Pro Poor Growth in Cameroon

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Abstract

The purpose of this paper is to analyze the relationship between economic growth, poverty and income distribution in Cameroon, using both the data derived from three Cameroonian household surveys and the Poverty Equivalent Growth Rate (PEGR) methodology developed by Kakwani et al. (2004), The study found that economic growth in Cameroon was pro poor over the period 1996–2007, which suggests that instead of increasing the economic growth rate alone, the poverty equivalent growth rate should also be maximized to achieve the poverty reduction objective, meaning that on the one hand, the growth rate should be boosted, and on the other, the distribution of income should also be concurrently improved.

A decomposition of changes in poverty using the Kakwani (1997) approach reveal that the growth component dominates the redistribution component in the reduction of poverty. This suggests that the fall in absolute poverty over the survey period may be attributed to an increase in average household income, and not to the redistributive policies of the government.

Keywords	JEL code
Economic growth, pro poor growth, poverty, inequality, decomposition, Cameroon	*D63, I32, O49*

INTRODUCTION

The reduction of poverty has become a major preoccupation of development policy. The level of poverty depends both on income and on income inequality. Thus, changes in absolute poverty may be considered as a result of two factors: firstly, an increase in the income of the population, keeping income distribution constant, leads to a reduction in poverty and vice-versa; secondly, a reduction in income inequality while keeping growth in average income fixed has the same impact. As a result, changes in the levels of poverty may be attributed not only to a growth effect relative to changes in average income, but also to inequality originating from changes in the levels of equality.

However, the relationship between poverty, income inequality and economic growth is not so simple. The issue is complex and interdependent. A view that is largely held in the area of economic development is that the benefits of economic growth spread automatically through all the segments of society. This is the well-known « trickle down » hypothesis which was dominant in the 1950s and 1960s. Similarly, the results derived from a number of recent studies (see for instance, Dollar and Kraay, 2002; Christiaensen et. al., 2002; White and Anderson, 2001; and World Bank, 2000) suggest that economic growth by and large reduces poverty. These studies, which are based on cross-sections of countries, have been criticized because they only depict an average image of the relationship between growth and poverty. When big differences between countries are considered in terms of averages, the results are potentially deceptive because the specific experiences of a country may largely be different (Kakwani et al., 2008).

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The relationship between growth and inequality has also been the object of intense debates. Kuznets (1955) found an inverted-U relationship between per capita income and inequality based on country cross-section data: as per capita income increases, inequality first worsens and then improves afterwards. The main driving force of this hypothesis was presumed to be the structural change which had occurred because of changes in jobs, employments, etc. from the poor and less productive traditional sector of the economy towards the more productive and differentiated modern sector. This hypothesis was maintained by a number of studies, including those of Kravis (1960), Oshima (1962), Adelman and Morris (1971), Paukert (1973), Ahluwalia (1976), Robinson (1976), and Ram (1988).

To date, and with better quality databases and tests on individual countries, the U-inverted curve of Kuznet constitutes a challenge and seems to have vanished (see for instance, Anand and Kanbur 1984, Fields 1989, Oshima 1994, Deininger and Squire 1996). For example, Deininger and Squire (1996) have carried out very detailed tests of hypotheses and confirmed the fact that there was no evidence proving the existence of a U-inverted curve for countries taken individually.

Authors such as Deininger and Squire (1996), Ravallion and Chen (1997), and Dollar and Kraay (2002) have found that growth has no impact on inequality. On the other hand, Kaldor (1956), Li and Zou (1998), and Forbes (2000) maintain that inequality leads to growth. But Alesina and Rodrick (1994) show that inequality adversely affects economic growth.

Datt and Ravallion (1992) decompose changes in poverty into growth and redistribution components between two survey periods. Kakwani (1997) also decomposes changes in poverty into growth and redistribution components between two survey periods. Both of these approaches provide information concerning changes in poverty between both periods.

By and large, the relationship between growth and poverty is complex and is determined by the level of, and changes in inequality. Pro poor growth deals with the interrelations between growth, poverty and inequality. Although there is no consensus on the definition or the measure of pro poor growth, this issue has attracted a lot of attention both in the academic world and among the practitioners of development. The debate on pro poor growth originates from the pro income distribution arguments of Chenery and Ahluwalia which were advocated in the 1970s. Pro poor growth was also implicit in the expression "broad-based growth" used in the 1990 Report on Development in the World by the World Bank. Even though the concept of pro poor growth was not yet defined at that time, it was subsequently enlarged to refer to the concept of pro poor growth during the 1990s. The basic papers on pro poor growth examine how economic growth affects the poor, how the benefits of economic growth are distributed and how much the poor profit from the benefits of growth (Ravallion, 2004; Kakwani and Son, 2008; Klasen, 2008; Son and Kakwani, 2008).

The present study analyzes the pro poor growth in Cameroon, that is to say, the relationship between growth, poverty and income using the data derived from the Cameroonian household surveys ECAM1, ECAM2 and ECAM3 that were conducted by the National Institute of Statistics (NIS) of Cameroon respectively in 1996, 2001 and 2007. The relationship between growth, inequality and poverty in Cameroon is analyzed following the methodology developed by Kakwani and Khandker (2004). This methodology proposes the use of the Poverty Equivalent Growth Rate (PEGR) which considers not only the magnitude of growth in itself, but also the degree to which the poor benefit from the growth process. Moreover, in order to measure the specific impacts of growth and income distribution on the reduction of poverty, a decomposition of changes in poverty is carried out over the periods 1996–2001, 2001–2007 and 1996–2007, using the decomposition of changes in poverty developed by Kakwani (1997). The use of this methodology leads us to a better understanding of the effects of growth and distribution which may help to formulate the necessary developmental policy that may eradicate poverty in the country.

After the severe economic crisis which occurred at the end of the 1980s, Cameroon witnessed an economic recovery and then an acceleration of growth during the second half of the 1990s, followed

by a slowdown in the rhythm of growth during the first half the years 2000. It would be interesting to find out how much of the proportional benefits of growth befell the poor.

The rest of the paper is organized as follows. After the Introduction, Section 1 summarizes different pro poor growth definitions and measures, Section 2 explains the data and the methodology used in the study, Section 3 deals with the background of Cameroon's economy, while Section 4 displays the results. Finally, last Section concludes the study and provides some policy recommendations based on the paper's findings.

1 "PRO POOR GROWTH": CONCEPTS AND MEASURES
1.1 Concept of Pro Poor Growth

To examine whether growth is pro poor first requires the clarification of the concept of the pro poorness character of growth which generally refers to the idea that the poor benefit more from growth than from a certain pre-defined reference.

Although it is largely used by economists interested in questions of development and poverty reduction, the term "pro-poor growth" is the subject of much controversy related to its definition. We may distinguish two rival definitions of the "pro poor growth" concept in the recent literature: an absolute definition and a relative definition.

According to the absolute definition, growth is said to be "pro-poor" if it reduces absolute poverty (Ravallion, 2004; Ravallion and Chen, 2003). This definition simply says that any increase in average income which results in a decrease in poverty is "pro-poor", even if growth is accompanied by an increase in income inequality. On the other hand, the relative definition put more emphasis on the effects of growth on the distribution of income, that is to say the changes in inequality during the growth process (Baulch and McCulloch, 1999; Kakwani and Pernia, 2000; Son, 2004). Thus, according to this second definition, growth may be considered as being "pro poor" if it reduces relative inequality, i.e. since the distributive changes accompanying growth proportionally favour the poor more than the non poor (the incomes of the poor must grow at a higher rate than those of the non poor).

Both of these definitions of the "pro-poor" growth concept present certain limitations. In effect, Lopez (2004) and Osmani (2005) note that to assess the more or less favourable character of growth for the poor, one should not be interested solely in the nature of the growth process, that is, in its impact on the distribution of income, as suggested by the preceding relative definition. It is also necessary to take into account the reduction of poverty in absolute terms caused by the level of the aggregated growth rate, as recommended by the absolute definition presented above. In other words, the concept of "pro-poor" growth must take into consideration both the magnitude of growth and the way in which the fruits of this growth are distributed among the poor and the non poor. Thus, from this perspective, Kakwani, Khandker and Son (2004) have developed some new measures of "pro-poor growth" out which present the major interest of combining both of these definitions.

1.2 Measuring Pro Poor Growth

In the literature, several measures of pro poor growth are proposed in relation to definitions of pro poor growth. Four pro poor growth measures are used in the analysis as follows:

The first measure of pro poor growth is proposed by Ravallion and Chen (2003), and it is called "the growth incidence curve (GIC)", which is an interesting tool used to measure the impact of growth on poverty. It is defined in the following manner: on the horizontal axis we note the different percentiles of the distribution of income (consumption). As a consequence, at the 50th percentile, the growth incidence curve (GIC) will indicate the growth rate of median income. It is clear that if the curve lies above the horizontal axis at all points up to a certain percentile p*, we can conclude that poverty has fallen when it is measured through the poverty ratio, and when the poverty line is not greater than

p* (see Atkinson, 1987). Let us note that the area under the growth incidence curve up to the poverty ratio will yield total growth in the incomes of the poor during the period being analyzed. Ravallion and Chen (2003) have therefore defined the "pro poor growth rate" as the average growth rate of the poor. They also have shown that the pro poor growth rate is equal to the change in the Watts poverty index by unit of time. It is clear that there is a difference between this average growth rate of the poor and the average growth rate of the income (consumption) of the poor.

The second approach to pro poor growth is the one developed by Kakwani and Pernia (2000). These authors first define what they call the total poverty elasticity of growth, that is, the percentage change in poverty when growth in income (consumption) is equal to 1%. They then define a second elasticity which measures the percentage change in poverty that is observed when growth in income (consumption) is equal to 1%, and there is no change over time in relative inequality.

For Kakwani and Pernia (2000), the pro poor growth index (PPGI) is equal to the ratio of both of these elasticities, and they conclude that growth is pro poor if this PPGI ratio is larger than one.

Let us note that if growth is negative, it will be defined as being pro poor in relative terms if the relative loss in income due to negative growth is smaller for the poor than for the non poor, that is to say, if the PPGI ratio is smaller than one.

The third approach to pro poor growth is that of Kakwani and Son (2002) who define what they call the "poverty equivalent growth rate" (PEGR). The PEGR refers to the growth rate which will result from the same level of poverty reduction as the one observed at present, assuming that there was no change in inequality during the growth process. Growth will consequently be considered as being pro poor if the PEGR is larger than the present growth rate. If the PEGR is positive but smaller than the present growth rate, this implies that growth is accompanied by an increase in inequality, but the reduction in poverty is still observed. In such a case, Kakwani et al. (2004) speak of a "trickle down" process in which the poor receive proportionally less of the benefits of growth than the non poor. Finally, if the PEGR is negative, we have the case where positive economic growth leads to an increase in poverty.

In a more methodological section (Section 2) we will make a detailed presentation of this approach to pro-poor growth analysis.

The fourth approach to pro poor growth is that developed by Son (2004). This author proposes what she calls a poverty growth curve (PGC), which is defined as follows: let $g(p)$ be the growth rate of the average income (consumption) of the lowest p percent of the population. By reporting $g(p)$ on the vertical axis and p on the horizontal axis, we obtain the poverty growth curve developed by Son (2004).

It should be clear that if $g(p) > 0$ $(g(p) < 0)$ for all the ps, poverty has decreased (increased) during the period under study.

If $g(p)$ is greater than the average growth rate for all $p < 100\%$, it may be concluded that growth is pro poor. If $g(p)$ is positive for all $p < 100\%$ but smaller than the average growth rate, it may therefore be concluded that growth reduced poverty, but that inequality also increased during the period. Such a situation may be referred to as "trickle down growth", which is a situation in which growth reduces poverty, but the benefits of growth are smaller for the poor than for the non poor.

Finally, if $g(p)$ is negative for any $p < 100\%$, we face a situation in which the increase in inequality more than « compensates » for growth, so that the net effect of growth is to increase poverty, a situation which corresponds to what has been called "immiserizing growth".

2 DATA AND METHODOLOGY
2.1 Poverty Measures
As measures of poverty, we use three poverty measures of the Foster-Greer-Thorbecke (1984, FGT) class of poverty measures, namely: the incidence of poverty P_0, the poverty gap index P_1, and the severity of poverty index P_2. These three indexes can be expressed in a general form and differ from one another

by the different weights attributed to the distance between the incomes of the poor and the poverty line. P_0 allocates a weight equal to all the incomes of the poor, whereas P_1 and P_2 allocate an increasingly greater weight to the incomes of the poor that are distant from the poverty line.

The general formula of the FGT-poverty indexes is:

$$P_\alpha = FGT\,(\alpha) = \frac{1}{n}\sum_{i=1}^{q}\left(\frac{z - y_i}{z}\right)^{\alpha},$$

$$(1)$$

where n = population; q = population above the poverty line; yi = income of person i; z = the poverty line and α = the parameter of aversion to poverty. For $\alpha = 0$, we have P_0 which is the incidence of poverty; for $\alpha = 1$ we obtain P_1 which is the poverty gap index, and for $\alpha = 2$, we have the severity of poverty index P_2 (see Ravallion (1994) for a detailed description of these poverty indexes).

2.2 Inequality Measures

As a measure of inequality, this paper will use the Gini index and three inequality indexes of the class of generalized entropy GE (α) with the parameter α fixed at 0, 1 and 2.

The general formula of the class of generalized entropy is:

$$GE\,(\alpha) = \frac{1}{\alpha^2 - \alpha}\left\{\frac{1}{n}\sum_{i=1}^{n}\left(\frac{y_i}{\bar{y}}\right)^{\alpha} - 1\right\},$$

$$(2)$$

where n = population, y_i = income of person i, $\bar{y}$ = average income, α = parameter of aversion to inequality.

The three indexes derived from Formula (2) are also known respectively as the mean log-deviation GE (0), Theil's index GE (1), and half of the coefficient of variation squared GE (2). They possess sensitivities that are different from the differences in the different parts of the distribution, with GE (0) being the most sensitive to differences in the lowest part of the income distribution and GE (2) being the most sensitive to the high values of the income distribution.[2]

2.3 Decomposition of Changes in Poverty

The analysis of the decomposition of poverty that is used in this study is the decomposition of Kakwani (1997). Before presenting this decomposition technique, let us first note that there exist several approaches that offer ways to break down changes in poverty into growth and redistribution components (Jain and Tendulkar, 1990; Kakwani and Subbarao, 1990; Datt and Ravallion, 1992; Kakwani, 1997; Shorrocks, 1999). The methodologies used in these approaches are very similar, and the differences between them may be explained by the period of reference considered, the treatment of a residual which may emerge from certain decompositions, and the poverty measures used.

Datt and Ravallion (1992) decompose a change in the poverty measure between two periods into components of growth, redistribution and a residual term. The residual exists when the poverty measure is not additively decomposable into average income and distribution.[3]

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[2] The formal definitions and the reviews of different properties of inequality indexes may be found in Cowell (2000), and Jenkins and Van Kerm (2009).

[3] The residual is due to the fact that the decomposition is sensitive to the choice of the period of reference. Given that the initial year and the final year are the two possible choices of the period of reference, the residual disappears if either average income or distribution remains unchanged over both periods.

Datt and Ravallion (1992) have in fact found that the residual may be quite large, and this is a serious limitation on this decomposition approach. To overcome this limitation, Kakwani (1997) derives an axiomatic approach in which the residual term is removed by a simple average procedure. The decomposition by Kakwani (1997) of poverty measures into growth and redistribution components is the following:[4]

$$\Delta P = P_2 - P_1 = G + D \,, \tag{3}$$

$$G = \frac{1}{2}\left[\left[P\left(\frac{z}{\mu_2}, L_1\right) - P\left(\frac{z}{\mu_1}, L_1\right)\right] + \left[\left(\frac{z}{\mu_2}, L_2\right) - \left(\frac{z}{\mu_1}, L_2\right)\right]\right], \tag{4}$$

$$D = \frac{1}{2}\left[\left[P\left(\frac{z}{\mu_1}, L_2\right) - P\left(\frac{z}{\mu_1}, L_1\right)\right] + \left[\left(\frac{z}{\mu_2}, L_2\right) - \left(\frac{z}{\mu_1}, L_1\right)\right]\right], \tag{5}$$

where, ΔP = change in poverty, G = growth component, D = distribution component, P_t is a poverty measure at time t, z is the poverty line, μ_t is average income at time t, L_t is the vector of parameters which completely describes the Lorenz curve at time t, where $t = 1, 2$.

2.4 The Poverty Equivalent Growth Rate (PEGR)

To analyze the relationship between growth, inequality and poverty in Cameroon, we use the pro poor growth methodology developed by Kakwani and Khander (2004). This methodology proposes a poverty equivalent growth rate (PEGR) which considers not only the magnitude of growth in itself, but also the degree to which the poor benefit from the growth process.

Kakwani et al. (2004, 2008) define the poverty equivalent growth rate (PEGR) denoted by γ^*, as the rate of growth that will provide the same decline in the poverty ratio like the actual real growth rate γ if the growth process had a zero change in inequality (i.e. when everybody in society receives the same proportional benefits of growth). The real proportional change in poverty is given by $\delta\gamma$, where δ is the growth elasticity of poverty. If growth were distribution-neutral (i.e. when inequality did not change), then the rate of growth γ^* would consequently have a proportional reduction in poverty equal to $\eta\gamma$, where η is the elasticity of neutral relative growth in poverty derived by Kakwani (1983), which measures the percentage change in poverty when there is a 1% growth in the average income of society, provided the growth process does not change relative inequality (i.e. when everybody in society receives the same proportional benefits of growth).

Thus, the PEGR denoted by γ^*, may be expressed as follows:

$$\gamma^* = \left(\frac{\delta}{\eta}\right)\gamma = \phi\gamma \,, \tag{6}$$

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[4] Shorrocks (1999) arrives at the same conclusion as Kakwani through a different reasoning. He applies Shapley's rule (Shapley (1953) – a concept borrowed from cooperative game theory) to a range of decompositions of poverty and inequality, including the one we are using in this paper, and develops a general framework for this type of analyses, thus providing a mathematical foundation for this framework and deriving the application formulas to each case. By comparing the formulas proposed by Kakwani (1997) and Shorrocks (1999) for the case of two periods, it is evident that they are one and the same. In fact, both of these authors refer to Datt and Ravallion (1992), and with different methodologies they arrive at the same conclusion that there is no reason for the residual term to exist. Consequently, we will use the formula of Formula (3) to decompose changes in poverty into growth and distribution effects.

where $\phi = \dfrac{\delta}{\eta}$ is the pro poor index derived by Kakwani and Pernia (2000). According to both of these authors, growth will be pro poor if $\phi > 1$, thus implying that the poor benefit proportionally more than the non poor. Consequently, the growth process occurs with redistribution in favour of the poor. When $0 < \phi < 1$, growth cannot be considered as being strictly pro poor (due to the fact that growth takes place with redistribution adversely affecting the poor) even if there is no reduction in the poverty ratio. If $\phi < 0$, economic growth will lead to an increase in poverty. Similarly for the PEGR index, growth will be pro poor (anti-poor) if γ^* is greater (smaller) than γ. When $0 < \gamma^* < \gamma$, the growth process shows, as a consequence, an increase in inequality, but the incidence of poverty will be deceasing. This situation is defined by Kakwani, Khandker and Son (2003) as a "trickle-down" in which the poor receive proportionally less benefits stemming from growth than the non poor. It is also possible for the PEGR to be negative with a positive economic growth leading to an increase in poverty. This situation is similar to what Bhagwati (1988) defines as "immiserising" growth. This situation may occur when inequality increases with the result that the positive effects of growth are more than compensated by the adverse impact of increasing inequality.

2.5 The Data

This paper uses the data derived from three Cameroonian household surveys, namely ECAM1, ECAM2 and ECAM3 conducted by the National Institute of Statistics (NIS) in 1996, 2001 and 2007, respectively.[5] These three ECAM surveys are representative at the national level and provide information on 1 731, 10 992 and 11 391 survey households for the years 1996, 2001 and 2007, respectively. These surveys also provide detailed information notably on all the sources of household consumption expenditures (such as the non-food retrospective household expenditures, daily household expenditures), the socio-demographic characteristics and the composition of the household, including employment, migration, education and health.

In this study, we have chosen household consumption expenditure per adult equivalent as welfare indicator. Consumption expenditure is the main welfare indicator commonly used in developing countries, while income plays a more important role in studies carried out on developed countries. In this paper, the emphasis put on consumption expenditures will capture the living conditions among the low income groups better.

Since households have different sizes in terms of the number of children and adults, we use the distribution of total expenditures per adult equivalent as welfare indicator. Besides, several researchers require the use of expenditures per adult equivalent as welfare indicator to take into account the economies of scale and the different costs of children (Deaton and Muellbauer, 1986; Deaton and Paxson, 1998;

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[5] The ECAM1 survey is a national survey whose sample comprises about 1 700 households selected randomly by a two-step probability in urban regions, and three-step probability in rural regions. Two types of questionnaires were designed, one type for cities and large cities, and the other type for the rest of the country. These questionnaires were administered to selected households, and they comprised 11 sections, several of which could be used to analyze poverty and income distribution in Cameroon. The ECAM2 and ECAM3 surveys covered the whole national territory and gathered a random sample of about 12 000 households, each. They were particularly aimed at the construction of a poverty profile for Cameroon at the national level and at the levels of the ten provinces of the country, as well as for the two largest cities of Douala and Yaoundé (respectively the economic and political capitals of the country) each of the latter being considered as separate strata, while each of the ten provinces was divided into two strata, one rural and the other urban. The sampling basis of the two surveys was that of the second General Census of the Population and the Habitat (RGPH) of April of 1987, which was updated to take account of its dated nature. Two types of draws were made according to residence area: a two-degree draw in the major cities of Douala and Yaoundé, and a three-degree draw with equal probability in the semi-urban sub-strata, and the rural strata of the provinces.

Lanjouw and Ravallion, 1995). The adult equivalent scale used by the National Institute of Statistics (NIS) is 1 for each adult in the household and 0.5 for each child in the household.

Several adjustments were made in the initial data before estimating inequality, poverty and the poverty equivalent growth rate (PEGR), notably by making the values of consumption expenditures for the years 1996 and 2007 comparable to those of the year 2001. The poverty line used in the present study is the official 2001-poverty line calculated by the National Institute of Statistics (NIS) of Cameroon, using the basic needs costs method which consists of determining a food poverty threshold first, and then adding to it an amount corresponding to the non-food basic needs. This poverty line takes into account the regional variations of the cost of living.

3 BACKGROUND OF CAMEROON'S ECONOMY

To analyze the factors and forces affecting growth, poverty and inequality in Cameroon, it is necessary to examine the economic conditions during the period under study 1996–2007.

The Cameroonian economy recorded a sustained average annual growth rate of 5% up to 1978, a performance which was mainly attributed to agricultural exports. The discovery and exploitation of oil in 1978 brought this growth rate to 7% up to 1986, a situation which helped boost the contributions of the oil sector respectively to 20% of GDP, to 44% of government revenues, and to 54% of the country's exports. However, shortly after this period, the country was suddenly stricken by a serious economic crisis which was to last for a decade from 1987 to 1997, and whose underlying causes most particularly included the combined effects of a significant reduction in oil production, a fall in the prices of the country's traditional exports, and a rise of about 40% in the effective real exchange rate of the CFA Franc. The combination of these factors led perforce to a fall of 40% in GDP per head and to serious macroeconomic imbalances, which in turn led to the increasing recourse by the government to the external financing necessary to redress the public finance balance and shift the economy back to its sustained growth path.

To reverse this trend, public authorities put in place at the beginning of 1987, a series of domestic measures aiming at reducing government expenditures and economic reform programs with the support of the international community.[6] These programs were essentially concerned with policies whose objectives were to reduce the budget deficit through an increase in tax rates, cuts in the payroll and subsidies to public enterprises, the restoration of external competitiveness centred on the reduction of the costs of factors of production, and the restructuring of public enterprises. In this context, the government introduced drastic cuts in civil servants' salaries of about 50% in 1993, a measure which led to a considerable deterioration of the socioeconomic conditions of civil servants. Nevertheless, in the absence of monetary adjustment, the results obtained after the implementation of these programs remained quite unsatisfactory.

In January 1994, the devaluation of the CFA Franc relative to the French Franc by 50% in nominal terms took place, and the implementation of additional trade and fiscal reforms were initiated at the regional level by the Economic and Monetary Community of Central African States (EMCCA),[7]

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[6] The crisis and the initial responses to it led to a severe economic depression and to an increase in the incidence of poverty according to the World Bank Report (1995). This report pointed out that in 1990, real GDP fell and stood at 20% under its 1985 level. Moreover, per capita income plummeted by about 50% between 1986 and 1993. The loss in competitiveness also led to the loss of export markets for agricultural products, thus making it difficult for food and industrial products to compete against imports; this loss of export markets also resulted into a decrease in the demand for labour in the domestic markets for exchangeable and non exchangeable goods, with adverse effects on employment and the living standards of populations residing in both rural and urban areas. Likewise, the slowdown in economic activity combined with the slackening of tax collection to paralyze the capacity of the State to provide social services, thus aggravating the impoverishment of Cameroonian citizens.

[7] This Organization is mostly known under its French acronym CEMAC for *Communauté Economique et Monétaire d'Afrique Centrale*.

of which Cameroon is a member. These measures provided Cameroon with the opportunity to reverse its socio-economic decline. The country thus witnessed some positive growth after the devaluation of the CFA Franc, but it was not until the middle of 1996, after a few failures in stabilization and adjustment efforts,[8] that the government showed a strong commitment to implement in-depth reforms.

During the period 1997–2000, economic programs implemented by the government included radical economic reforms whose objectives were to enhance the productive potential of the economy: firstly, to reinforce the functioning of the market economy notably by privatizing public enterprises and liberalizing markets; and secondly, to improve the environment for the development of the private sector through sector-wide reforms in the areas of energy, forestry, transports, and finance, and to reinforce public administration through the reforms of public services and of the judicial system. These reforms continued during the period 2000–2003, when they were supplemented by policies designed to accelerate the reduction of poverty by developing a poverty reduction strategy and by improving the delivery of social services.[9]

The successful implementation of these reforms, combined with the CFA franc devaluation vis-à-vis the French Franc, led to macroeconomic stability and to an increase in average real GDP growth rates of about 5% over the period 1997–2000, and 3.5% over the period 2001–2007. Per capita GDP increased by nearly 2.2% during the period 1996–2001 and by 1.3% over the period 2001–2007 (WDR, 2011). Exports and most particularly non oil exports responded positively to improvements in price competitiveness so that in 2002, export volumes jumped to 50% above their 1993 level. However, despite some diversification in export products, oil, wood, aluminium, and a reduced number of agricultural products continued to account for nearly 70% of Cameroon's exports (Word bank, 2005).

After this brief description of the Cameroon's economic development during the 1996–2007 period, it is important to mention that, there exist a limited number of empirical studies on the levels and changes in monetary poverty and inequality in Cameroon (Lynch, 1991; Dubois and Amin, 2000; Fambon, 2006; Baye, 2006; Fambon et al., 2000; Fambon, 2005; Fambon, 2010; National Institute of Statistics (NIS), 2002; and National Institute of Statistics (NIS), 2008). These studies analyze either the poverty profile in 1983 or the evolution of poverty over the sub-periods 1978–1996, 1983–1996, 1996–2001 and 2001–2007. None of these studies tackles the analysis of changes in poverty and inequality over the long period between 1996 and 2007 simultaneously using the data of the last three Cameroonian household surveys ECAM1, ECAM2, and ECAM3, which are consistent and comparable.[10]

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[8] It is opportune to note at this point that following the devaluation of the CFA Franc in January 1994, Cameroon received from the IMF in March 1994, a standby credit to support the reform efforts. This programme was interrupted because of poor performances in the areas of public finance and structural adjustment. However, the reforms resumed in September 1995, following the signature of a new standby IMF credit facility. The objective was to take advantage of the gains in competitiveness resulting from the monetary adjustment of January 1994. The first review of this programme by the IMF was positive, but the performance criteria of subsequent reviews were not met. The IMF, the World Bank, and the Cameroon government then put in place an IMF staff-monitored programme covering the period extending from July 1st to December 30th, 1996.

[9] In 2003, Cameroon adopted a poverty reduction strategy (PRS), the implementation of which was supported by the international community (see Government of Cameroon, 2003). The results obtained in terms of improvements in the macroeconomic framework made it possible for Cameroon to reach the decision and completion points of the HIPC Initiative respectively in 2003 and 2006, to increase the level of investment in the priority sectors identified in the Poverty Reduction Strategy Paper (PRSP), and to undertake structural reforms particularly in the public utilities sectors. Most government programs were implemented according to sequences defined in the PRSP, which enabled the government to bring to completion the six Growth and Poverty Reduction Facilities (GPRFs) funded by the IMF, and to receive the support of the other development partners in the implementation of its poverty reduction strategy (see IMF, 2006).

[10] For a comprehensive literature review on poverty in Cameroon, see for instance, Fambon (2013).

4 RESULTS AND DISCUSSION

4.1 Poverty Trends in Cameroon

Table 1 presents an overall view of the evolution of poverty in Cameroon and according to the residence area of the household head over the period 1996–2007.

Table 1 Monetary Poverty Trends over the Period 1996–2007

Poverty index	1996	2001	2007
P_0	0.5327	0.4022	0.3988
P_1	0.1908	0.1414	0.1231
P_2	0.0900	0.0698	0.0503

Source: Computed by the Author from ECAM1, ECAM2 and ECAM3 Survey data

At the national level, we note that monetary poverty decreased over the period 1996–2001, and remained almost stable between 2001 and 2007. Actually, between 1996 and 2001 all the poverty measures, namely P_0, P_1, and P_2 indicate a non negligible reduction of this phenomenon. The percentage of individuals in the Cameroonian population who lived in poverty in 1996 (about 53%) decreased considerably, and amounted approximately to 40% five years later in 2001. This reduction of poverty at the national level did not only concern a fall in the number of poor individuals, but it did also concern the decrease in the indicators of the measures of the depth and severity of poverty, which assign a greater weight to those who are poorer. In fact, the poverty gap index witnessed a 5 percentage points reduction during the period going from 19% in 1996 to 14% in 2001, while the poverty gap index squared (P2) also decreased by 2 percentage points over the same period.

On the other hand, we note the quasi-stability of poverty over the period 2001–2007, characterized by a marginal decrease in the incidence, depth and severity of poverty. In fact, the poverty ratio only declined from 40.2% in 2001 to 39.9% in 2007. This result reveals that the government of Cameroon did not take advantage of the macroeconomic stability and the opportunities offered during this period, notably the resources engaged when the country reached the decision and completion points of the Highly Indebted Poor Countries (HIPC) Debt Relief Initiative of the IMF.

The depth of poverty also remained stable over the period, going from 12.8% in 2001 to 12.3% in 2007. In other words, individuals who remained poor in 2007 did not witness the substantial fall in their consumption deficit relative to the year 2001. This result thus shows that the poor did not draw any benefits from the effects of economic growth during this period, in order for the average gap between their level of consumption and the poverty threshold to witness a significant reduction. Finally, as to the index of the severity of poverty, it only decreased from 5.55% in 2001 to 5.03% in 2007.

4.2 Trends of Inequality in Cameroon

Table 2 below presents the evolution of the inequality of total household expenditures per adult equivalent over the period 1996–2007, using the Gini coefficient and three inequality indices belonging to the entropy class of inequality measures.

Examination of the data in Table 2 above shows that at the national level, the inequality of total expenditures per adult equivalent increased between 1996 and 2001, whatever inequality measure is considered. The Gini coefficient displays a less important increase in inequality than the one given by the inequality measures of the entropy class of inequality measures. $GE(0)$ shows the strongest percentage increase in inequality, therefore indicating that an increase in inequality is produced when a higher weight is attached to the lower tail of the expenditures distribution.

Table 2 Indices of Income Inequalities in Cameroon (1996–2007)

Inequality index	1996	2001	2007
Gini	0.4062	0.4078	0.3896
GE(0)	0.2722	0.2906	0.2477
GE(1)	0.3174	0.3163	0.2787
GE(2)	0.5442	0.2787	0.4449

Source: Computed by the Author from ECAM1, ECAM2 and ECAM3 Survey data

However, the decrease in inequality at the national level is observed over the period 2001–2007. We note a fall in the different inequality measures considered. The Gini index which amounted to 0.404 in 2001 decreased to 0.390 in 2007. The three entropy inequality measures witnessed more important falls than that of the Gini coefficient over this sub-period. Definitely, it may be said that the low rate of economic growth registered over the period 2001–2007 was not accompanied by an increase in inequalities.

4.3 Poverty Equivalent Growth Rates (PEGRs)

Table 3 presents the actual growth rates of consumption expenditures per adult equivalent and the poverty equivalent growth rates (PEGRs) in Cameroon. Over the period 1996–2001, the PEGR of the poverty ratio was higher than the average annual growth rate of expenditures per adult equivalent (15.8% for Cameroon taken as a whole), which as a result had a stronger reduction in poverty than the one indicated by the actual growth rate. This result indicates that the growth process in Cameroon was pro poor in the sense that the poor benefited proportionally more from it than the non poor. On the other hand, over the same period, the PEGRs of the poverty gap, and the index of the severity of poverty were lower than the average annual growth rate of expenditures per adult equivalent. These results imply that during the period 1996–2001, the impact of economic growth in Cameroon was not beneficial to the ultra-poor.

As for the period 2001–2007, the PEGRs were systematically higher than the average annual growth rate of the expenditures per adult equivalent (4.1% for Cameroon taken as a whole). This indicates that the growth process in this country was pro poor in the sense that it was proportionally more beneficial to the poor than to the non poor. The PRGR of the severity of poverty index was higher than those of the poverty gap ratio and the incidence of poverty. This implies that during the period 2001–2007, growth in Cameron had a more beneficial impact on the ultra poor. Pro poor growth occurred because the country witnessed a decline in inequality as estimated respectively by the Gini index, GE (0) and GE (1). The Gini index decreased from 40.78% in 2001 to 38.96% in 2007 and GE (0) fell from 29.06% in 2001 to 24.77% in 2007, while GE (1) declined from 31.63% in 2001 to 27.87% in 2007 (see Table 2).

Over the period 1996–2007, the PEGRs were largely higher than the average annual growth rate of expenditures per adult equivalent (20.5% for Cameroon taken as whole). This indicates that the growth process in the country was pro poor in the sense that it was proportionally more beneficial to the poor than to the non poor. The PEGR of the index of the severity of poverty is smaller than those of the poverty gap ratio and the incidence of poverty. This implies that during the period 1996–2007, the impact of economic growth in Cameroon was more beneficial to the poor than to the ultra-poor.

Cameroon recovered economic growth during the period 1994–2007, after witnessing a period of economic crisis which began in 1987. More important still, our results have shown that its growth process, which started during the period 1996–2007 was pro poor, thus benefiting more proportionally to the poor than to the non poor. This may be attributed to the reforms undertaken by the government which were combined with the devaluation of the CFA franc relative to the French franc that took place in January 1994.

Table 3 Poverty Equivalent Growth Rate (PEGR)

Actual growth rate		Poverty Equivalent Growth Rate (PEGR)		
		Headcount ratio P_0	Poverty gap P_1	Squared poverty gap P_2
1996–2001	0.158033	0.247099	0.151158	0.114622
2001–2007	0.041264	0.077905	0.094426	0.102747
1996–2007	0.205818	0.344883	0.246638	0.221730

Source: Computed by the Author from ECAM1, ECAM2 and ECAM3 Survey data

4.4 Decomposition of Changes in Poverty

Table 4 presents the decomposition of changes in poverty into growth and redistribution components method in Cameroon according to the Kakwani (1997) method over the period 1996–2007. We note that the decline in all the three poverty measures, namely the incidence of poverty, the poverty gap index, and the poverty gap index squared was explained by the change in growth rather than the change in the distribution. The growth component dominates the redistribution component in all the sub-periods and over the entire period of the study in terms of contribution to the fall in poverty.

Table 4 Decomposition of Changes in Poverty (1996–2007)

Period	Poverty change	Growth Component	Redistribution Component
	Headcount Index P_0		
1996–2001	−0.135818	−0.083241	−0.052577
2001–2007	−0.045056	−0.023341	−0.021715
1996–2007	−0.180874	−0.107790	−0.072933
	Poverty Gap Ratio P_1		
1996–2001	−0.057562	−0.039807	−0.017755
2001–2007	−0.030402	−0.009074	−0.021328
1996–2007	−0.087965	−0.049785	−0.038180
	Squared Poverty Gap Ratio P_2		
1996–2001	−0.028094	−0.022178	−0.005916
2001–2007	−0.021462	−0.004608	−0.016855
1996–2007	−0.049556	−0.026689	−0.022868

Source: Computed by the Author from ECAM1, ECAM2 and ECAM3 Survey data

Between 1996 and 2001, both the growth and redistribution components contributed to the reduction of poverty. Economic growth explained 8.32 percentage points of the decline in the poverty ratio, while the redistribution component explained but 5.25 percentage points of the fall in the poverty ratio.

Similarly, economic growth explained 3.98 percentage points of the decline in the poverty gap index squared, and 2.21 percentage points of the decline in the poverty gap index squared, while redistribution explained a marginal 1.77 percentage point and 0.59 percentage point of the decline in the poverty gap index and the poverty gap index squared respectively.

The same trend is observed over the period 2001–2007 in which both the growth and redistribution components contributed to the decline in poverty although the total fall in poverty was more pronounced over the 1996–2001 sub-period.

Over the entire period of the study from 1996 to 2007, the incidence of poverty fell by 18.08 percentage points, while the poverty gap index and the poverty gap index squared fell by 8.79% and 4.75%

respectively. This enormous fall in absolute poverty was attributed to the increase in economic growth witnessed by Cameroon over the survey period.

We may conclude this section by saying that during the 1996–2001 period Cameroon witnessed rapid economic growth, poverty reduction, and an increase in income inequality. In addition, the poverty equivalent growth rate (PEGR) analysis indicates that the growth process was pro-poor, and the decline in absolute poverty was mainly explained by the growth component according to the Kakwani (2007) decomposition of changes in poverty. During the 2001–2007 period economic growth slowed down, poverty decreased marginally, and inequality also decreased as compared with that of the 1996–2001 period. The PEGR shows that growth was pro poor, and again, the decline in absolute poverty was mainly explained by the growth component of poverty reduction.

All in all, during the entire period of the study, poverty declined (and inequality increased in the period 1996–2001), economic growth was pro poor, and the growth component of poverty reduction overwhelmingly explained poverty reduction.

CONCLUSION AND ECONOMIC POLICY IMPLICATIONS

The purpose of this study was to analyze pro poor growth in Cameroon to determine the relationship between growth, poverty and income distribution, using the data drawn from the Cameroonian household surveys ECAM1, ECAM2 and ECAM3 conducted by the National Institute of Statistics (NIS) of Cameroon, respectively in 1996, 2001 and 2007. We used as an indicator of pro poor growth, the poverty equivalent growth rate (PEGR) of Kakwani et al. (2004) to find how growth affected the poor in Cameroon during the period 1996–2007.

The estimation results of the poverty equivalent growth rate (PEGR) show that growth was pro poor for the poverty ratio, the poverty gap index, and the poverty gap index squared, both during the two sub-periods 1996–2001 and 2001–2007, as well as over the entire period of the study 1996–2007, meaning that the poor received proportionally more benefits than the non poor. This result is due to the fact that the impact of improved inequality reinforced the favourable impact of growth and led to a larger reduction in poverty than if inequality had remained constant. This result suggests that to achieve the poverty reduction objective, instead of increasing the growth alone, the poverty equivalent growth rate (PEGR) should be maximized, meaning that on the one hand, the growth rate must be boosted and, on the other hand, the income distribution also should concurrently be improved.

Moreover, to quantify the specific impacts of growth and income distribution on the reduction of poverty, we carried out a decomposition of changes in poverty during the periods 1996–2001, 2001–2007 and 1996–2007 using the decomposition of changes in poverty (Kakwani, 1997). The results reveal that the level of absolute poverty declined during the periods 1996–2001, 2001–2007 and 1996–2007, and the growth component overwhelmingly dominated the redistribution component in the reduction of the level of poverty. As concerns policy formulation, the above results emphasize the importance of sustained economic growth in the reduction of the incidence of poverty. However, despite the dominance of the growth component, it has been observed that inequality as well as poverty decreased during the 2001–2007 period. This result thus highlights the fact that economic growth alone should not be the only priority in the poverty reduction process. It is essential that an efficient income distribution policy which mainly targets the poor in society should also be undertaken.

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