Appendix B present the values of poverty indexes decomposed according to the household head's gender. For each index considered male household heads are always more affected by poverty than female household heads both in 1996 and 2001.

In 1996 as a matter of fact, the incidence of poverty was 54.2% among male household heads against 45.8% for female household heads. Similarly, the relative contribution of female household heads to national poverty was very low relative to that of male household heads, that is to say 10.80% and 89.20% respectively. In 2001, poverty affected more male household than female household heads for the incidence of poverty for the former was 40.2% and 38.7% for the later.

In addition, the relative contribution to national poverty of male household heads was clearly higher than the contribution of female household heads, that is to say, 82.82% for men and 17.21% for women. The same tendency holds when the poverty gap index and the severity of poverty index are analyzed.

Dynamic analysis shows an overall decrease in poverty between 1996 and 2001, and this decline is lower in households head by a women. This state of affairs is explained by the significance of the difference in the poverty incidence between male household heads and female household heads in 1996. As previously mentioned, between 1996 and 2001, the proportion of households managed by men decline, while that of households managed by women rose.

If we consider poverty incidence, which at the national level decreased by 13.1 percentage points between 1996 and 2001, this decline is lower in households managed by women; this situation is due to the significance of the difference in the incidence of poverty between the two categories of households in 1996 (54.2%) among households managed by men against 45.8% among those managed by women. Between 1996 and 2001, male household heads adjusted their household size downward, while household managed by women kept the same size.

The most significant reductions in the intensity and the severity of poverty were also recorded in households managed by women.

Preceding results are confirmed by the first order dominance test, which shows that individuals living in household whose head is a man experience a decrease in poverty. As concerns household managed by women, the FGT curves are not only very close, but the touch one another at several points. Consequently, it is difficult to draw a definitive conclusion as in the preceding case (see, figures 4.1 and 4.2 in Appendix C).

4.2.4 Evolution of Poverty According to Occupation

The economic activities of a household and those of its members is undoubtedly very important owing to their vital role in the determination of household income. In this paragraph, we analyze this question at the household level.

Examination of data in Table 7 (in Appendix B) shows that in terms of reductions in the incidence, intensity and severity of poverty between 1996 and 2001, the best performances were realized by households whose head was unemployed. This situation could be explained by the increase the incomes of unemployed workers due notably to family allowances and social security allowances of workers laid-off by the Civil Service, public enterprises and parastatals which were paid-off during the 1996-2001 period.

Figures 3.1 and 3.2 in Appendix C show that the FGT curves between 1996 and 2001 are not easily comparable as a function of socio-economic group. Concerning households whose head is active and has an occupation, below a poverty threshold of 100 000 CFAF the 2001 FGT curve does not dominate that of 1996 (see Figure xxx). On the other hand, with households whose head is unemployed, we note a net reduction of poverty between 1996 and 2001 whatever the poverty line. Households managed by inactive individuals also experience a net decline in poverty. Their FGT evolution curves touch one another in the neighbourhood of 65 000 CFAF

4.3 Basic Needs and Poverty

In the preceding paragraphs, we capture poverty through household expenditures per adult equivalent. Now, we are going to examine the dimensions not considered by the previous indicators namely education, health and housing, which constitute various aspects of the satisfaction of basic needs highlighted these recent years in poverty analysis. Moreover, it is generally accepted that human capital accumulation is a means for increasing individual gains and, consequently, to help them escape the spectre of poverty. ECAM I and ECAM II surveys took this issue into account and gathered data on education and health. The presentation which follows proposes to look into these non-monetary aspects of the standard of living in Cameroon in 1996 and 2001.

4.3.1 Poverty and Educational Level

Education is the corner stone of socio-economic growth, as well as the principal means for individuals to improve their standard of living. Increasingly, it is accepted that human capital investment raises productivity and hence provides more chances to individuals to increase their income. Education and training thus constitute the inevitable channels through which human capital investment flows. One of the results of the many poverty comparisons in the context of international poverty comparisons suggests that an educated population is absolutely essential for long-run growth. By exploiting its natural resources, a country may experience some economic growth over some period, but only an educated population may permit it to continue growing.

Literacy

The literacy rate constitutes the simplest measure of the educational level of a population, the data of which was gathered by the two surveys used in this study. This rate represents the proportion of the population surveyed, aged at least 15 years which can read and write a letter, or succeeds in working out a simple written calculation.

It emerges from Table 8 and 9 in Appendix B that the literacy rate has risen in Cameroon by about 6 percentage points between 1996-2001. However, this result does not hold for different strata in terms of household heads' residence. Yaounde and Douala witness almost stable schooling rates while the "Other Cities, Forest, and High Plateaux strata experienced an increase in their literacy rates of about 12, 13, and 6 percentage points, respectively. On the other hand, the rural savannah stratum, which is already a laggard relative to other strata witnessed a 3 percentage point fall in its schooling rate over the 1996-2001 period.

The distribution of schooling rates by sex shows that women's rate increased by about 8 percentage points whereas the schooling rate for men rose only by 5 percentage points. However, women remain more illiterate than men, overall. The rise in schooling rates for both sexes could be explained by the first results of the efforts made by non-governmental organizations (NGOs) in the context of literacy programs preceding any training for the practice of income-generating activities in some provinces such as that of the Extreme-North.

Moreover, the poor remain more illiterate than the non-poor. In fact, the population of poor people, which is already quite illiterate, witnessed a small increase of 1 percentage point in

their literacy rate, while the non poor recorded a significant rise of about 8 percentage points. In 1996 and 2001, poor women had the lowest literacy rates, unlike men.

Literacy being the result of past efforts, present efforts are captured better by schooling rates which permit to have a good idea of the future educational level of the population. This question is important given the effect of schooling on welfare, and it is useful to know whether there exists a vicious circle for the poor between the poverty level and sending children to school.

Schooling of Children aged 6 to 15

The sensitive schooling rate is probably the net schooling rate at the primary school level, i.e. the number of school age children (6 to 14) able to go to primary school, and enrolled in primary as a ratio of all the children aged 6 to 14. This rate varies with economic conditions insofar as it reflects, for instance, the fact that parents withdraw their children from school and send them to do work in the fields or in family enterprises. Since this withdrawal may be temporary or permanent during the school year, it is likely to lead children to repeat the year. The net schooling rate captures both of these effects (by a fall in the rate).

The data in Table 10 and 11 in Appendix C show that for Cameroon as a whole and for household heads residence strata, the net schooling rate (NSR) generally increased during the 1996-2001 period, save for the Forest and High Plateaux rural strata. The “Other Cities” stratum witnessed a more significant increase as compared with Yaounde and Douala. In fact, the “Other Cities” stratum recorded on NSR increase from 65.4% in 1996 to 86.0% in 2001, or a rise of 21 percentage points. The rural savannah stratum also witnessed a rise of about 13 percentage points during the same period despite the fact this region remained the least schooled in 2001, with an NSR of 46%. This situation might be due to a net improvement in school infrastructures during the period. On the other hand the Forest stratum recorded a fall in the NSR of 3 percentage point, notably attributable to the Easter province, which belongs to the set under schooled regions of the country.

The data in Table 10 and 11 show an overall rise schooling equally distributed between boys and girls. Thus the schooling inequality which already existed in 1996 between boys and girls in favor of boys, remained in 2001.

Comparisons of the evolution of schooling between the poor and the non poor shows that schooling decreased by about 3 percentage points among the poor (boys and girls alike), whereas it increased by 8 percentage points among the non poor. As a consequence, on the schooling level, the gap between the poor and the non became more pronounced between 1996 and 2001, due mainly to the unemployment of young graduates who might have contributed to this situation by putting off the poor who thus found a reason for not making sacrifices to educate their children further since they can't find jobs.

Average Spending on Education

In Table 12 in Appendix B, we examine average household spending on education per pupil, which recorded an increase of about 22%, going from CFAF 23 000 in 1996 to CFAF 48 000 in 2001. The various household heads residence strata witnessed similar rises in expenditures, the “Other Cities” stratum recording the maximum annual growth rate of 25% during the study period. On the other hand, in the rural savannah stratum, household expenditures per

pupil remained low. In addition the rural savannah stratum recorded the lowest rate of average expenditures (about 5% per year) over the period studied.

The distribution of expenditures by poverty categories shows that the general upward trend in educational expenditures was less pronounced among the poor than among the non poor, thus causing an increase in the gap between the poor and non poor in terms of spending on education. In 1996, average spending on education per pupil among the poor represented a little over a third of that of the non poor, while in 2001, it amounted only to about a fourth of that of the non poor.

Table 13 in Appendix B presents the share of household expenditures on education, which may be interpreted as household's willingness to pay for their children's education. We may note that during the 1996-2001 period, the share expenditures on education witnessed a rise from 4.1% in 1996 to 5.4% in 2001. We also note disparities similar to those observed with average educational expenditure level per head. In 2001, the poor used a lower share of their income on education than in 1996, whereas it is the reverse among the non poor.

4.3.2 Health and Poverty

Table 14 in Appendix B presents the proportions of households which consulted an informal health facility and shows that there was overall an increase in the number of persons who visited this type of facility between 1996 and 2001. In fact, 21% percent of persons made their last visit to an informal health facility for consultation in 1996, against 25% in 2001. However, disparities are observed at the level of different household heads residence strata. The Forest and Savannah strata show a doubling of the consultation rates between 1996 and 2001, contrary to the rural Haut Plateaux stratum and the city of Douala, which rather recorded a decline in consultation rates in an informal health structure during the same period.

Moreover, the number of poor people who last consulted an informal health facility fell from 32% in 1996 to 30% in 2001. This overall drop in the consultation rate which occurred particularly in the Forest and Savannah rural strata could be due to several factors such as financial problems, geographic remoteness, and the lack of means of transport. On the other hand, among the non poor, the consultation rate increased from 13% in 1996 to 21% in 2001. This rise could be attributed to the non poor's lack of motivation in consulting informal health facilities poor reception and low quality of services.

Health Expenditures

As for education, we present household expenditures devoted to health during the study period, which permit to capture the constraints weighing down poor households. The data in Table 15 in Appendix B show that average annual per capital health expenditure¹ rose from CFAF 13 000 in 1996 to 22 000 in 2001. Urban strata recorded the highest increases, which doubled between 1996 and 2001 contrary to rural strata. This result might be linked both to the relatively large quantity of health services provides in urban strata as compared to rural strata, and to the rise in the income level of households residing in urban strata relative to rural strata.

¹ These are consultation and drug expenditures

Table 15 highlights the fact that non poor households recorded much of the average annual per capita health expenditure increase, which went from CFAF 20 000 in 1996 to CFAF 32 000 in 2001, or a rise of 62%. On the other hand, the poor experienced an increase of 15%, which is clearly inferior to those of the non poor.

As for education, we calculated the share of expenditures households devoted to health (see Table 16 in Appendix B). Thus, between 1996 and 2001, the share of household expenditures on health witnessed an overall slight increase of about 0.4 percentage points mainly in urban strata, while this share showed a downward trend in rural strata, with the exception of the “Other Cities” and Rural Savannah strata.

4.3.3 Housing and Poverty

Housing constitutes a basic need in the life of each household and in this regard, the quality of housing plays a significant role in the determination of household welfare. Here, we evaluate the quality of housing using three criteria: access to potable water, the use of electric power as a lighting source and natural gas for cooking, and the materials used in the construction of the house. Table 17 in Appendix B shows that there exists a close relationship between the level of living and these three criteria.

When we consider running water which also constitutes a basic element required for a healthy life, ECAM I and ECAM II survey results indicate an increase in the proportion of the population with access to drinking water from 43% in 1996 to 51%, corresponding to an 8 percentage points increase during the period considered. This evolution remains below the objective set up by the government to reach an access rate to water of 71% by 2015. Obviously, a great effort must be made to achieve this objective.

However, the most striking feature here is not evolution over time, but the disparity between the poor and non poor, in spite of the improvement recorded in the rate of access to drinking water between these two groups between 1996 and 2001. Data indicate 3 poor people out of 10 have access to potable water, compared with 5 out of 10 among the non poor.

In addition, it clearly emerges from the survey that potable water is a strictly urban benefit. In fact, the disparity between the rural and urban areas in terms of access to potable water remained unchanged over the study period, and worsened in 2001. The rural area, which was remarkable backward in terms of access to drinking water relative to the urban area, recorded a significantly lower increase in percentage points than the urban area.

The proportion of households using electricity as a lighting source increase overall between 1996 and 2001. About 3 households over 10 used electricity as a lighting source in 1996 compared to 4 out of 10 in 2001. This increase is almost the same in the rural and urban areas in terms of percentage points. However, electric power seems to exist solely in the urban area. In fact, about 9 households over 10 have access to electricity in the urban area, against 2 over 10 in the rural area, whereas the majority of the well-off have access to this source of energy.

Comments similar to those concerning electricity may be made as to the use of natural gas as a cooking fuel. Cooking gas seems to be essentially consumed by urban households. The lack of interest by rural households in this source of energy may be explained not only by its unavailability in most rural areas and the low level of living of rural household, but also by the abundance of other sources of energy for cooking such as wood, and charcoal in rural

areas, which are more accessible than natural gas, and which unfortunately contribute significantly to the deforestation of the rural environment.

The quality of materials used for housing construction may also permit the measurement of household living conditions. Data in Table xxx show that overall, the proportion of households which used lasting materials to build their housing remained almost stable between 1996 and 2001 whatever the residence area or the level of living of households.

5. Changes in Inequality

In the preceding sections, we dealt with the evolution of poverty over the period 1996-2001. Now, we turn to the phenomenon of inequality during the same period²⁹. To this end, we use an inequality measure based on household expenditure³⁰, and center our analysis on Cameroon as a whole, in addition to rural and urban areas.

Table 18 in Appendix B shows the evolution of total household expenditure inequality over the 1996-2001 period, using the Gini coefficient and Theil's indices. Examination of Table 18 indicates that, whatever inequality used, total inequality per adult equivalent increased in Cameroon over the 1996-2001 period. The Gini coefficient displays a lesser increase than do those yielded by entropy-class inequality measures. GE(0) provides the highest percent increase in inequality ; which means that the inequality increase occurs when a higher weight is assigned to the lower end of the distribution of expenditures.

By looking into inequality in rural and urban areas in turn, we note that the three inequality indicators fell in urban areas between 1996 and 2001, thus indicating an overall decrease in inequality in these areas. On the other hand, these indicators rose in rural areas during the same period, indicating an increase in inequality in these areas. These results are confirmed by analysing the relative contributions to national inequality by each of these areas. Actually, urban inequality became less prevalent, its contribution to total inequality having dropped from 41.6% to 30.6%, as measured by Theil's index GE(0), and from 51.8% to 46.7% as measured by theil's index GE (1). On the other hand, rural inequality's contribution to total inequality rose from 49.2% to 57.8% and from 39.8% to 40.4% as measured respectively by the GE(0) and GE(1) indices, i.e. rural inequality played an increasingly significant role in total expenditure inequality.

Consequently, public authorities should implement policies likely to reduce inequality in the rural area which, in addition, the lowest income relative to the urban area.

Table 18 above also presents within-group inequality and between groups inequalities. In general, within group inequality in both the rural and urban areas largely explains total inequality. Since a higher inequality percentage is ascribable to within-group inequality, efforts to reduce this inequality category will contribute further to total equity. This kind of

²⁹ Inequality is measured in this paper on the basis of household expenditure data gathered by ECAM I and ECAM II surveys. To measure the extent of inequality in the distribution of expenditure we use the two main inequality measures, namely the Gini index Theil's indexes.

³⁰ An alternative would be to measure income or asset inequality which generally constitute more efficient measures of inequality than those based on consumption. However, income and assets are much more difficult to quantify and their data are unavailable in the ECAM I and ECAM II surveys. In addition, consumption in some cases may be a more appropriate measure of the real level of living of an individual as seen previously.

information constitutes an important guide in the design of policies aiming at the reduction of both inequality and eventually relative poverty.

Moreover the share of total inequality attributable to the differential between the respective averages of total expenditures per adult equivalent in the rural and urban areas is less than 10%. We therefore conclude that inequality between these two areas contributes relatively little to national inequality.

Figure 5 (See Appendix B) presents stochastic dominance analysis using ECAM I and ECAM II surveys. This graph shows that the 1996 total expenditures per adult equivalent Lorenz curve lies everywhere below the 2001 curve. This result indicates that a general increase in the level of living inequality (measured by total expenditures per adult equivalent) took place between 1996 and 2001. Preceding result concerning urban and rural areas are corroborated by the Lorenz curves of Figures 6.1 and 6.2.

The results provided by Cameroon's poverty profile indicate the existence of a more significant proportion of poor households in the rural area compared to the urban area, while inequality is more of an urban than a rural phenomenon. This result suggests that any policy aiming at reducing urban poverty and consistent with equity could consist of encouraging transfers from the rich to the poor. On the other hand, rural poverty reduction would require an investment of resources in poor regions to develop and /or improve on their existing physical and socio-economic infrastructures (roads, health, education etc.), since these actions are likely to reduce both poverty and inequality.

6. Conclusion and Economic Policy Recommendations

The overall objective of this paper was to construct a dynamic poverty profile for Cameroon by using the two ECAM I and ECAM II household surveys realized respectively in 1996 and 2001 by the National Institute of Statistics (NIS)³¹. Poverty is assessed with the FGT-class of poverty indexes comprising the poverty ratio, the poverty gap index and the severity of poverty index, as well as stochastic dominance techniques to gauge changes in poverty. Poverty assessments are provided to highlight the degree of deprivation experienced by rural and urban Cameroonians. Households are classified according to their socio-economic characteristics and their poverty incidences were measured to sharpen the poverty profile, and to identify the attributes characterizing poor households suffering from acute poverty

The results arrived at mainly show that at the national level, the evolution of poverty measured in terms of total expenditures per adult equivalent follows that of GDP. During the study period in effect, all poverty indicators (incidence, depth, severity) decreased significantly in Cameroon as a whole. The poverty ratio declined in relative terms by nearly more than 32% with an absolute reduction in poverty 19% in the urban area, compared to 10% in the rural area. Moreover, in accordance with African economics configuration, the rural areas contribute by more than 70% to national poverty, both in 1996 and 2001. The robustness of the above results is confirmed by a 1st order dominance test which indicates that the poverty incidence curves of the different years, of Cameroon as a whole, and those of household heads' residence areas do not intersect one another for a large range of poverty thresholds.

³¹ Despite the fact that the data used need some updating, the results previously arrived at are likely to contribute to a better understanding of Cameroon's poverty profile.

By considering household heads' residence strata we note the existence of an unequal spatial distribution of poverty. Regardless of the indicator considered, the vulnerability of rural strata (Forest, High Plateaux, Savannah) in terms of poverty is higher than that of the cities (Yaounde, Douala, Other cities) both in 1996 and 2001. In terms of poverty according to strata, poverty rate decreased significantly in all strata save for the "Rural Savannah" stratum. In urban strata (Yaounde, Douala) poverty declined more rapidly than on the national level. This situation could be due to the fact that urban households benefited more to the rise in income during the 1996-2001 period. On the other hand, rural strata experiences less significant reductions in the incidence of poverty. Moreover, all the other poverty indicators (intensity and severity of poverty) decreased, thus showing that poverty became less intense and less severe in 2001 than 1996.

As to the link between the sex of the household head and poverty, the results of the study show that, in general, men experience a higher incidence, intensity and severity of poverty than women both in 1996 and 2001, and they also have the largest falls in the preceding three poverty indicators.

Analysis according to the household head's activity shows that households managed by the unemployed experienced a large reduction in the incidence, intensity and severity of poverty, compared with household whose heads were active in an occupation during the period considered.

The study moreover examined the poverty aspects related to the satisfaction of basic needs notably as concerns education, health, and housing. The results show an overall positive evolution in access to education and health services. However, the non poor witnessed a more significant improvement than the poor. Consequently, the disparities worsened between both groups. Furthermore, the urban area also recorded a more significant improvement than the rural thus widening the gap that already separated them in 1996.

Finally, the study analysed inequality in the distribution of income, and provided a number of conclusions on the nature of inequality in Cameroon between 1996 and 2001. In effect the results show persistence in income distribution inequalities between individuals. Regardless of the inequality index retained (i.e. Gini index or Theil's indexes), total expenditure inequality increase in the country over the 1996-2001 period, thus indicating an accentuation of inequality. On the other hand, in urban areas, inequality indicators dropped over the period, while they rose in the rural area. Moreover the decomposition of inequality by area shows an increase in the contribution of rural inequality to total inequality in Cameroon. Public authorities should therefore implement policies likely to slow down the rise in inequality in the rural area where income levels are the lowest in the country.

Furthermore, the study shows that intra-group inequality among urban and rural areas explains a large part of total inequality. As a consequence, efforts aiming to reduce this type of inequality may contribute more to further equity. This kind of information may constitute an important for decision makers in their attempt to design policies aiming at reducing inequality and eventually relative poverty.

At least five others economic policy implications emerge from the results arrived at in this study. Firstly, in terms of poverty, targeting, rural areas where most of the poor lives should be the first recipients of poverty reduction efforts. The resources earmarked for poverty

reduction and poverty relief program should be focused as a matter of priority on three rural strata which are: the Forest, the High Plateaux and the Savannah. These strata concentrate 60% of the population of the country and contributed 70% to national poverty both in 1996 and 2001. However, although the majority of the poor reside in rural areas attention should also be given to urban poverty since its level remained quite high in 2001.

Secondly, since poverty has declined in Cameroon during the period under study owing to the recovery of economic growth, it follows that, not only growth should be accelerated (given that there has been a growth downward trend reversal in recent years), and the fruits of growths equitably distributed, but social programs must also be targeted better in order to further accelerate poverty reduction both in monetary and non monetary terms.

In this regard, it is useful to note that the understanding of the policies and institutions, which lead to high and sustained growth rates constitute the first step in poverty reduction. Although this study does not address growth factors, it is important to mention that the pursue of healthy economic policies (i.e. a mix of fiscal and monetary policies, with low rate of inflation for instance, a favourable investment climate, trade openness etc.) is a precondition for strong and sustained economic growth.

However, beyond the concern about these general issues on the promotion of growth, the results of this study have identified the regions where public authorities should concentrate their efforts to increase the assets of the poor. This is why growth and agricultural productivity must be boosted, and opportunities promoted for populations living in inaccessible areas. In fact, the majority of the poor reside in rural areas where poverty turns out to be more resistant to growth than in urban areas. Agriculture being the major activity in rural regions, stimulating agricultural growth could be central for poverty reduction in Cameroon.

Thirdly, the progress achieved on poverty reduction should be monitored. Significant progress has been realized in recent years in terms of improvements in the quality and accessibility of data to monitor changes in poverty, and to evaluate the specific policy actions taken to reduce poverty. Under these conditions, additional household surveys should be conducted periodically to provide representative data on the monetary and non monetary dimensions of the level of living. Moreover, survey data should be made available to researchers for policy analysis and evaluation.

Fourthly, recent population census data should be used to make an updated poverty map. In point of fact, a poverty map highlights the concentration of various forms of poverty across the country and allows in that regard to capture the spatial dimension of poverty with much more precision¹. It presents poverty ratios in different regions; which is important for decision makers, for poverty ratios permit to identify disadvantaged regions where poverty is highly concentrates. Moreover, knowledge of the areas where the poor live is useful for pinpointing the regions in which policy actions may be successful because of a high concentration of the poor. Poverty maps can be used as an efficient tool for assessing the impact of spatially targeted poverty reduction measures etc.

Finally, a study of poverty in a country should ideally take into account his dynamic aspect; and analyze changes in individual household welfare levels over time. Such an approach

¹ The problem with making poverty maps is that it requires significant resources.

permits to distinguish the permanent poor from those who are temporarily poor and could also be used to link the poverty model to changes in economic circumstances. Consequently, it is important to note that it would be desirable if in the future Cameroon's household surveys could help realize this possibility by gathering household panel data for consecutive years.

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Appendix A

Poverty Measures

The class of poverty measures proposed by Foster, Greer, and Thorbecke (1984), generally known as the class of FGT (or P_a) indices is defined by the following general formula:

$$P_a = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z - y_i}{Z} \right)^a$$

where Z is the poverty line; y_i , the income or expenditure of the i^{th} poor person or household; n , total population; q , the number of persons lying below the poverty line. Thus, this index computes the income gap of each poor person or household relative to the poverty line, raises it to the power a , and sums up (these gaps) for all the poor persons or households. P_a is simply the population mean of an individual poverty measure, which taken on the value $\left(1 - \frac{y_i}{Z}\right)$ for the poor and 0 for the non poor.

If $a=0$, from the formula of P_a , we get $P_0 = \frac{q}{n}$ which is the ratio of poverty

When $\alpha = 1$, we get the following index: $P_1 = \frac{q}{n} \left(\frac{Z - \bar{y}_i}{Z} \right)$, where \bar{y}_i is the average income or expenditure of the poor. This index measures the poverty gap and is called the depth of poverty index..

If $\alpha = 2$, the P_a index becomes: $P_2 = \frac{1}{n} \sum_{i=1}^q \left(1 - \frac{y_i}{Z} \right)^2$

This equation (index) yields the severity of poverty

Inequality Measures

In this paper, inequality is measured with household data gathered by ECAM I and ECAM II surveys. Two measures are used to capture inequality in the distribution of expenditures, namely, the Gini index, and generalized entropy (GE) indices.

The Gini Index

This index is very useful in providing an overall indication of the extent of inequality and its evolution over time.

$$G = \frac{1}{2n^2 m} \sum_i \sum_j |Y_i - Y_j|$$

Where, m is the average income of total population; Y_i and Y_j the incomes of individuals $i, j; n$, the total number of household, and $Y_1 > Y_2 > \dots > Y_n$.

où, est le revenu moyen de la population totale, Y_i and Y_j les revenus des individus, j^{32} , n dénote le nombre total de ménages et, $Y_1 > Y_2 > \dots > Y_n$

The Generalized Entropy (GE) Index

In general, these indices aim at explaining total inequality in a distribution of inequalities within socio-economic groups, and of inequality between these groups. Their general expression is given by the following formula:

$$GE(\mathbf{a}) = \frac{1}{\mathbf{a}(\mathbf{a}-1)} \left[\frac{1}{N} \sum_{i=1}^N \left(\frac{y_i}{\bar{y}} \right)^{\mathbf{a}} - 1 \right]$$

Where, n is the number of individuals in a sample; y_i is the income of individual i , \bar{y} , the arithmetic average of all incomes, and \mathbf{a} is the parameter representing the weight given to welfare levels at different parts of the distribution. Alpha (\mathbf{a}) is the aversion to inequality parameter. The most commonly used values of \mathbf{a} are 0 (sensitive at the lower end of the distribution), 1 (sensitive to middle of the distribution), and 2 (sensitive to the upper part of the distribution). When $\mathbf{a} = 0$, $GE(0)$ is called Theild's L index; when $\mathbf{a} = 1$, $GE(1)$ is called Theild's T index. The GE 's values range from 0 to infinity, and when $GE = 0$, this implies that no inequality exists in the income distribution. It is useful to note that a zero income for any individual in the distribution means that the computed of $GE(0)$ is infinite. In this paper, the GE index used are $GE(0)$ and $GE(1)$.

APPENDIX B

Table 1: Cameroon – Macroeconomic Indicators 1990-1995

	1990- 94	1995- 2000	2000- 2005	2001	2002	2003	2004	2005
	(Variation en pourcentage, sauf indication contraire)							
Economic growth and Prices								
Real GDP	-1.8	4.7	3.8	4.5	4.0	4.0	3.7	2.6
Oil	-4.0	1.4	-6.5	-4.0	-4.4	-5.5	-9.3	-9.7
Non Oil	-1.1	4.9	4.8	5.5	4.9	4.9	4.9	3.5
Consumer prices (period average)	7.2	3.1	1.9	3.7	2.8	0.6	0.2	0.2
Gross domestic Investment	15.0	16.8	19.4	20.3	19.8	18.3	18.9	19.6
	(Variation en pourcentage, sauf indication contraire)							
Public Finance								
Total Revenues (except grants)	13.5	15.5	16.6	18.2	16.2	16.0	15.2	17.2
Oil Revenues	3.8	3.9	4.7	5.9	4.9	4.1	3.9	4.9
Non Oil Revenues	9.7	11.6	11.8	12.3	11.3	11.9	11.3	12.3
Total expenditures	20.5	17.3	15.6	16.8	15.7	15.3	16.0	14.3
Current expenditures	17.3	14.8	13.2	13.6	13.6	13.2	14.0	11.8
Of which: current expenditures (except interests)	11.7	9.2	10.9	10.5	10.9	10.9	12.1	10.3
Expenditures linked to the HIPC initiative	0.0	0.0	0.4	0.0	0.4	0.2	0.5	0.8
Expenditures on equipment	3.2	2.3	2.3	2.9	2.4	2.1	2.0	2.3
Overall budget position (commitment basis, except grants)	-7.0	-2.9	0.9	1.2	0.5	0.7	0.8	3.0
Of which: non oil primary position	2.7	11.1	-0.9			-0.7	-2.0	0.0
	(Variation en pourcentage, sauf indication contraire)							
Balance of Payments								
Current position (except grants, a % of GDP)	-1.7	-2.3	-3.3	-1.7	-6.4	-2.6	-3.6	-2.0
Imports Volume	-6.2	-8.0	-0.5	-0.5	-0.7	6.9	1.5	-4.6
Imports Volume	-4.1	12.4	6.4	18.2	1.9	-0.6	11.7	0.7
Terms of trade	3.4	3.6	0.7	-9.7	0.0	-0.8	-1.3	15.1
Real effective exchange rate (2000 = 100)	88.4	67.5	70.9	66.3	68.7	72.6	72.8	69.4

Source : Fonds monétaire international (2006) : Cameroun — Initiative renforcée en faveur des pays pauvres très endettés — Document du point d'achèvement, et initiative d'allègement de la dette multilatérale, Mai.

Tableau 2 : Dépenses totales des ménages au Cameroun Moyenne dépenses mensuelles pour les ménages urbains et ruraux

Milieu	Moyenne des dépenses (en 1000 CFA francs)		Nombre de ménage (Part en %)	
	1996	2001	1996	2001
Urbain	397.953	497.896	0.3491	0.3117
Rural	254.123	280.233	0.6509	0.6883
Ensemble	310.494	356.315	100	100
Ratio (U/R)	1.566	1.777		

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAMII

Tableau 3 : Dépenses totales moyennes par équivalent adulte des ménages au Cameroun pour des différentes strates

Strates	Moyenne des dépenses (en 1000 CFA francs)		Nombre de ménage (Part en %)	
	1996	2001	1996	2001
Yaoundé	400.396	565.112	0.0832	0.0779
Douala	480.552	522.947	0.0989	0.0803
Autres villes	368.144	444.292	0.1381	0.1536
Rurale Forêt	196.350	276.335	0.1151	0.1499
Rurale Hauts Plateaux	262.890	279.146	0.3030	0.2700
Rurale Savane	290.217	283902	0.2617	0.2683
Ensemble	310.494	356.315	100	100
Ratio (U/R)	1.566	1.777		

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAMII

Tableau 4: Evolution des indices de pauvreté selon le sexe du chef de ménage

Milieu	1996			2001		
	Indices de pauvreté			Indices de pauvreté		
	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)

Urbain	0.4139 (0.0324)	0.1471 (0.0141)	0.0690 (0.0079)	0.2211 (0.0115)	0.0631 (0.0039)	0.0266 (0.0020)
Rural	0.5957 (0.0487)	0.2152 (0.0265)	0.1010 (0.0173)	0.4988 (0.0183)	0.1832 (0.0122)	0.0928 (0.0090)
Cameroun	0.5335 (0.0339)	0.1909 (0.0181)	0.0902 (0.0117)	0.4020 (0.0151)	0.14 09 (0.0086)	0.0708 (0.0060)
	Contributions			Contributions		
	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)
Urbain	0.2709 (0.0426)	0.2658 (0.0473)	0.2614 (0.0544)	0.1912 (0.0164)	0.1554 (0.0163)	0.1326 (0.0172)
Rural	0.7291 (0.0426)	0.7342 (0.0473)	0.7386 (0.0544)	0.8088 (0.0164)	0.8446 (0.0163)	0.8674 (0.0172)
Cameroun	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 5 : Evolution des indices de pauvreté monétaire selon les strates du chef de ménage

Strate	1996			2001		
	Indices de pauvreté			Indices de pauvreté		
	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)
Yaoundé	0.4897 (0.0557)	0.1846 (0.0244)	0.0891 (0.0133)	0.1832 (0.0205)	0.0509 (0.0066)	0.0213 (0.0033)
Douala	0.3736 (0.0702)	0.1342 (0.0358)	0.6331 (0.0210)	0.1855 (0.0165)	0.0484 (0.0054)	0.0195 (0.0030)
Autres Villes	0.3629 (0.0464)	0.1219 (0.0185)	0.0552 (0.0096)	0.2623 (0.0198)	0.0784 (0.0069)	0.0336 (0.0033)
Rural Forêt	0.7247 (0.0417)	0.2667 (0.0161)	0.1239 (0.0114)	0.5540 (0.0399)	0.2089 (0.0282)	0.1089 (0.0235)
Rural Hauts- plateaux	0.6291 (0.0531)	0.2289 (0.0439)	0.1091 (0.0307)	0.5075 (0.0277)	0.2089 (0.0206)	0.1123 (0.0157)
Rural Savane	0.4442 (0.0942)	0.1517 (0.0356)	0.0720 (0.0204)	0.4569 (0.0329)	0.1405 (0.0143)	0.0624 (0.0080)
Cameroun	0.5335 (0.0339)	0.1909 (0.0181)	0.0902 (0.0117)	0.4020 (0.0151)	0.14 09 (0.0086)	0.0708 (0.0060)
	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)
Yaoundé	0.0785 (0.0143)	0.0812 (0.0170)	0.0822 (0.0197)	0.0397 (0.0056)	0.0314 (0.0051)	0.0266 (0.0052)
Douala	0.0604 (0.0159)	0.0657 (0.0226)	0.0691 (0.0280)	0.0448 (0.0055)	0.0332 (0.0048)	0.0271 (0.0051)
Autres Villes	0.1049 (0.0247)	0.0944 (0.0244)	0.0873 (0.0252)	0.1068 (0.0114)	0.0908 (0.0115)	0.0789 (0.0119)
Rural Forêt	0.1707 (0.0277)	0.1722 (0.0331)	0.1596 (0.0369)	0.1993 (0.0320)	0.2136 (0.0422)	0.2258 (0.0560)
Rural Hauts- plateaux	0.3653 (0.0586)	0.3866 (0.0742)	0.4030 (0.0925)	0.3312 (0.0340)	0.3877 (0.0436)	0.4226 (0.0548)

Rural Savane	0.2202 (0.0492)	0.1999 (0.0504)	0.1988 (0.0585)	0.2783 (0.0336)	0.2433 (0.0349)	0.2190 (0.0373)
Cameroun	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 6 : Evolution des indices de pauvreté monétaire selon le sexe du chef de ménage

	1996			2001		
	Indices de pauvreté			Indices de pauvreté		
Sexe	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)
Homme	0.5442 (0.0364)	0.1914 (0.0195)	0.0954 (0.0127)	0.4060 (0.0158)	0.1424 (0.0085)	0.0695 (0.0059)
Femme	0.4555 (0.0507)	0.1687 (0.0236)	0.0820 (0.0134)	0.3870 (0.0231)	0.1431 (0.0133)	0.0773 (0.0092)
Cameroun	0.5335 (0.0339)	0.1909 (0.0181)	0.0902 (0.0117)	0.4020 (0.0151)	0.1409 (0.0086)	0.0708 (0.0060)
	Contributions			Contributions		
	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)	Contribution (C_0)	Contribution (C_1)	Contribution (C_2)
Homme	0.9105 (0.0173)	0.9042 (0.0205)	0.9051 (0.0231)	0.8279 (0.0114)	0.8194 (0.0143)	0.8121 (0.0177)
Femme	0.0895 (0.0173)	0.0958 (0.0205)	0.0949 (0.0231)	0.1721 (0.0114)	0.1806 (0.0143)	0.1879 (0.0177)
Cameroun	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)	1 (0.0000)

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 7 : Evolution des indices de pauvreté selon le secteur d'activité du chef de ménage

	1996			2001		
	Indices de pauvreté			Indices de pauvreté		
Sexe	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)	Incidence (P_0)	Intensité (P_1)	Sévérité (P_2)
Actifs Occupés	0.5280 (0.0204)	0.1842 (0.0148)	0.0857 (0.0172)	0.4093 (0.0114)	0.1441 (0.0071)	0.0712 (0.0271)
Chômeurs	0.6251 (0.0171)	0.2651 (0.0163)	0.1408 (0.0193)	0.3184 (0.0103)	0.0958 (0.0075)	0.0439 (0.0287)

Inactifs	0.5412 (0.0332)	0.2273 (0.0034)	0.0900 (0.0051)	0.3742 (0.0128)	0.1419 (0.0010)	0.0748 (0.0052)
Cameroun	0.5335 (0.0339)	0.1909 (0.0181)	0.0902 (0.0117)	0.4020 (0.0151)	0.1409 (0.0086)	0.0708 (0.0060)

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 8 Taux d'alphabétisation selon les strates en 1996 (%)

Strates	Homme			Femmes			Pauvres
	Pauvres	Non pauvres	Ensemble	Pauvres	Non pauvres	Ensemble	
Yaoundé	94,4	95,4	94,9	92,5	93,6	93,1	93,5
Douala	98,6	97,6	98,0	91,8	91,8	91,8	95,6
Autres Villes	58,8	82,3	75,3	37,7	71,3	60,1	47,7
Rurale Forêt	72,7	80,2	75,0	52,0	58,9	54,1	61,3
Rurale Hauts plateaux	76,8	80,9	78,6	55,8	53,8	55,0	65,0
Rurale Savane	40,9	39,0	39,8	15,9	15,6	15,7	27,6
Cameroun	70,0	74,2	72,2	49,5	54,4	52,0	59,0

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 9 Taux d'alphabétisation selon les strates en 2001 (%)

Strates	Homme			Femmes			Pauvres
	Pauvres	Non pauvres	Ensemble	Pauvres	Non pauvres	Ensemble	
Yaoundé	92,6	97,2	96,3	90,5	92,9	92,5	91,6
Douala	96,3	97,4	97,2	88,2	91,0	90,5	92,6
Autres Villes	74,8	90,4	86,7	57,7	78,1	73,2	66,0
Rurale Forêt	85,6	89,7	87,6	66,7	69,4	68,0	75,3
Rurale Hauts plateaux	79,1	83,9	81,7	59,7	67,9	64,0	68,3
Rurale Savane	35,6	36,2	36,0	11,7	14,9	13,6	22,7
Cameroun	70,6	80,5	77,0	51,1	64,9	59,8	60,1

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 10 : Taux net de scolarisation selon les strates en 1996 (%)

Strates	Garçons			Filles			Pa
	Pauvres	Non pauvres	Ensemble	Pauvres	Non pauvres	Ensemble	
Yaoundé	91,0	95,0	92,8	91,7	93,2	92,4	9
Douala	91,8	95,9	94,1	97,6	96,1	96,7	9
Autres Villes	48,7	76,4	63,9	51,3	79,2	66,8	50
Rurale Forêt	89,0	100,0	91,4	84,2	100,0	87,8	80
Rurale Hauts plateaux	91,4	89,4	90,8	94,0	95,3	94,4	90
Rurale Savane	54,5	39,1	46,7	18,2	25,3	21,8	30
Cameroun	81,0	76,7	79,3	73,1	73,1	73,1	70

Source : calculé par l'auteur à partir des données des enquête ECAMI et ECAM II

Tableau 11 Taux net de scolarisation selon les strates en 2001 (%)

Strates	Garçons			Filles			Pa
	Pauvres	Non pauvres	Ensemble	Pauvres	Non pauvres	Ensemble	
Yaoundé	93,5	94,9	94,6	87,7	95,4	94,0	
Douala	92,7	96,7	95,9	93,4	97,1	96,4	
Autres Villes	77,3	91,9	87,4	76,0	88,4	84,7	
Rurale Forêt	86,1	89,3	87,3	86,6	87,6	87,0	
Rurale Hauts plateaux	89,1	95,3	91,7	86,3	94,9	90,1	
Rurale Savane	52,9	57,2	55,1	34,9	39,5	37,0	
Cameroun	77,6	84,6	81,3	70,1	81,3	76,2	

Source : calculé par l'auteur à partir des données des enquête ECAMI et ECAM II

Tableau 12 : Dépense moyenne d'éducation par élève en FCFA

<i>Strates</i>	<i>Pauvres</i>		<i>Non pauvres</i>		<i>Ensemble</i>	
	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>
<i>Yaoundé</i>	22 570	36 764	66 635	109 450	45 738	97 232
<i>Douala</i>	22 707	36 758	65 338	106 681	49 338	94 269
<i>Autres Villes</i>	13 481	23 193	32 124	72 856	26 947	61 273
<i>Rurale Forêt</i>	14 751	16 611	19 614	41 889	16 037	27 348
<i>Rurale Hauts plateaux</i>	8 224	15 520	20 729	46 658	12 387	30 446
<i>Rurale Savane</i>	4 758	6 782	10 532	12 284	7 635	9 629
<i>Cameroun</i>	12 503	17 369	35 629	67 561	22 700	48 046

Source : calculé par l'auteur à partir des données des enquête ECAMI et ECAM II

Tableau 13 : Part des dépenses d'éducation dans les dépenses totales du ménage (%)

<i>Strates</i>	<i>Pauvres</i>		<i>Non pauvres</i>		<i>Ensemble</i>	
	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>
<i>Yaoundé</i>	8,1	7,6	6,5	7,4	6,8	7,5
<i>Douala</i>	8,2	6,8	5,2	6,4	5,5	6,4
<i>Autres Villes</i>	2,9	5,4	3,8	6,5	3,6	6,4
<i>Rurale Forêt</i>	6,1	4,9	3,6	4,4	4,9	4,5
<i>Rurale Hauts Plateaux</i>	4,5	4,9	3,9	5,5	4,1	5,3
<i>Rurale Savane</i>	0,9	1,1	0,6	0,9	0,7	1,0
<i>Cameroun</i>	4,8	4,3	3,9	5,6	4,1	5,4

Source : calculé par l'auteur à partir des données des enquête ECAMI et ECAM II

Tableau 14 : Taux de consultation dans les structures informelles de santé par strates

<i>Strates</i>	<i>Pauvres</i>		<i>Non pauvres</i>		<i>Ensemble</i>	
	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>
<i>Yaoundé</i>	28,4	26,6	8,1	18,4	16,6	19,9
<i>Douala</i>	32,2	30,9	17,4	16,7	22,9	19,3
<i>Autres Villes</i>	25,1	23,6	12,9	14,5	15,9	16,9
<i>Rurale Forêt</i>	21,2	36,4	9,3	19,9	16,6	29,0
<i>Rurale Hauts plateaux</i>	40,2	23,8	14,4	17,4	26,7	20,7
<i>Rurale Savane</i>	36,1	35,6	10,5	34,2	17,5	34,9
<i>Cameroun</i>	32,2	30,0	13,0	20,9	20,8	24,5

Source : calculé par l'auteur à partir des données des enquête ECAMI et ECAM II

Tableau 15 : Dépenses moyennes de santé par tête en FCFA

<i>Strates</i>	<i>Pauvres</i>		<i>Non pauvres</i>		<i>Ensemble</i>	
	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>	<i>1996</i>	<i>2001</i>
<i>Yaoundé</i>	9 940	9 722	31 609	50 513	20 984	45 071
<i>Douala</i>	8 895	10 540	38 037	59 321	27 165	54 010
<i>Autres Villes</i>	6 086	8 282	18 174	33 209	13 788	27 117
<i>Rurale Forêt</i>	6 473	8 197	20 996	21 707	10 466	15 435
<i>Rurale Hauts plateaux</i>	7 341	8 752	21 828	27 071	12 713	17 858

Rurale Savane	1 156	3 745	7 684	9 385	4 785	6 151
Cameroun	6 044	6 937	19 903	32 178	12 521	22 036

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 16 : Part des dépenses de santé dans les dépenses totales en %

Strates	Pauvres		Non pauvres		Ensemble	
	1996	2001	1996	2001	1996	2001
Yaoundé	8,5	6,4	6,8	8,4	7,1	8,4
Douala	8,1	7,0	7,3	9,8	7,4	9,8
Autres Villes	5,7	6,4	5,8	7,6	5,8	7,5
Rurale Forêt	7,9	7,6	10,9	7,4	9,3	7,4
Rurale Hauts plateaux	10,0	8,4	10,5	8,6	10,3	8,5
Rurale Savane	1,7	3,5	4,3	3,4	3,7	3,4
Cameroun	7,3	6,2	7,2	7,9	7,2	7,6

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 17 : Evolution de l'accessibilité des ménages à certaines commodités de l'habitat selon le milieu de résidence et le niveau de vie (en %)

		1996			2001		
		Pauvres	Non pauvres	Ensemble	Pauvres	Non pauvres	Ensemble
Urbain	Eau potable de boisson	63,9	82,1	76,9	74,6	88,5	86,2
	Electricité d'éclairage	66,4	84,7	79,4	74,3	91,0	88,2
	Matériaux définitifs pour les murs	33,4	60,9	53,0	35,7	55,1	51,8
	Matériaux définitifs pour le toit	99,6	99,7	99,6	98,6	99,7	99,5
	Matériaux définitifs pour le sol	74,0	90,7	85,9	73,6	91,3	88,4
	Gaz de cuisine	4,1	30,2	22,7	11,0	39,3	34,6
Rural	Eau potable de boisson	22,2	32,1	27,4	26,8	34,4	31,3
	Electricité d'éclairage	11,7	18,6	15,3	17,5	27,4	23,4
	Matériaux définitifs pour les murs	4,2	12,7	8,6	6,0	12,1	9,6
	Matériaux définitifs pour le toit	71,1	64,7	67,7	63,8	68,0	66,3
	Matériaux définitifs pour le sol	23,7	37,7	31,1	19,3	34,2	28,2
	Gaz de cuisine		0,5	0,3	0,1	3,2	1,9
Cameroun	Eau potable de boisson	32,1	52,6	44,2	35,4	57,7	50,5
	Electricité d'éclairage	24,7	45,7	37,0	27,8	54,7	46,1
	Matériaux définitifs pour les murs	11,1	32,4	23,7	11,3	30,6	24,4

	<i>Matériaux définitifs pour le toit</i>	77,9	79,0	78,5	70,1	81,6	77,9
	<i>Matériaux définitifs pour le sol</i>	35,7	59,4	49,6	29,1	58,8	49,2
	<i>Gaz de cuisine</i>	1,0	12,7	7,9	2,0	18,7	13,4

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

Tableau 18 : Évolution de l'inégalité selon le milieu de résidence du chef de ménage

Milieu	GE(0)		GE(1)		Gini	
	1996	2001	1996	2001	1996	
<i>Urbain</i>	0.3201 (0.0285)	0.2874 (0.0155)	0.3458 (0.0403)	0.3358 (0.0237)	0.4360 (0.0191)	
<i>Contribution relative</i>	0.4160 (0.0526)	0.3060 (0.0207)	0.5189 (0.0664)	0.4669 (0.0247)		
<i>Rural</i>	0.2030 (0.0420)	0.2373 (0.0144)	0.2247 (0.0494)	0.2376 (0.0114)	0.3491 (0.03491)	
<i>Contribution relative</i>	0.4921 (0.0802)	0.5578 (0.0258)	0.3980 (0.0977)	0.4040 (0.0298)		
<i>Ensemble</i>	0.2686 (0.0265)	0.2928 (0.0142)	0.3056 (0.0312)	0.3236 (0.0171)	0.4023 (0.0196)	
<i>Intra-groupe</i>	0.9203	0.9602	0.9165	0.9582		
<i>Inter-groupe</i>	0.0797 (0.0022)	0.0398 (0.0009)	0.0835 (0.0017)	0.0418 (0.0006)		

Note : les valeurs entre parenthèses indiquent les écarts types.

Source : calculé par l'auteur à partir des données des enquêtes ECAMI et ECAM II

APPENDIX C

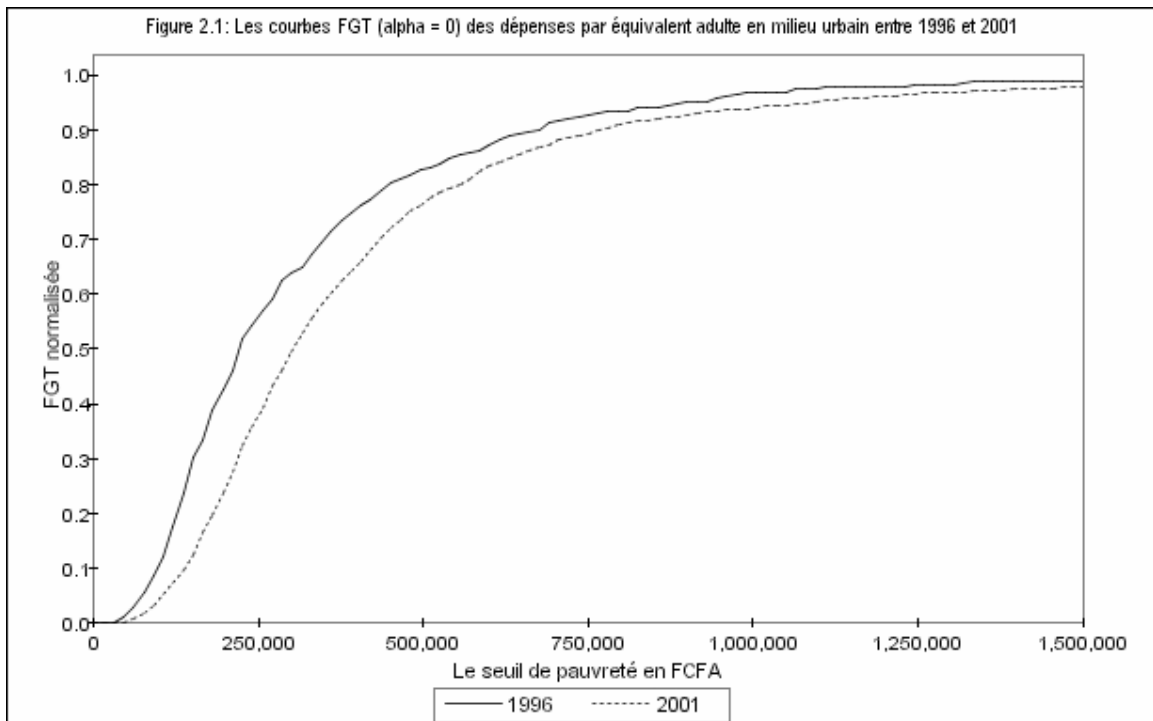
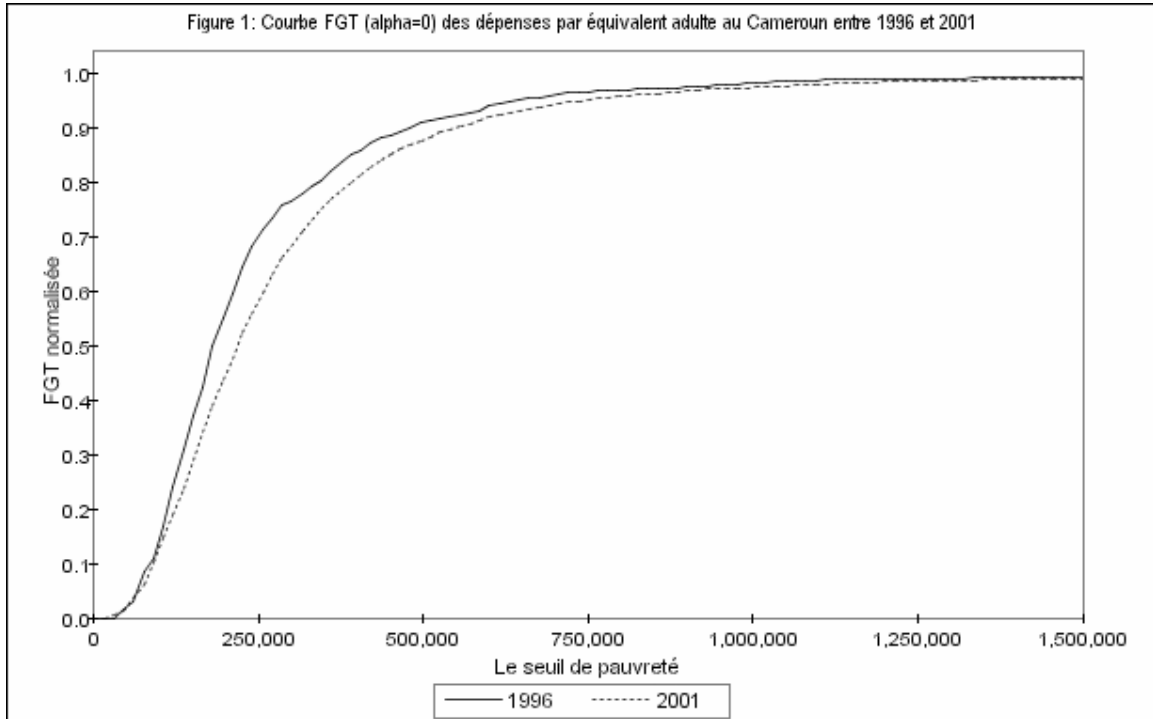


Figure 2.2: Les courbes FGT (alpha =0) ds dépenses par équivalent adulte en milieu rural entre 1996 et 2001

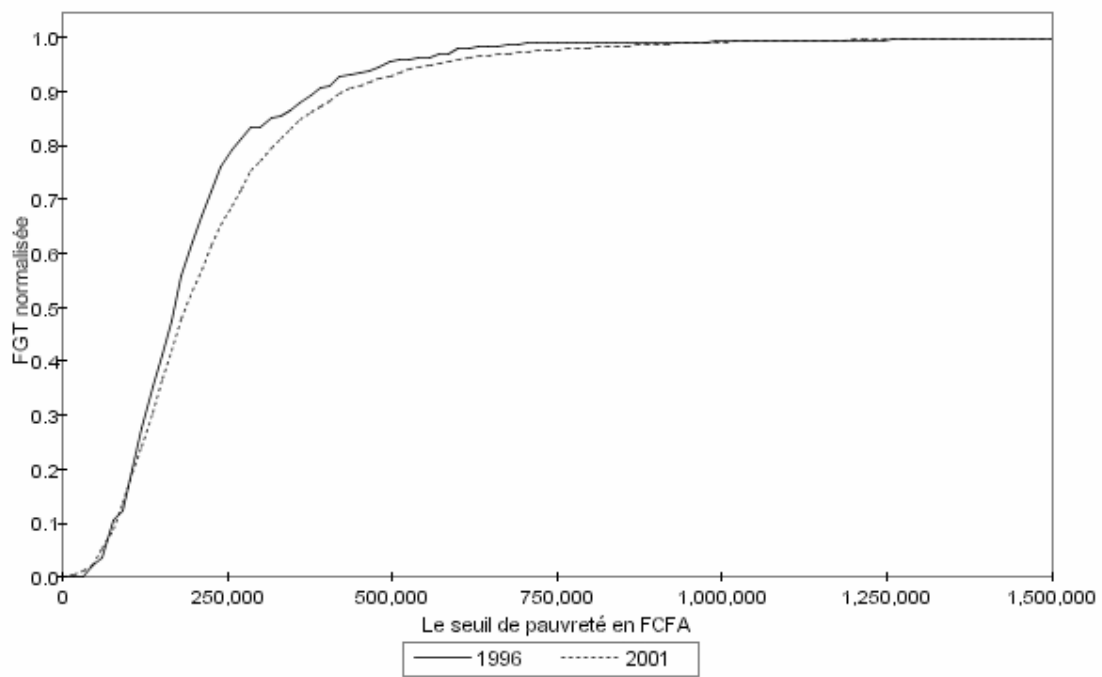
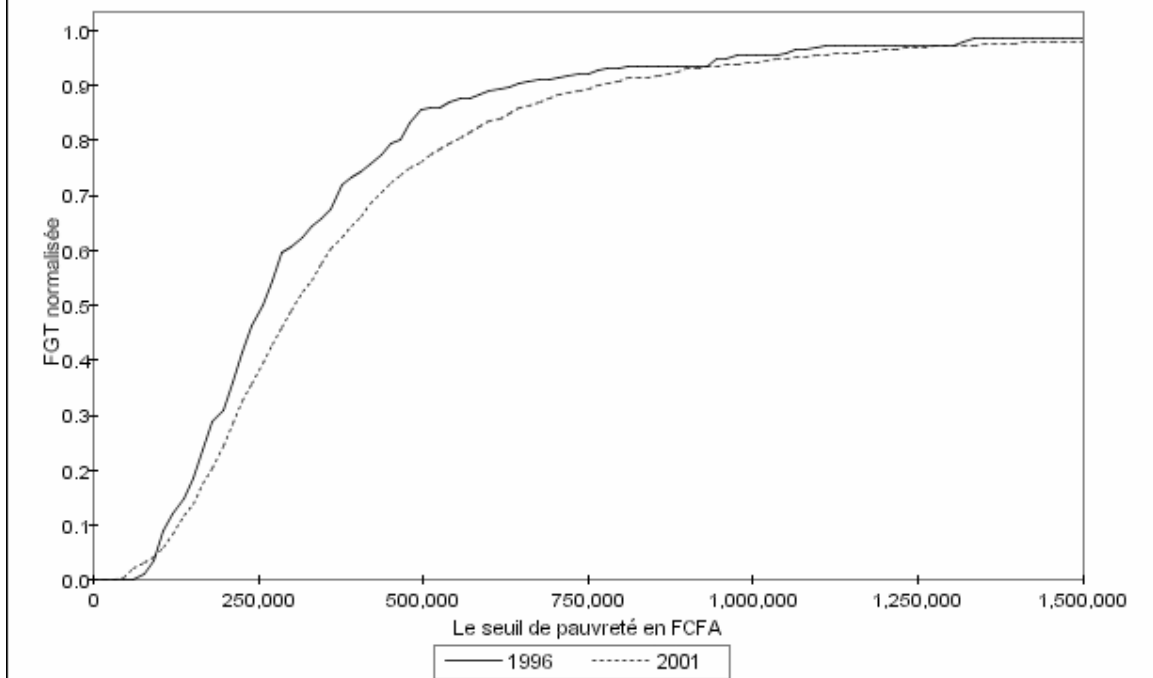


Figure 3.1: Les courbes FGT (alpha = 0) des dépenses par équivalent adulte chez les actifs occupés entre 1996 et 2001



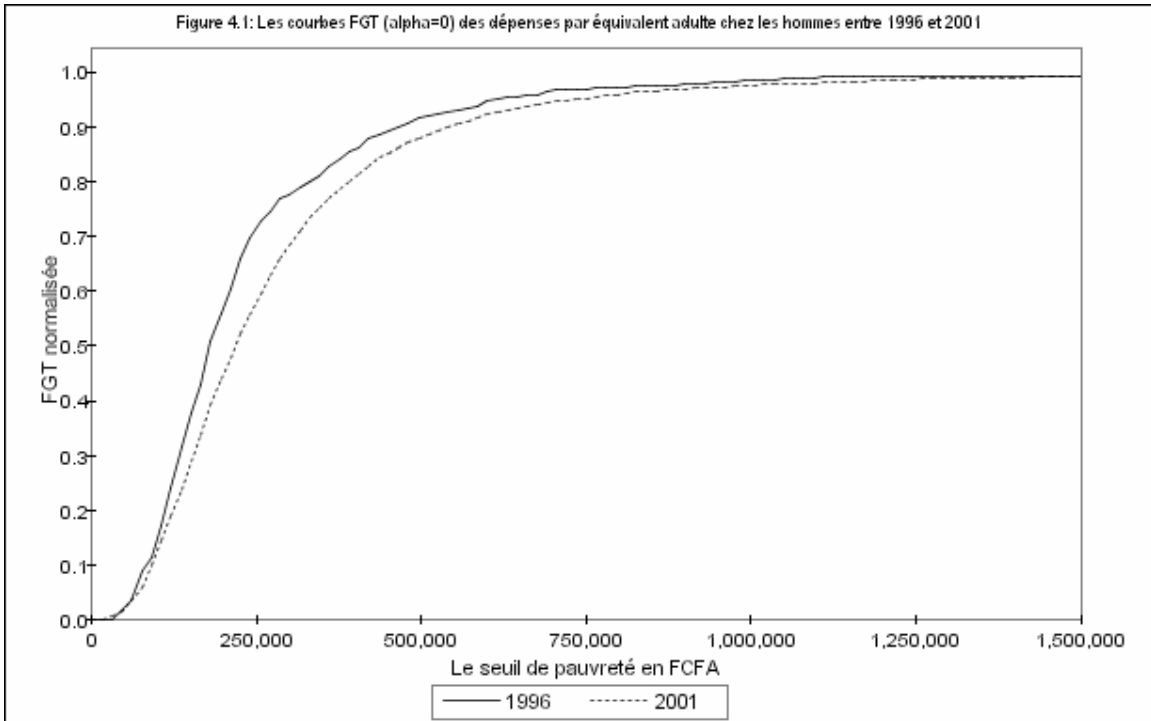
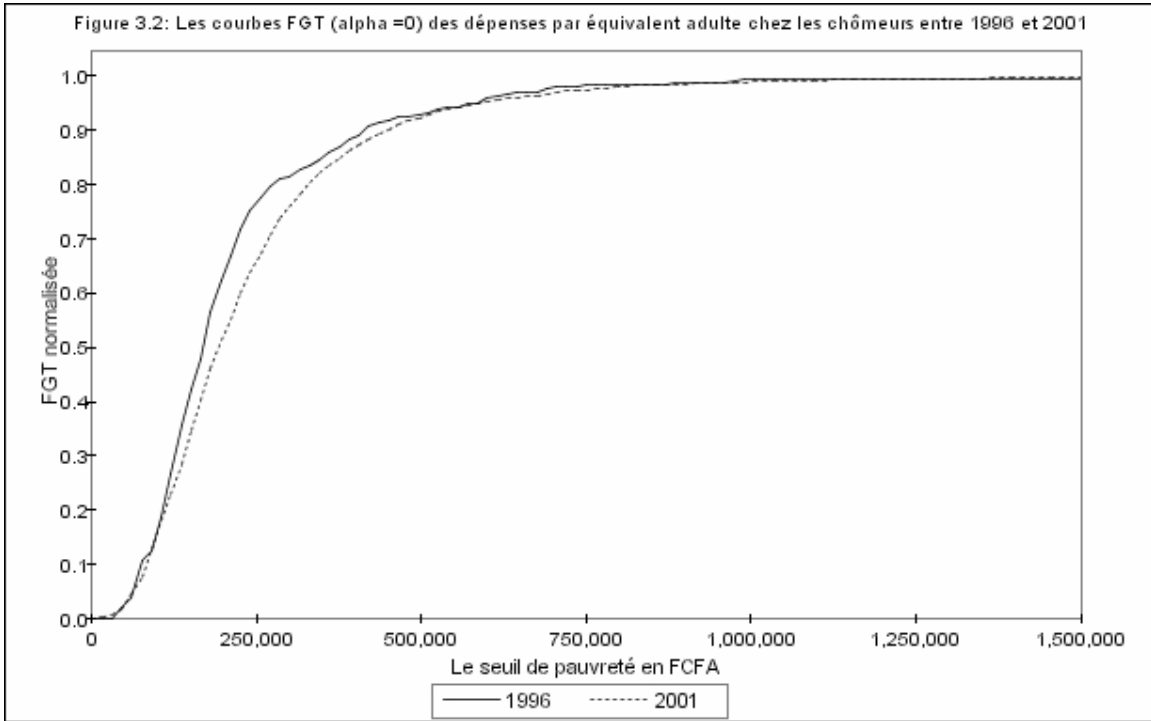


Figure 4.2: Les courbes FGT (alpha=0) des dépenses par équivalent adulte chez les femmes entre 1996 et 2001

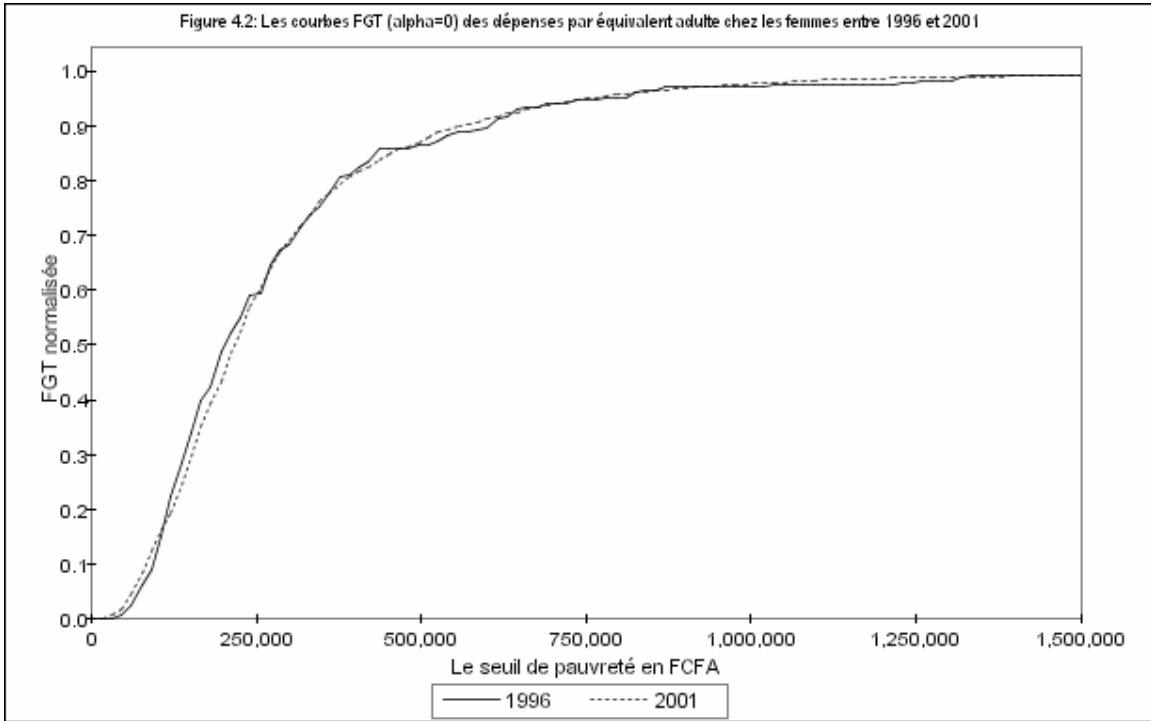


Figure 5: Les courbes de Lorenz des dépenses par équivalent adulte pour le Cameroun 1996-2001

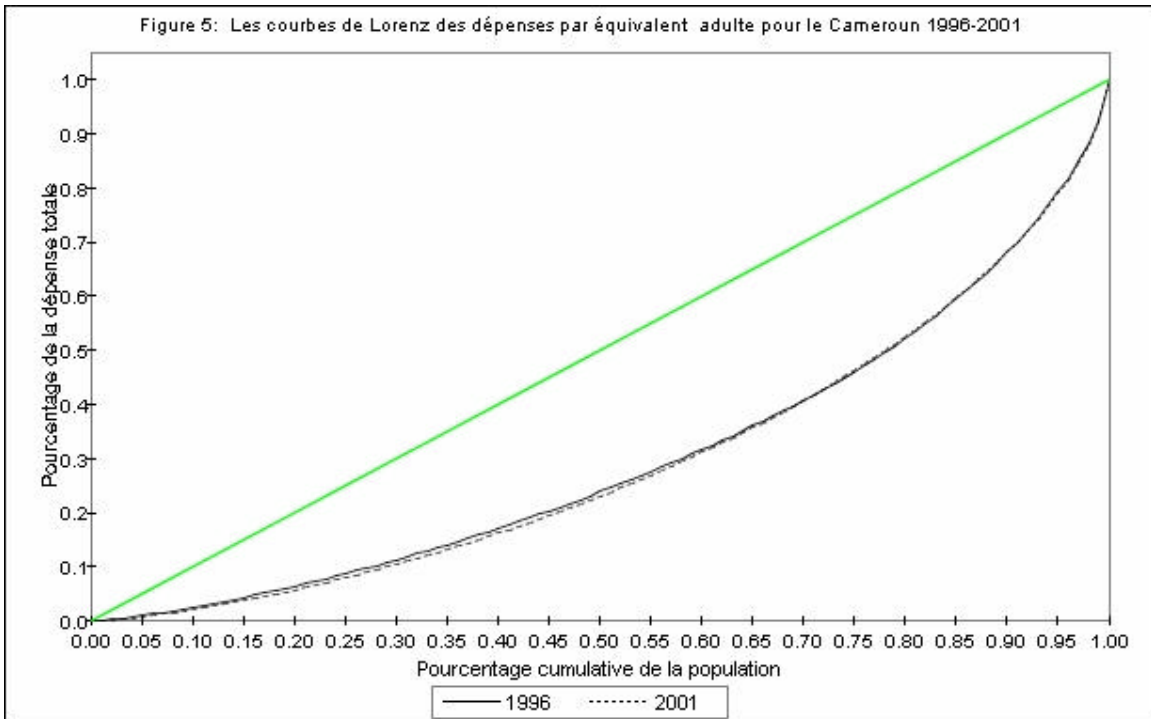


Figure 6.1: Courbes de Lorenz des dépenses par équivalent adulte pour le milieu urbain 1996 - 2001

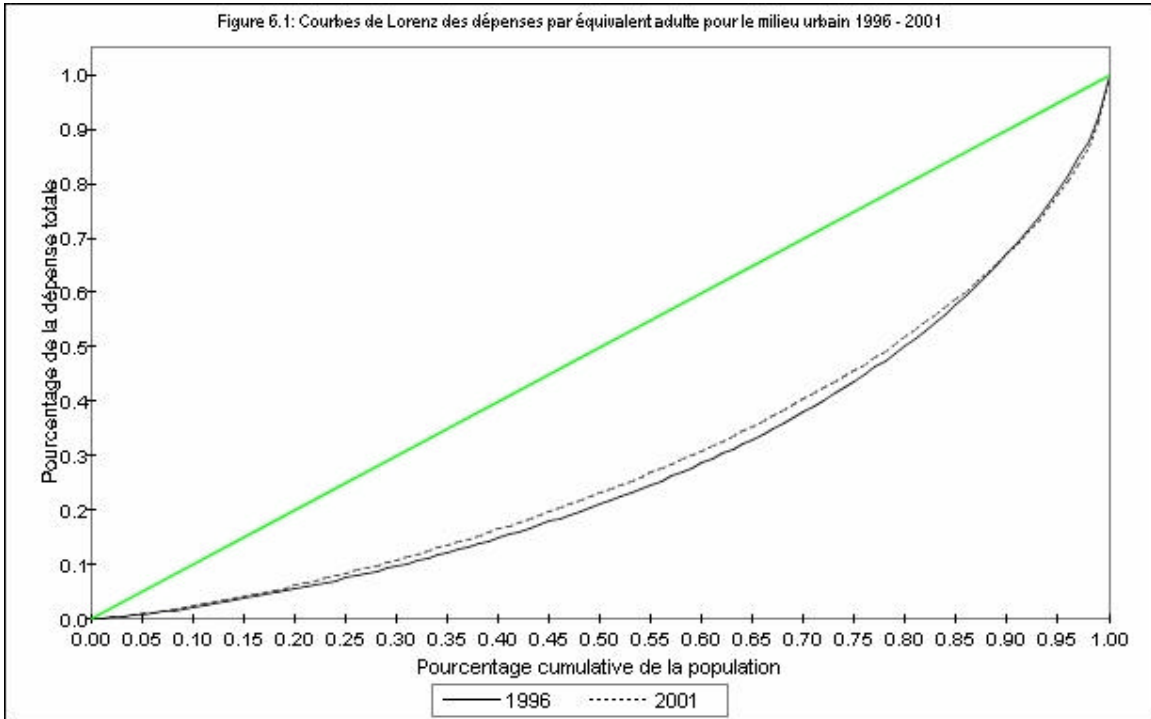


Figure 6.2: Courbes de Lorenz des dépenses totales par équivalent adulte pour le milieu rural 1996 - 2001

