Labour Market Performance and Pro-poor Growth in Cameroon

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Abstract

This study uses the 1996, 2001 and 2007 Cameroon household surveys to investigate the implications of changes in labour market performance for pro-poor growth in the period before (1996-2001) and after the Decision Point of the heavily-indebted poor countries initiative (2001-2007). The study also investigates growth in income within the period under review, with the aim of understanding how growth in income relates to pro-poor growth. This study uses absolute and relative pro-poor growth measures to unveil the implications of specific employment sector growth and changes in labour market performance indicators for income growth, pro-poor growth and inequality in Cameroon in the periods 1996-2001 and 2001-2007. The results show that growth was not pro-poor in relative terms between 1996 and 2001 in Cameroon, and that it was accompanied by an increase in social inequalities. On the other hand, between 2001 and 2007, the growth was pro-poor in relative terms in all the sectors considered because poor households benefited relatively more from the fruits of growth than the other households. On the whole, between 1996 and 2001, the growth in per capita income (0.11 points) is explained by growth in employment rate (0.03 points), number of days worked per employed person (0.12 points) and participation rate of the workforce (0.02 points). Between 2001 and 2007, the pro-poor growth rate of real income of the households (2.86 points) is largely explained by the pro-poor growth rate of daily real income of the households (2.78 points), followed by the pro-poor growth rate of number of days worked per employed persons (0.42 points). We note, however, that this pro-poor growth is slowed down by the decline of the pro-poor participation growth rate (-0.16 points) and the pro-poor employment growth rate (-0.17 points). Relevant policy recommendations derived from the results include: (1) Increase household income per time period (for instance per day as used in this study or per month), and the number of days worked per employed person, because the reduction in pro-poor growth is mainly due to low household daily incomes and days worked per week by employed individuals; (2) Increase employability and the quality of the labour force in poor households because analyses reveals that the gains of growth are also slowed down by reduction in the pro-poor growth rate of labour force participation (0.16 points) and the pro-poor growth rate of employment (0.17 points).

1. Background

Economic growth is certainly a powerful force of poverty reduction. It is evident that as economies expand, they may provide greater income-generating opportunities for skilled and unskilled workers, entrepreneurs, and poor and working households. Notwithstanding, studies have shown that although economic growth is a prerequisite for reducing poverty, it is insufficient on its own (Ravallion, 2004). If growth is confined to particular areas or parts of the economy, it is less likely to be sustained or to provide opportunities for the poor to boost their earnings, to acquire skills and assets, and to enhance their livelihoods. High and sustained growth may contribute to poverty reduction if it is broad-based and inclusive, and benefiting multiple employment sectors and economic actors. Labour market-led growth is an important component of reducing poverty and improving people's lives (USAID, 2006). Yet, much work remains to be done to demonstrate how the labour market ensures that the benefits of growth extend to the poor, particularly the vulnerable groups including indigenous communities in farming activities and those in the informal sector.

Cameroon has experienced severe poverty since the mid-1980s. Between 1984 and 1996, the incidence of poverty increased by about 13.3% (Government of Cameroon, 2003). This evolution of poverty incidence, especially between the 1980s and 1996 warranted the entrance of Cameroon in August 1997 into the Enhanced Structural Adjustment Programme (ESAP) facility with the International Monetary Fund (IMF). This arrangement permitted the IMF to support the medium-term Economic and Financial Programme put in place by the Cameroonian authorities (the government, the private sector, and the civil society) to cover the period from 1 July 1997 to 30 June 2000 (Government of Cameroon, 2003). The noticeable improvement in macroeconomic stability — a basis for sustained economic growth produced by the three-year Economic and Financial Programme 1997-2000 — as well as the devaluation of the CFA franc made Cameroon in October 2000 to attain the Decision Point of the Heavily Indebted Poor Countries (HIPC) initiative.

The 1988 Structural Adjustment Programme (SAP) of the Bretton Woods institutions, the 1994 devaluation of the CFA franc against the FF, and the 1997 Enhanced Structural Adjustment Programme (ESAP) are some structural/financial reform efforts the Government of Cameroon undertook before the attainment of the Decision Point in the year 2000. Our interest is first, to examine how variables that capture labour market performances (employment rate, and under-employment rate in terms of hours worked), labour force participation rate, and productivity behaved during the period of structural/financial reforms (1996-2001), which we call "before the

Decision Point" and after the structural/financial reforms (2001-2007), which we call "after the Decision Point". Secondly, this study assesses the implications of changes in factors associated to labour market performance for growth in household earnings[1] and pro-poor growth in the periods 1996-2001 and 2001-2007. Lastly, this study attempts to assess the role of employment sectors (farm-non-farm and informal-formal) in promoting pro-poor growth. Knowledge on how growth generated employment in a given sector affects the poor and the non-poor may greatly complement Cameroon's current engagement to enhance welfare.

The Government of Cameroon recently declared poverty reduction through sustainable economic growth and decent employment the path to follow. In this regard, informed knowledge on employment sectors, where growth may be accompanied by poverty or inequality reduction, appears to be important. By the same token, analysing how labour market performance (for example, employment rate, labour force participation, hours worked and productivity) relates to growth that reduces poverty or inequality in Cameroon sets the basis for the achievement of the objectives defined in the 2009 Growth and Employment Strategy Paper. In this perspective, evaluating the nature and extent of pro-poor growth will provide useful information for the country's current and future achievements.

At the household level, prior studies in Cameroon that assess the role of the labour market in generating pro-poor growth focus rather on labour market employment sectors or location (see Tabi and Ngantcha, 2010; Fambon and Tamba, 2010). Analysis of the potential role of labour market performance that may help in understanding the pro-poor growth process is absent. This study aims to fill this gap for policy enhancement. Furthermore, this paper contributes in filling knowledge gaps on how employment generated by a growth process favours the poor more than the non-poor, or how the growth process is increasing or decreasing the level of under-employment (in terms of hours worked), or rather still whether growth is increasing or decreasing the labour force participation rates between the poor and the non-poor. Lastly, studying these issues along farm and non-farm employment sectors, as well as the informal and formal employment sectors, is also crucial in contributing to research and policy debate.

In order to provide a better oriented and more complete representation of the role of labour markets in promoting pro-poor growth in Cameroon, this study addresses as main research question: To what extent does labour market performance relate to pro-poor growth in a developing country setting such as Cameroon? Specific research questions are: (i) What is the relative contribution of farm/non-farm and informal/formal employment sectors in generating pro-poor growth in Cameroon within the periods under review? (ii) What are the implications of changes in labour market performance for per capita income growth in Cameroon in the periods 1996-2001 and 2001-2007? (iii) What is the contribution of labour market performance over time in explaining pro-poor growth across income quintiles? (iv) Which policies can we suggest on the basis of the findings from this study?

Objectives

The main objective of this study is to assess the role of labour market performance in promoting pro-poor growth in Cameroon. The specific objectives are:

(i) To examine the role that farm/non-farm and informal/formal employment sectors play in generating pro-poor or anti-poor growth in Cameroon;
(ii) To explain growth in per capita income in terms of growth of labour market performance in the periods under review and across income quintiles;
(iii) To decompose pro-poor growth of income in terms of pro-poor growth of labour market performance indicators across income quintile and over time; and
(iv) To formulate some policy implications.

The rest of the paper is organized as follows: Section two presents the pro-poor growth concepts by reviewing the literature and identifying the knowledge gaps; Section three presents the scientific and policy relevance of the study and also describes the data used. Section four presents the study findings and, lastly, section five concludes the study and provides policy recommendations.

2. Literature review

In a broad sense, growth may be considered pro-poor when it leads to a significant reduction in poverty (OECD, 2006; United Nations, 2000). However, these debates and discussions on this concept allow us to distinguish between the absolute and the relative concept of pro-poor growth. The absolute concept considers growth to be pro-poor when it reduces poverty (Ravallion, 2004). The relative concept qualifies growth to be pro-poor when the poor benefit relatively more from growth than the non-poor, which is equivalent to when growth is accompanied by a reduction in inequalities (Kakwani and Pernia, 2000; White and Anderson, 2001; Son, 2004; and Kakwani et al, 2010).

White and Anderson (2000) propose three measures of pro-poor growth using incremental income shares of the poor, normalized by their base year share, population share or some international norms. Kakwani and Pernia (2000) propose a measure of pro-poor growth that is derived from poverty elasticity. They use the ratio of poverty elasticity with respect to actual growth and distributional neutral growth to develop a pro-poor growth index. Essama-Nssah (2010) has applied a similar framework on Cameroon data to infer pro-poorness in the sub-periods 1996-2001, 2001-2007; and 1996-2007 using the Foster-Greer-Torbecke (FGT) and the Watt's poverty indexes. He investigates the growth elasticity of poverty as captured by the point elasticity of per adult equivalent expenditure with respect to its mean (a normalized Growth Incidence Curve, GIC). Osmani (2005) recommends that growth be considered pro-poor if it achieves an absolute reduction in poverty greater than it would be in a benchmark case of neutral distribution (Kakwani and Son, 2008). Essama-Nssah's (2010) analysis decomposes the overall growth elasticity of poverty into the scale and inequality components. His study resorts to the indicators of pro-poorness to examine the extent to which economic growth in Cameroon has been pro-poor.[2] His results show that economic growth in Cameroon was not pro-poor in the absolute sense between 1996 and 2001, and that it was weakly pro-poor between 2001 and 2007.

Ravallion and Chen (2003) developed a pro-poor growth method anchored theoretically around the Watt's index of poverty, which satisfies several desirable axioms. This measure focuses on the change in the income of individual poor people using the cumulative distributive function of income. Their approach, therefore, provides Growth Incidence Curves (GICs) and pro-poor growth rates to examine the extent to which growth has been pro-poor. Importantly, the GIC approach permits us to determine whether growth in expenditure in a country over a specified period has been pro-poor in nature or not. The GIC plots the growth in expenditure across each

quantile of the distribution. Kakwani, Khander and Son (2003) suggest a measure of pro-poor growth, which generalizes the Ravallion and Chen measure and which can be applied to well-known measures of poverty. The work of Kraay (2006) also generalizes Ravallion and Chen approach to other poverty measures.

Fambon and Tamba (2010) have used the Ravallion and Chen approach on Cameroon data to infer pro-poorness across residence and regions within the sub-periods 1984-1996, 1996-2001, and 2001-2007. This study is an important step to begin investigations on the role of socio-economic sectors (area of residence, region, and sector of employment) in promoting pro-poor growth in Cameroon. The notion that the impact of economic growth on poverty is intermediated through the distribution of income is a key headway for the role that the labour market may potentially play in this nexus. Essentially, it is possible to use the GIC architecture to provide a clearer representation of how the labour market, through employment creation, may help promote pro-poor growth within an economy.

It is also important to note that previous endeavours to identify the role of labour market in growth-induced poverty mainly focused on a macro and cross-country level analysis. These studies investigate how economic growth could contribute to poverty reduction through increases in employment in higher productivity sectors and in real wages. In Cameroon, we have similar studies on how growth-induced poverty is intermediated through the labour market (for example, Abessolo, 2001; Merceron, Roubaud and Torelli, 2007). Using survey data, empirical relationships between education, employment or urban labour market outcomes and income were determined as a strategy for poverty alleviation (Abessolo, 2001; Abessolo and Ebollo, 2003). Based on labour market factors, households were classified into highly skilled wage earners, intermediary workers, skilled and unskilled self-employed workers. On estimation of the FGT index and econometric analysis, they found that highly skilled workers are less vulnerable to poverty. However, this study does not infer pro-poorness of growth based on labour market outcomes. This paper attempts to provide inputs in this direction.

Merceron, Roubaud and Torelli (2007) used the three rounds of Labour Force Surveys (LFS) — 1993, 1994 and 2005 — with a panel component between 1993 and 1994, conducted by the Cameroon government statistics office in partnership with DIAL[3] to track changes over time, though the analysis was rather too descriptive and only limited to an urban labour market. Their study investigated how macroeconomic growth translated into urban households' living standards, labour conditions and poverty through the labour markets. A similar analysis could be carried out at the micro (household) level to investigate the potential role of employment and labour market-related variables in promoting pro-poor growth.

However, examining how household expenditure/income has changed over the distribution and over time may in fact inform us very little about how the labour market through job creation yields pro-poor growth. More essentially then, estimating growth incidence curves (GIC) for the main sectors within an economy may be very vital. Ravallion (2004) proposes a functional form of the growth incidence curves, GIC, where the growth rate of each quantile in the distribution is traced out across the variable under consideration. With this approach, it is possible to check how distinct and relevant labour market categories can be supplanted on to the GIC approach. Here,

GIC can be investigated by the main employment sectors within an economy to provide an understanding of whether employment creation within a sector promoted pro-poor growth.

However, possible application of the GICs architecture in the labour market context to ascertain the role of employment creation in generating pro-poor economic growth within a country is widely unexplored. The only studies to our knowledge that have attempted to supplant labour market categories on to the GICs approach are Bhorat (2009) and Tabi and Ngantcha (2010). Bhorat (2009) used growth in real adult equivalent expenditure for Zambia between 1996 and 2006 to estimate GICs for two distinct labour market categories: small-scale rural households and non-agricultural households. Tabi and Ngantcha (2010) applied the functional form using Cameroon household survey data in the period 2001-2007. Their study plots growth in per adult equivalent expenditure between 2001 and 2007 across labour market sectors such as: formal wage earners, urban self-employed workers, small-scale rural agriculture and non-farming households. Though the use of the GIC architecture as reviewed permits us to understand the role of employment sectors in promoting pro-poor growth, efforts that lean on the approach developed in Kakwani, Neri and Son (2010) to assess the role of labour market characteristics in explaining pro-poor growth are still absent in Cameroon. This paper adopts this relatively new approach to complement the empirical literature on pro-poor growth in Cameroon and provides a closer representation of the role of labour market factors.

Other studies that have attempted pro-poor growth analyses in Cameroon are Essama-Nssah and Bassole (2010) and Epo and Baye (2012). Essama-Nssah and Bassolé(2010), while hinging on the premise that the pattern of growth is characterized by urban bias and regional disparity, found that economic growth has been weakly pro-poor in Cameroon. Epo and Baye (2012) have investigated the nature of absolute and relative pro-poor growth in terms of food, non-food and total expenditures between 2001 and 2007. Their study leaned on the approaches developed in Ravallion and Chen (2003) and Kakwani and Pernia (2000) and found that household food, non-food and total expenditures were pro-poor in absolute and relative terms. To the best of our knowledge, no study in Cameroon has attempted to explain pro-poor growth rates of expenditure/income in terms of pro-poor growth rates of household labour market characteristics such as: household employment rate; household participation rate; household hours worked per employed person; and household productivity. This paper, while filling this gap, provides knowledge on which labour market characteristic (s) favour the poor than the non-poor.

This analysis is useful as individuals are likely to move out of poverty by working more hours for a constant level of hourly earnings; by increasing the level of effort per hour worked, in order to improve hourly earnings (productivity); or moving into a job that permits them to earn an income. Kakwani, Neri and Son (2010) developed a new measure of pro-poor growth which provides the linkage between growth rates in mean income and income inequality. Their work then explains pro-poor growth rate of money-metric social welfare (for example labour income) in terms of pro-poor growth rates of labour force participation, employment, hours worked, and productivity in the period 1994-2005 in Brazil. Inequality growth rate is also explained in terms of these

labour market characteristics. It is also important to note that the study singles out productivity to further explain it in terms of years of schooling, average rate of returns, and relative rate of returns.

Kakwani, Neri and Son (2010) observed a positive pro-poor growth in per capita social welfare in the sub-period 2001-2004, dully attributable to labour force participation rate, employment rate, and productivity. Productivity growth in the same period is explained mainly by years of schooling and relative rate of returns per year of schooling. In the sub-period 2003-2004, pro-poor labour income is highest and productivity is the most important factor explaining this achievement. Even as the analysis of pro-poor growth rates of labour income across periods is vital, efforts to explore the pro-poor growth rates of labour income in terms of pro-poor growth rates of labour market characteristics across quantiles, though still absent, may also be useful. Studies that are anchored on labour market characteristics, pro-poor growth rate, and income quantiles are still absent in Cameroon. Our paper attempts to fill this gap.

This paper uses the new measure of pro-poor growth as developed by Kakwani, Neri and Son (2010) to explain the pro-poor growth rates of labour income in terms of pro-poor growth rates of labour market characteristics across quantiles in Cameroon. Using Cameroon household consumption survey data CHCS I, II and III, this paper does not only inform us on the labour market characteristics-cum-policies that are more important in explaining pro-poor growth within two periods, but provides knowledge on the labour market characteristics-cum-policies that can help promote pro-poor growth among households in a particular class of income distribution. We equally explore the rates of income inequality changes in terms of inequality changes of labour market characteristics across quantiles to investigate the role of household labour force participation rate, household employment rate, household hours worked, and household productivity in reducing or increasing income inequality.

In addition, the investigation of pro-poor growth rates in terms of labour market performance indicators across quintiles is important to sharpen debate on poverty alleviation. This decomposition will allow us to attribute contributions to changes in labour market performances in accounting for pro-poor growth in income across income classes. This paper is expected to inform stakeholders concerned with the Growth and Employment Strategy Paper to ascertain inputs for targeting policy interventions. In this regard, the projected annual average growth of 5.5% between 2010 and 2020, if achieved, would be accompanied by significant poverty reduction.

3. Methodology

To investigate the role that labour markets and labour market performance indicators play in promoting pro-poor growth, this study uses the Growth Incidence Curve (GIC) to assess growth rates in per capita income per sector of activities and across income quantiles. Thereafter, the study explains income pro-poor growth rates in terms of pro-poor growth rates of labour market performance indicators that affect labour market performances in Cameroon in the sub-periods 1996-2001 and 2001-2007, using the framework developed in Kakwani, Neri and Son (2010).

Growth Incidence Curve – GIC

We use the architecture developed by Ravallion and Chen (2003) and Ravallion (2004) to assess how the labour market, through employment creation, may have helped to generate pro-poor growth in Cameroon in the periods 1996-2001 and 2001-2007 across quintiles. To achieve this, if we rank observations for household data sets by adult equivalent expenditure from the lowest to the highest values, it is possible to use the expenditure measure for a given percentile, P, at two different periods, t and $t\text{-}1$, to determine the growth rate of P^{th} percentile as follows:

$$g_t(P) = \frac{Y_t(P)}{Y_{t-1}(P)} - 1 \qquad (1)$$

Where $Y_t(P)$ and $Y_{t-1}(P)$ are the adult equivalent expenditures for P^{th} percentile in year t and $t\text{-}1$, respectively, and $g_t(P)$ is the growth rate in adult equivalent expenditure for the P^{th} percentile.

Linking pro-poor growth and labour market performance indicators

We draw on the work of Kakwani, Neri and Son (2010) to explore the possible linkages between pro-poor growth of income in terms of pro-poor growth of employment, labour force participation, hours worked, and productivity. The approach developed in Kakwani, Neri and Son (2010)[4]provides the linkage between growth rates in mean income and in income inequality. In this sense, growth is defined as pro-poor (relative) if there is a gain in the growth due to a decrease in inequality. This paper first determines the new measure of pro-poor growth before linking it with labour market characteristics.

a) Determining the relative pro-poor growth of income

Let y_{jt} be the per capita real income of the jth household at year t. With a population weight variable (PopCoef),5 it is possible to calculate the relative frequency, f_{jt}, associated with the jth household at year t. This way, the mean income of all individuals in Cameroon at year t given by:

$$\mu_t = \sum_{j=1}^{n} f_j y_j \tag{2}$$

The growth rate of mean income at year *t* is:

$$\gamma_t = \Delta \log(\mu_t) \tag{3}$$

It is important to note that calculations are done for the years 1996 and 2001 across quantiles of income.

Before determining the money-metric social welfare, we need an estimate of the probability distribution function *F(y)*. An unbiased estimate of *F(y)* for the jth household at year *t*, with households ranked in an ascending order of their per capita real income y_{jt}, is given by:

$$F_{jt}(y) = P_j = \sum_{i=1}^{j} f_i - f_j / 2 \tag{4}$$

Substituting Equation 4 into Equation A7[6], we obtain a consistent estimate of money-metric social welfare y_t^* as follows:

$$\log(y_t^*) = 2\sum_{j=1}^{n} f_j (1 - P_j) \log(y_j) \tag{5}$$

From Equation 5, an estimate of pro-poor growth rate at year *t* is given by:

$$\gamma_t^* = \Delta \log(y_t^*) \tag{6}$$

Growth is said to be pro-poor at year *t* if $\gamma_t^* > \gamma_t$, γ_t is the growth rate of mean income at year *t*. We estimate growth rates of per capita income and pro-poor growth rates of per capita income for each quantile in order to infer pro-poorness for each class of income distribution.

b) Linking pro-poor growth with labour market characteristics

Using CHCS I and II, which provide information on labour market characteristics of household heads, we can compute the following variables at household level: household per capita real income $(y_r = y/s)$; household employment rate $(e_r = e/L)$; hours worked per employed person $(h_e = h/e)$; productivity $(\xi = y_r/h)$; and

household labour force participation rate $l = L/s$ where, e = employed persons in the household; y_r = household real income; s = household size; L = household labour force; and h = hours worked by employed persons in a household.

Putting these variables (employment rate, hours worked per person employed, productivity and household participation rate) in the place of per capita income in (2), (3), (4), (5), and (6) we can determine growth rates in mean values and pro-poor growth rates for each of the above variables. These calculations will permit us to check whether individual labour market characteristics are pro-poor or anti-poor.

The linkage between the growth rate of per capita income and the growth rates of labour market characteristics is obtained as follows:

$$\log(y_r) = \log(e_r) + \log(h_e) + \log(l) + \log(\xi) \tag{7}$$

It is easy to show from Equation7 that growth rate in per capita income is related to labour market characteristics in an additive manner (these rates are determined for each quantile of year t = 2001 and year t-m=1996).

$$\gamma(y_r) = \gamma(e_r) + \gamma(h_e) + \gamma(l) + \gamma(\xi) \tag{8}$$

The labour market factors can either be negative or positive. If for example $\gamma(e_r)$ is positive, this implies that employment rate has improved in Cameroon between 1996 and 2001, contributing positively to economic growth. If $\gamma(e_r)$ is negative, this indicates that the employment rate suffered deterioration between 1996 and 2001, affecting economic growth negatively.

Now, applying the identity in Equation 7 in Equation 5, it is simple to show that the pro-poor growth of per capita income is again related to pro-poor growth rate of labour market characteristics in an additive fashion:

$$\gamma^*(y_r) = \gamma^*(e_r) + \gamma^*(h_e) + \gamma^*(l) + \gamma^*(\xi) \tag{9}$$

Equation 9 allows us to explain pro-poor growth in per capita income in terms of pro-poor growth of labour market characteristics over time and across quantiles.

Subtracting Equation 8 from Equation 9 provides us with the decomposition of changes in income inequality in terms of the inequality changes of labour market characteristics over time and across quantiles.

$$g^*(y_r) = g^*(e_r) + g^*(h_e) + g^*(l) + g^*(\xi) \tag{10}$$

From Equation 10 we can infer pro-poorness of per capita income and judge the contributions of labour market characteristics to inequality in per capita income. If for example $g^*(e_r)$ is positive (or negative), it implies that employment generated in the country or at a given quantile contributes to a decrease (or an increase) in inequality in per capita income. A similar judgment can be done for the other labour market factors.

This framework allows us to investigate the role that labour market characteristics/ factors play in determining growth rate in per capita income; pro-poor growth rates in

per capita income; and changes in inequality of per capita income in Cameroon. This paper uses this architecture across quantiles of income to check how the role labour market factors play varies across classes of income distribution in Cameroon. We acknowledge that to formulate poverty reduction policies, it is important to look at the distributive pattern of economic growth and not just at the growth rate in mean income.

Data used

We use the Cameroon Household Consumption Surveys, CHCS I conducted in 1996, CHCS II conducted in 2001 and CHCS III conducted in 2007 by the National Institute of Statistics (NIS). These surveys provide information on labour market employment sectors and labour market performances. CHCS I was conducted over three months from February to April and comprised 1,731 households that were actually interviewed. For the CHCS I, the country was divided into six strata: Douala, Yaoundé, Rural forest, Rural high plateaus, Rural Savanna and Other cities. The CHCS II was undertaken from September to December 2001. It comprised 10,992 households who were actually interviewed. For CHCS II, the country was divided into 22 strata: Douala, Yaoundé, the urban and the rural milieu of each of the 10 provinces. The CHCS III was conducted between May and July 2007, and comprised 1,1391 households that were actually interviewed. For CHCS III, the country was divided into 32 strata: Douala, Yaoundé, and the urban, semi-urban and the rural milieu of each of the 10 provinces. These datasets are obtainable from NIS and the team members have used them extensively. In particular, we harmonize the three data sets over time. The 2001 data is considered the base. Given that the 1996 data has been harmonized to warrant the use of the poverty line 185,490 CFA francs in 1996 and 2001, we then proceeded to deflate the 2007 expenditures to 2001 prices so that the same poverty line can be used and so that results are comparable.

2. Findings

Growth incidence curve and pro-poor growth rates

Growth incidence curve for 1996-2001

In this section, we use the architecture developed by Ravallion and Chen (2003) and Ravallion (2004) to evaluate how the labour market through job creation can promote pro-poor growth in Cameroon in the periods 1996-2001 and 2001-2007 across quintiles. The approach of Ravallion and Chen (2003) has the merit that it allows us to determine if the growth of income/spending in a country over a specific period has been pro-poor in nature or not. The GIC shows graphically the growth of income through every quantile of the distribution. This pro-poor growth approach does not only allow us to verify the robustness of a pro-poor policy, but also has the advantage to be situated in a mixed approach; that is, it is defined as a measure which is at the same time partial and complete. This is not only a continuation of works on pro-poor growth, but explains pro-poor growth rates of earned income in terms of labour market characteristics across quintiles in Cameroon. In order to better understand the role of job creation in the promotion of pro-poor growth in a developing country such as Cameroon.

To achieve this, if we tidy up observations for the household datasets by per capita income from the lowest to the highest values, it is possible to use the income measure for a given quintile, *P*, in two different periods, *t* and *t-1*, to determine the growth rate of a percentile as clarified in Equation 1.

Comparing two periods *t* and *t-1*, the GIC represents the quintiles of the population (classified by adult equivalent expenditure for P quintiles) on the X axis and the growth rate of the adult equivalent expenditure for the corresponding P quintile on the Y axis.

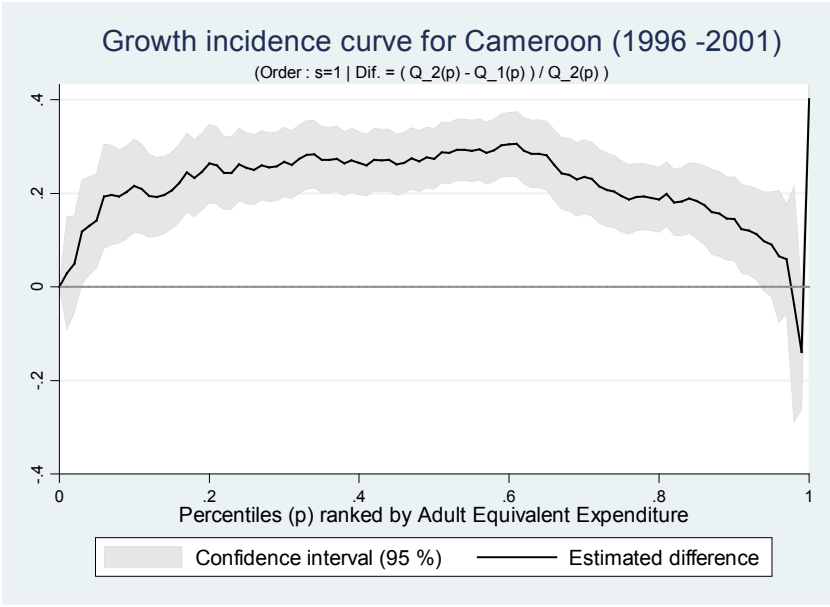
-If the growth rates $g_t(P)$ are all positive up to a given cut-off poverty line (say point *z*), then growth is pro-poor in absolute terms up to the poverty line. But the GIC can also be evaluated by analysing its slope; up to which degree the growth was pro-poor in relative terms.

- If the slope is negative, that is the growth rates of the lower quintiles (the poorest) are higher than those of the superior quintiles, then growth is pro-poor in relative terms.

For Cameroon as a whole (Figure 1), the GIC shows a positive rate of growth between the percentile 0 and the 96th percentile. This implies that this slice of the distribution benefited all the same from the growth of income, given that the slope of the curve at this level is positive. From the 61th percentile right up to around the 96th

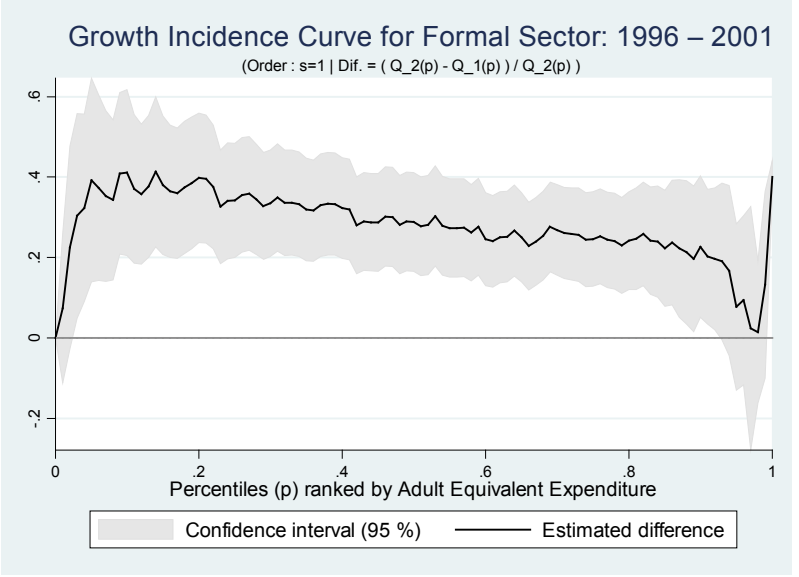
we have a negative slope and a resumption of growth in the percentiles of the richest. We can conclude that growth was not pro-poor in relative terms in Cameroon between 1996 and 2001 and that it was accompanied by an increase of social inequalities. This result conforms with Fambon and Tamba (2010).

Figure 1: Growth incidence curve for Cameroon, 1996-2001



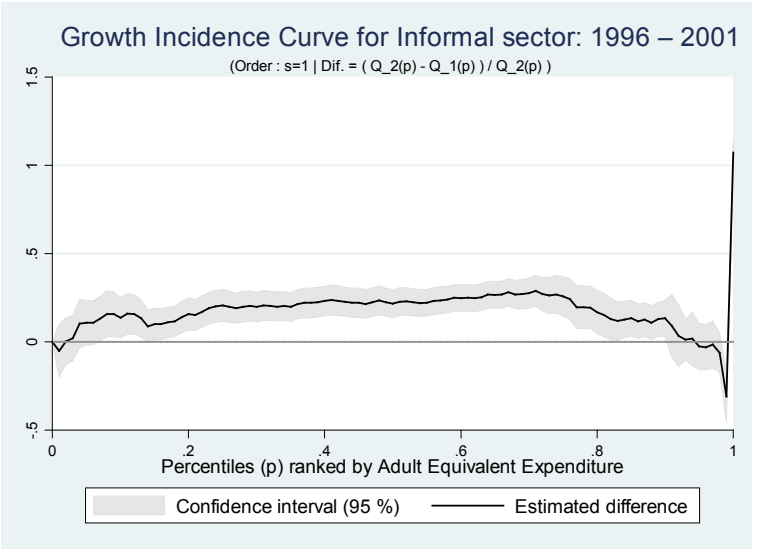
The analysis of the GIC for the formal sector (Figure 2) shows that the growth rates gt(P) are all positive, thus growth is pro-poor in absolute terms up to the poverty line, but the GIC has a positive slope between the percentile 0 and the 17th percentile, negative for percentiles between 17th and 97th and positive from the 97th percentile. We can then conclude that there was an increase in inequality and poverty among households in the poorest quintile. Consequently, growth was pro-poor in relative terms in the formal sector of employment between 1996 and 2001, but this growth was not pro-poor in relative terms among the poorest of the poor.

Figure 2: Growth incidence curve for formal sector, 1996-2001



The analysis of the GIC for the informal sector (Figure 3) shows that the growth rates $g_i(P)$ are not all positive. This is indication that growth was not pro-poor in relative terms in this sector between 1996 and 2001 and also the slope of this curve is positive between the percentile 0 and the 70th percentile, negative before increasing again in the 97th percentile. We can conclude that the poorest percentiles did not take advantage of the economic growth more than the richest percentiles. This result underlines the importance of the formalization of the informal sector in Cameroon in order to allow the households who participate to fully take advantage of the economic growth.

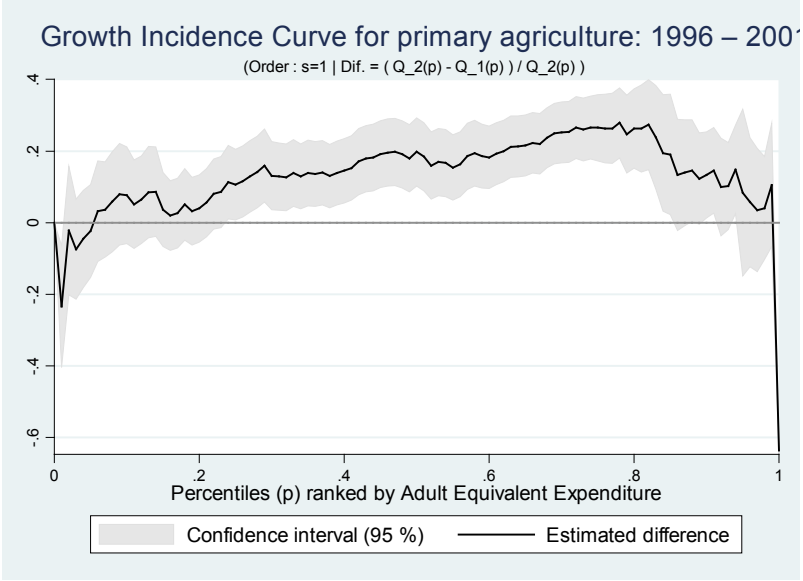
Figure 3: Growth incidence curve for informal sector, 1996-2001



The analysis of the GIC for the farming sector (Figure 4) shows that the growth

rates are not all positive; the poorest percentiles have a negative growth rate up to the 80th percentile and from the 98th, there is good reason to say that the poorest did not benefit from economic growth more than the richest. Also, the slope of the curve is positive in the poorest quintiles; the intermediate quintiles register a higher growth rate, thus they benefited more from the growth than the households that are in the poorest percentiles and in the richest percentiles of the distribution of income. Thus, we conclude that the growth was not pro-poor in relative terms in this sector.

Figure 4: Growth incidence curve for primary agriculture sector, 1996-2001



Concerning the manufacturing sector, we have a positive rate of growth in the poorest percentiles up to the 95th percentile. The poorest percentiles have the highest growth rates in the distribution of income, implying pro-poor growth in relative terms in this sector between 1996 and 2001. These two results (Figure 4 and Figure 5) indicate the necessity of mechanizing the agricultural primary sector, which amasses a very large number of households. This mechanization can help promote pro-poor growth in relative terms in Cameroon.

Figure 5: Growth incidence curve for secondary manufacturing sector, 1996-2001

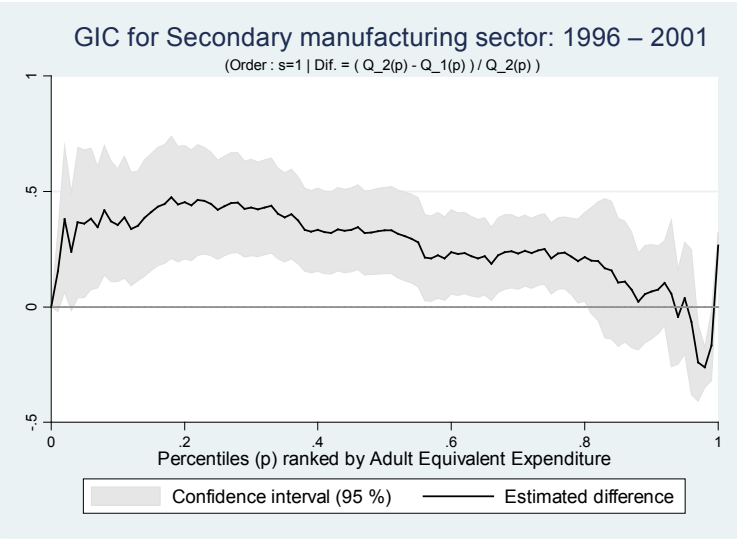


Table 1 shows that the average growth rates are all positive. However, by considering the primary agricultural sector, the pro-poor growth rate (PPGR) in absolute terms is lower than the average growth rate, confirming an increase in inequality and a non-pro-poor growth in relative terms. On the other hand, in the formal, informal and secondary manufacturing sectors, the PPGR is greater than the average growth rate (g), therefore indicating a decrease in inequality and a pro-poor growth in relative terms.

Table 1: Pro-poor growth rates (PPGR), 1996-2001

	Cameroon	Formal	Informal	Primary agriculture	Secondary manufacturing
PPGR	0.163 (0.021)	0.224 (0.039)	0.129 (0.026)	0.078 (0.032)	0.258 (0.046)
Mean growth rate(g)	0.158 (0.035)	0.223 (0.059)	0.094 (0.047)	0.114 (0.048)	0.114 (0.094)
PPGR - (g)	0.005 (0.033)	0.0008 (0.062)	0.035 (0.044)	-0.036 (0.043)	0.144 (0.091)

Source: Author's calculations with ECAM I & II

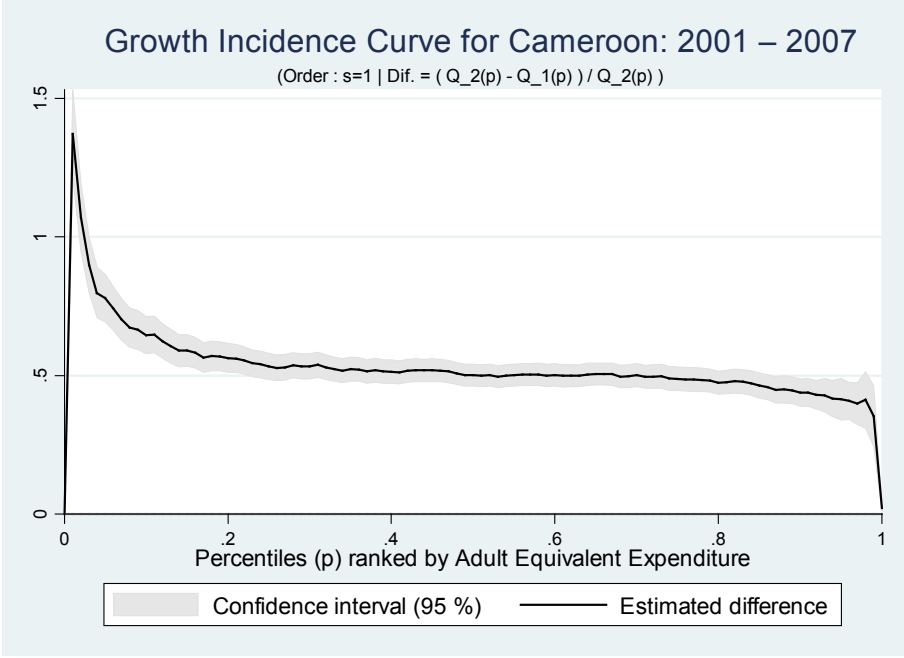
Note: the national poverty line = 185,490 CFA francs per Adult Equivalent per year7 and values in parentheses are standard errors.

Growth incidence curve for 2001-2007{C}

The GIC of Cameroon (Figure 6) from 2001 to 2007 is decreasing between the 0th percentile up to the neighbourhood of the 20th percentile, where we note the highest growth rate of the distribution of income. The GIC is constant between the 20th up to the neighbourhood of the 98th percentile, and decreasing from the latter up to the richest percentile. Furthermore, the growth rates of income are all positive and the poorest

households registered the highest growth rates of the distribution of income. Besides, the growth rate of income registered by the richest 5% of the households is almost nil. Thus, we can say that the inequality between the poorest and the richest reduced during the period 2001-2007. On the contrary, for the households situated between the 20th and the 98th percentile, income grew all at the same rate and inequality remained constant over the same sub-period. We can thus conclude that growth was pro-poor in absolute terms in Cameroon over the period 2001-2007.

Figure 6: Growth incidence curve for Cameroon, 2001-2007



The analysis of the GICs for the formal, informal, farming and secondary manufacturing sectors (Figures 7, 8, 9 and 10) is almost similar to the previous one because they present the same curves. Indeed, we note that the GIC for the farming sector is decreasing between the 0th percentile and the 92nd percentile, then grows marginally between this percentile and the richest percentile. Furthermore, the growth rates of household income are all positive and the poorest percentiles register the highest growth rates of income. We can thus conclude that the poorer households benefited more from the fruits of growth than the other households. Growth was thus pro-poor in absolute terms in all these sectors between 2001 and 2007.

Figure 7: Growth incidence curve for formal sector, 2001-2007

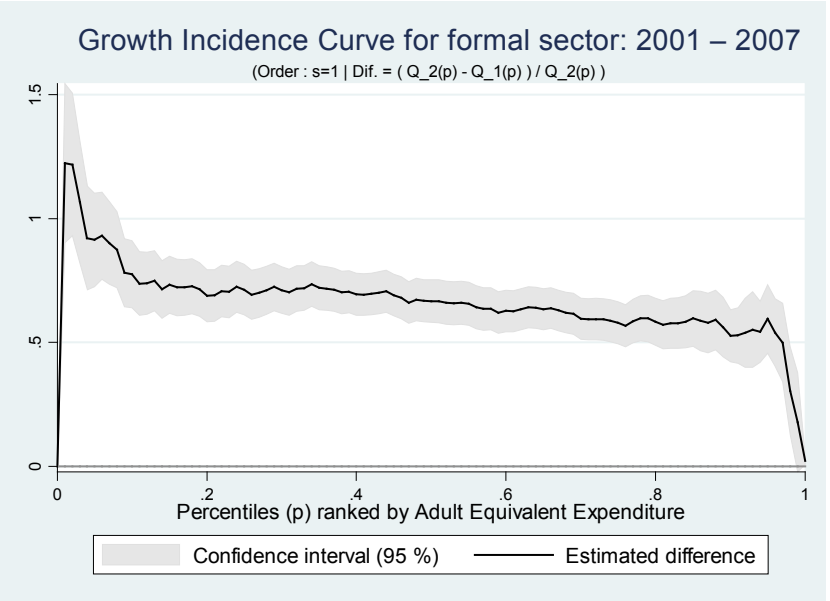


Figure 8: Growth incidence curve for informal sector, 2001 -2007

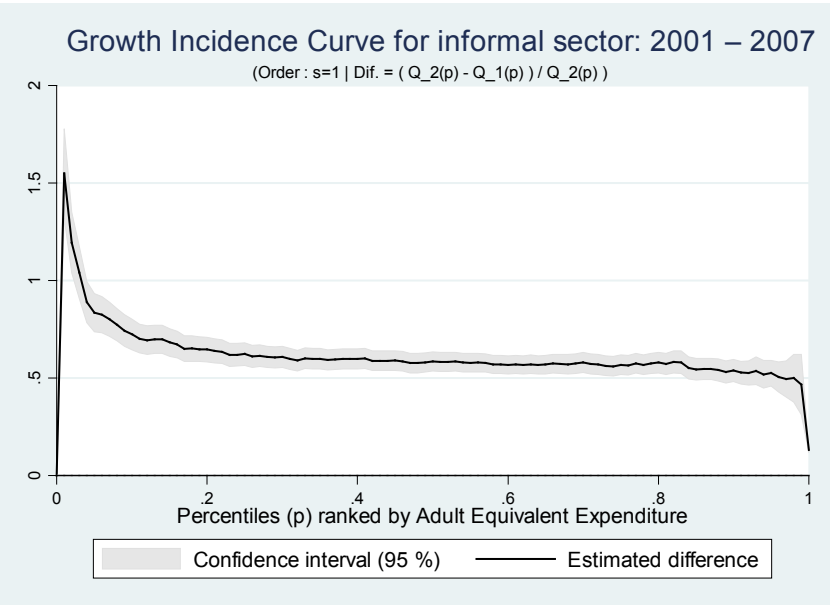


Figure 9: Growth incidence curve for primary agriculture sector, 2001-2007

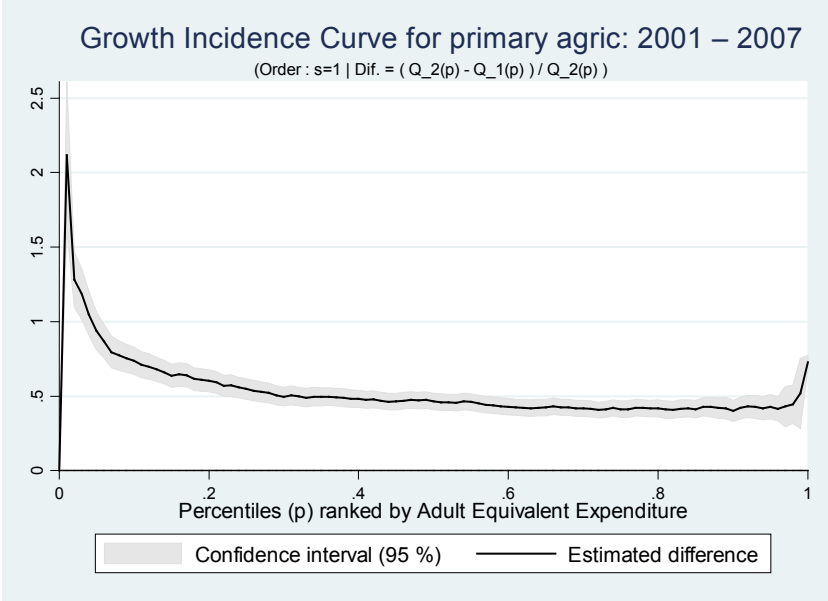


Figure 10: Growth incidence curve for secondary manufacturing sector, 2001-2007

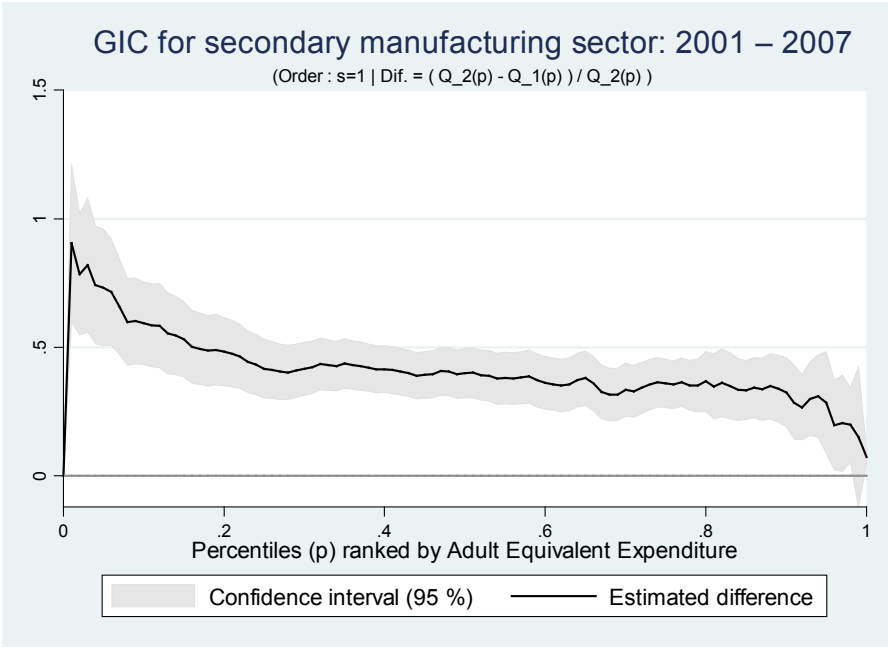


Table 2 shows that the difference between the PPGR and the average growth rate is all negative, with the exception of the manufacturing sector where this rate takes a positive value of 0.104 points. This way, by considering the manufacturing sector, the pro-poor growth rate (PPGR) is greater than the average growth rate, confirming

a decrease in inequality and pro-poor growth in relative terms. On the other hand, in the formal, informal and primary agriculture sectors, the PPGR is lower than the average growth rate (g) showing that although we had a pro-poor growth in absolute terms in these sectors, it was not enough to reduce inequality considerably in Cameroon between 2001 and 2007.

Table 2: Pro-poor growth rates (PPGR), 2001-2007

	Cameroon	Formal	Informal	Primary agriculture	Secondary manufacturing
PPGR	0.328 (0.011)	0.327 (0.022)	0.348 (0.012)	0.342 (0.014)	0.304 (0.028)
Mean Growth rate(g)	0.333 (0.017)	0.431 (0.037)	0.427 (0.019)	0.343 (0.023)	0.201 (0.044)
PPGR - (g)	-0.004 (0.018)	-0.104 (0.041)	-0.079 (0.019)	-0.001 (0.022)	0.104 (0.047)

Source: Author's calculations with ECAM II & III

Trends in actual growth and pro-poor growth of labour market characteristics between 1996 and 2001 across quintiles

Our interest here is to compare the current growth rates and the pro-poor growth rates of labour market indicators between 1996 and 2001 across quintiles of income. This comparison allows us to investigate if there was an increase or a reduction in inequality of a given indicator between 1996 and 2001 across quintiles.

Trends in per capita real income and pro-poor real income between 1996 and 2001 and across quintiles

Table 3 presents the growth rate of real income per capita across quintiles, which is given by household income (y) divided by the household size. Here, interest is to compare in terms of per capita income, the pro-poor growth rates and the actual growth rate in order to say if there were gains or losses of growth across quintiles between 1996 and 2001. It appears that in all the quintiles there were losses of growth in terms of income between 1996 and 2001, with the exception of quintile Q4 with a gain of 0.57 points. We notice, nevertheless, that there were lower losses in growth in the poorest quintiles than in the richest quintiles, and that generally the pro-poor growth rate of real income stands at -5.85 points, on average, with respect to -1.99 points for the actual growth rate.

Table 3: Growth rates of per capita real income and social welfare

	1996/2001		
Quintiles	Actual growth rate	Pro-poor growth rate	Gain(+)/loss(-)
Poorest	-0.18	-0.59	-0.41
Q2	-0.03	-0.90	-0.87
Q3	0.03	-1.19	-1.22
Q4	-1.85	-1.28	0.57

Richest	-0.06	-1.41	-1.35
Overall 1996/2001	-1.99	-5.85	-3.86

Source: Author's calculations with ECAM I & II

Trends in per capita productivity (daily earnings) and pro-poor productivity between 1996 and 2001 and across quintiles

Table 4 presents the growth rate of per capita productivity across quintiles, which is obtained by dividing the household income (y) by the workdays (h) of the people employed in the household. Our focus here is to compare in terms of per capita productivity the pro-poor growth rates, and the actual growth rate to say if there were gains or losses of productivity growth across quintiles between 1996 and 2001. We note that social welfare is captured using the household per capita income, and productivity is captured by using the household income by workdays. Therefore, the function of social welfare gives more weight to the utility appreciated by the poor people compared to the utility appreciated by the non-poor people. It appears that in all the quintiles there were losses of growth in terms of productivity between 1996 and 2001. We notice, however, that there were fewer losses in the poorest quintiles compared to the richest quintiles and that, on the whole, the pro-poor growth rate of productivity was -5.57 points on average with respect to an actual growth rate of -0.07 points, giving a loss of -5.50 points of productivity growth.

Table 4: Growth rates of per capita productivity and social welfare

	1996/2001		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	0.09	-0.62	-0.71
Q2	-0.03	-0.91	-0.88
Q3	-0.20	-1.16	-0.96
Q4	-0.19	-1.22	-1.03
Richest	-0.21	-1.29	-1.08
Overall 1996/2001	-0.07	-5.57	-5.50

Source: Author's calculations with ECAM I & II

Trends in days worked per employed and pro-poor days worked per employed between 1996 and 2001 and across quintiles

Table 5 presents the growth rate of workdays by employed persons in the household across quintiles. It is obtained by dividing workdays of employed persons in household (h) by the number of employed persons in the household. Again, focus here is to compare in terms of workdays of employed persons, the pro-poor growth rates and the actual growth rate to say if there were gains or losses of growth across quintiles between 1996 and 2001. It is evident that in all the quintiles, except the poorest quintile which registers a gain of 0.002 points, there were losses of growth rate in terms of productivity between 1996 and 2001. These gains of growth rate among the poorest can be attributed to the reduction of inequality in workdays by employed persons between

1996 and 2001. We, however, notice that there were fewer losses in the poorest quintiles than in the richest quintiles, and that generally the pro-poor growth rate of workdays by employed persons is -0.84 points compared to 0.12 points for the actual growth rate, making a loss of 0.96 points.

Table 5: Growth rates of days worked per employed and social welfare

	1996/2001		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	-0.080	-0.078	0.002
Q2	0.01	-0.12	-0.13
Q3	0.19	-0.17	-0.36
Q4	0.14	-0.18	-0.32
Richest	0.09	-0.20	-0.29
Overall 1996/2001	0.12	-0.84	-0.96

Source: Author's calculations with ECAM I & II

Trends in household employment rate and household pro-poor employment rate between 1996 and 2001 and across quintiles

Table 6 presents the employment rate in the household. It is obtained by dividing the number of employed persons in the household by labour force of the household (L). It is visible that all the quintiles of income register gains of growth in terms of employment rate between 1996 and 2001. Generally, the pro-poor growth of employment rate stands at 27%, on average, compared to 3% for the actual growth rate, making a gain of 0.24 points. Importantly, the pro-poor growth of employment rate is the same for the poorest quintiles and richest quintiles, but we observe that the intermediate quintiles of income distribution benefited more from the pro-poor growth of employment rate.

Table 6: Growth rates of household employment rate and social welfare

	1996/2001		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	0.03	0.04	0.01
Q2	0.050	0.051	0.001
Q3	0.03	0.07	0.04
Q4	0.01	0.06	0.05
Richest	0.01	0.04	0.03
Overall 1996/2001	0.03	0.27	0.24

Source: Author's calculations with ECAM I & II

Trends in labour force participation and pro-poor labour force participation between 1996 and 2001 and across quintiles

Table 7 presents the participation rate in the household and the pro-poor growth of per capita participation rate. It is obtained by dividing the labour force available in the households (L) by the household size. Here, interest is to compare in terms of participation rate in the households the pro-poor growth rates, and the actual growth rate to say if there was gain or loss of growth across quintiles between 1996 and 2001. It ensues from the table that all the quintiles of income registered gains of growth in terms of participation rate between 1996 and 2001 with the exception of the richest quintile which obtained a loss of 0.01 points. Put together, the pro-poor growth rate is 30%, on average, compared to 2% for the actual growth rate, with a gain of 0.28 points. Besides, it is crucial to underline that the pro-poor growth of participation of the labour force is higher among the poor households than among the rich.

Table 7: Growth rates of labour force participation and social welfare

	1996/2001		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	-0.22	0.07	0.29
Q2	-0.06	0.08	0.14
Q3	0.01	0.08	0.07
Q4	-0.02	0.06	0.08
Richest	0.05	0.04	-0.01
Overall 1996/2001	0.02	0.30	0.28

Source: Author's calculations with ECAM I & II

Explaining growth rates in per capita real income in terms of the growth rates of labour market characteristics

Interest in this section is to explain the growth rates of real income per head in terms of growth rate of labour market indicators across quintiles. For the poorest quintile, the decrease of per capita income by 0.18 points is overwhelmingly explained by the fall in the participation rate of the household (-0.22 points) followed by the workdays employed persons (-0.08 points). Besides, the growth of daily income in particular and the growth of employment rate among the poorest households tend to mitigate the reduction in per capita income among the poor households.

Concerning the richest quintile, it is interesting to underline that the fall in household income per capita (-0.06 points) is strongly explained by the fall in the average daily income of households (-0.21 points). It is important to emphasize that the growth in workdays by employed persons in the household and the participation rates limited further reductions in household per capita income significantly among the richest households.

As for quintile Q2, we notice that the reduction in income (-0.03 points) is largely explained by the reduction in daily income of households (-0.03 points) and by the reduction in the participation rate of the work force (-0.09 points). Nevertheless, the

number of days worked by employed persons and the employment rate significantly mitigated this reduction.

The quintile Q3 registers an income growth of 0.03 points, which is strongly explained by the growth rate of the number of days worked per employed persons in a household, the employment rate and the participation rate of the work force. However, the reduction in the daily income of 0.2 points comes to limit income growth in this quintile.

As for quintile Q4, we register a growth rate of 0.07 points of real income per capita, which is explained for the greater part by reduction in daily income (-0.19 points) and the reduction in participation rate of the households (-0.02points). We underline that this reduction is mitigated by a gain of employment rate (0.01 points) and number of days worked by employed persons (0.14 points).

On a whole, between 1996 and 2001, the growth in income (0.11 points) is explained by the employment rate (0.03 points), number of days worked by employed persons (0.12 points) and participation rate of the labour force (0.02 points). We note, however, that this growth in income is slowed down by the daily income of households (-0.07 points).

Table 8: Explaining growth rates per capita real income

	Quintiles					
Labour market characteristics	Poorest	Q2	Q3	Q4	Richest	Overall 1996-2001
Average daily earnings	0.09	-0.03	-0.2	-0.19	-0.21	-0.07
Average days worked per employed	-0.08	0.01	0.19	0.14	0.09	0.12
Household employment rate	0.03	0.05	0.03	0.01	0.01	0.03
Household participation rate	-0.22	-0.06	0.01	-0.02	0.05	0.02
Total household per capita income	-0.18	-0.03	0.03	-0.07	-0.06	0.11

Source: Author's calculations with ECAM I & II

Explaining pro-poor growth rates in per capita real income in terms of the pro-poor growth rates of labour market characteristics

In this section, the interest is to explain the pro-poor growth rates of real income per head in terms of pro-poor growth rates of labour market indicators across income quintiles between 1996 and 2001.For the poorest quintile, the fall in pro-poor income per capita by 0.59 points is largely explained by the fall in pro-poor daily income of the household (-0.62 points) followed by the pro-poor days worked by employed persons (-0.08 points). However, the pro-poor growth of participation rate of the labour force, in particular, and the pro-poor growth of employment rate among the poorest households tend to limit the reduction in the pro-poor income per capita among the poorest quintile.

Concerning the richest quintile, it is interesting to note that the reduction in pro-poor income per capita of the household (-1.41 points) is strongly explained by the drop in the average daily income of households (-0.29 points) and the reduction in workdays per employed persons in the household (-0.20 points). It is important to underline that

the pro-poor growth of employment and participation rates significantly mitigate the reduction in pro-poor income per capita among the richest households.

As for quintile Q2, we observe that the reduction in pro-poor income growth (-0.29 points) is largely explained by the reduction in the pro-poor daily income of the households (-0.91 points), followed by reduction in the number of days worked per employed persons in the household (-0.12 points). However, the pro-poor growth of employment rate and participation rate of the labour force play an important role in limiting further reduction in the pro-poor income in this quintile.

Quintile Q3 registers a pro-poor per capita income growth of 0.03 points, which is strongly explained by pro-poor days worked per employed person in the household, and the pro-poor employment and participation rates. Worthy of note is the reduction in the daily income of 0.2 points, which limits pro-poor per capita income growth in this quintile.

As for quintile Q4, we have a negative pro-poor per capita income of 1.19 points, which is explained for the greater part by the reduction in pro-poor daily income (-1.16 points) and by the pro-poor days worked per employed person in the household (-0.17 points). We underline that the pro-poor growth of the participation rate of households and the pro-poor growth of employment rate significantly mitigated this reduction.

On the whole, between 1996 and 2001, the negative pro-poor per capita income growth (-5.85 points) is strongly explained by the reduction in pro-poor daily income (-5.57 points), and by the pro-poor days worked per employed person (-0.84 points). We note, however, that further reduction in pro-poor per capita income growth is limited by the pro-poor growth of participation rate (-0.30 points) and also the pro-poor growth of employment rate (-0.27 points).

Table 9: Explaining pro-poor growth rates per capita real income

	Quintiles					
Labour market characteristics	Poorest	Q2	Q3	Q4	Richest	Overall 1996-2001
Pro-poor growth rate daily earnings	-0.62	-0.91	-1.16	-1.22	-1.29	-5.57
Pro-poor growth days worked per employed	-0.08	-0.12	-0.17	-0.18	-0.20	-0.84
Pro-poor growth household employment rate	0.04	0.05	0.07	0.06	0.04	0.27
Pro-poor growth household participation rate	0.07	0.08	0.08	0.06	0.04	0.30
Pro-poor growth total household per capita weekly income	-0.59	-0.90	-1.19	-1.28	-1.41	-5.85

Source: Author's calculations with ECAM I & II

Trends in Actual Growth and Pro-poor Growth of Labour Market Characteristics between 1996 and 2001 across Quintiles

In this sub-section, the concern is to compare the actual growth rates and the pro-

poor growth rates of labour market indicators between 2001 and 2007 across income quintiles. In this perspective, we are going to be able to observe if there was an increase or a reduction in the inequality of a given indicator between 2001 and 2007 across quintiles.

Trends in per capita real income and pro-poor real income between 1996 and 2001 and across quintiles

Table 10 presents the growth rate of real income per head across quintiles. We observe that in all the quintiles there was a strong growth of real income per capita compared to pro-poor growth of real income, which has caused a loss of growth in terms of real income between 2001 and 2007. However, the poorest quintiles register more losses of growth in terms of real income than the richest quintiles. On a whole, between 2001 and 2007, we have an actual growth rate of 5.11% for real income and 2.86% for pro-poor growth rate of real income, occasioning a loss in real income growth (-2.25 points). This generalized loss can be attributed to an increase in inequality of real income per head between 1996 and 2001.

Table 10: Growth rates of per capita real income and social welfare

	2001/2007		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	4.68	0.32	-4.36
Q2	5.02	0.44	-4.57
Q3	5.25	0.59	-4.66
Q4	5.48	0.53	-4.95
Richest	5.84	0.62	-5.21
Overall 2001/2007	5.11	2.86	-2.25

Source: Author's calculations with ECAM II & III

Trends in per capita productivity (daily earnings) and pro-poor productivity between 2001 and 2007 and across quintiles

Table 11 shows the growth rate of per capita productivity (daily income) and the pro-poor growth rate of per capita productivity across quintiles between 2001 and 2007. We observe that the loss in growth in all the quintiles is due to the strong actual growth of per capita productivity compared to the pro-poor growth of per capita productivity. This way, between 2001 and 2007, we have an actual growth rate of 4.75% for per capita productivity and a 2.78% pro-poor growth rate for per capita productivity, making a loss in growth of per capita productivity (-1.97 points). This result indicates that there was an increase in inequality of per capita productivity (that is, an increase in the inequality of daily earnings) between 1996 and 2001.

Table 11: Growth rates of per capita productivity and social welfare

	2001/2007		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	4.60	0.39	-4.21
Q2	4.78	0.46	-4.32
Q3	4.85	0.59	-4.26
Q4	4.92	0.52	-4.40
Richest	5.03	0.58	-4.44
Overall 2001/2007	4.75	2.78	-1.97

Source: Author's calculations with ECAM II & III

Trends in days worked per employed and pro-poor days worked per employed between 2001 and 2007 and across quintiles

Table 12 shows the actual growth rate of days worked per employed persons and pro-poor days worked per employed persons between 2001 and 2007 across quintiles. We observe that in all the quintiles, there was a strong actual growth in days worked per employed persons compared to the pro-poor days worked by the employed between 2001 and 2007, engendering a loss in growth in terms of days worked by the employed in all quintiles. However, the poor quintiles register less loss of growth compared to the rich quintiles. On the whole, between 2001 and 2007, we have an actual growth rate of 0.66% for days worked by the employed and a 0.42% pro-poor growth rate of days worked by the employed, making a loss of growth in terms of days worked by the employed (-0.240 points). This trend re-confirms the observation that participation in the labour market is more sensitive to the economic situation.

Table 12: Growth rates of days worked per employed and social welfare

	2001/2007		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	0.29	0.06	-0.228
Q2	0.46	0.08	-0.384
Q3	0.65	0.10	-0.543
Q4	0.84	0.08	-0.756
Richest	1.21	0.07	-1.147
Overall 2001/2007	0.66	0.42	-0.240

Source: Author's calculations with ECAM II & III

Trends in household employment rate and household pro-poor employment rate between 2001 and 2007 and across quintiles

Table 13 presents the trends of employment rates of households and the pro-poor employment rate of households between 2001 and 2007 across quintiles. The poorer quintiles, Q2 and Q3, register a strong actual employment growth rate compared to the pro-poor employment rate of the households, occasioning a loss of growth in these

quintiles. On the other hand, quintiles Q4 and Q5 register gains in growth for this indicator. Commonly, between 2001 and 2007 there is an actual employment growth rate of 0.01% and a pro-poor employment growth rate of 0.17%, making a loss in growth in terms of employment rate (-0.18 points).

Table 13: Growth rates of household employment rate and social welfare

	2001/2007		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	0.30	-0.04	-0.34
Q2	0.16	-0.05	-0.21
Q3	0.02	-0.06	-0.08
Q4	-0.12	-0.04	0.08
Richest	-0.35	-0.003	0.35
Overall 2001/2007	0.01	-0.17	-0.18

Source: Author's calculations with ECAM II & III

Trends in labour force participation and pro-poor labour force participation between 2001 and 2007 and across quintiles

Table 14 shows the trends of participation rate and pro-poor participation rate of the labour force between 2001 and 2007 across quintiles. All the quintiles record a weak actual growth of labour force participation rate compared to the pro-poor participation rate of the labour force, leading to gains of growth in terms of labour force participation in all the quintiles. On a whole, between 2001 and 2007, we have an actual growth rate of labour force participation of -0.30% and a pro-poor participation growth rate of -0.16%, leading to a gain of growth in terms of labour force participation (0.14 points).

Table 14: Growth rates of labour force participation and social welfare

	2001/2007		
Quintiles	**Actual growth rate**	**Pro-poor growth rate**	**Gain(+)/loss(-)**
Poorest	-0.50	-0.09	0.42
Q2	-0.38	-0.04	0.34
Q3	-0.26	-0.04	0.22
Q4	-0.16	-0.03	0.13
Richest	-0.05	-0.02	0.02
Overall 2001/2007	-0.30	-0.16	0.14

Source: Author's calculations with ECAM II & III

Explaining growth rates of per capita real income in terms of the growth rates of labour market characteristics

The focus in this section is to explain the growth rate of real income per head in terms of the growth rates of labour market characteristics between 2001 and 2007 across quintiles.

For the poorest quintile, the growth of per capita income by 4.68 points is largely explained by the increase in the growth rate of daily income of household (4.60 points) followed by the employment rate (0.30 points) and days worked per employed person (0.29 points). Besides, the reduction in the participation rate of the labour force (-0.50 points) comes to slow down this growth in real income per capita among the poor people.

Concerning the richest quintile, it is interesting to note that the growth in per capita income of the household (5.84 points) is strongly explained by the growth in the average daily income of households (5.03 points) followed by the growth in the workdays per employed person in the household (1.21 points). On the other hand, this growth is slowed down by the significant reduction in the employment rate (-0.35 points) and the participation rate of the workforce (-0.05 points).

As for quintile Q2, we observe that the growth in the real income per capita (5.25 points) is largely explained by the growth in daily income of the households (4.78 points), followed by the number of days worked per employed person (0.46 points) and the employment rate (0.16 points). On the other hand, this growth is hindered by the reduction in the participation rate of the workforce (-0.38 points).

Quintile Q3 registers an income growth of 5.25 points, which is strongly explained by the growth in the daily income of households (4.85 points), followed by growth in the number of days worked per employed person (0.65 points) and the employment rate (0.02 points). However, the reduction in the participation rate of the workforce by 0.26 points slows down further increases in per capita income in this quintile.

Quintiles Q4 also registers an income growth of 5.48 points, which is explained for the greater part by growth in daily income (4.92 points) followed by the number of days worked per employed person (0.84 points). We underline that this growth is stalled by the losses of employment rate (-0.12 points) and participation rate of the workforce (-0.16 points).

Commonly, between 2001 and 2007, the growth in income per head (5.11 points) is largely explained by the growth in daily real income of the households (4.75 points), then by the number of days worked per employed (0.66 points) and the employment rate (0.01 points). We, however, note that this growth is slowed down by the reduction in participation rate of the workforce (-0.30 points).

Table 15: Explaining growth rates in per capita real income

	Quintiles					
Labour market characteristics	Poorest	Q2	Q3	Q4	Richest	Overall 2001-2007
Average daily earnings	4.60	4.78	4.85	4.92	5.03	4.75
Average days worked per employed	0.29	0.46	0.65	0.84	1.21	0.66
Household employment rate	0.30	0.16	0.02	-0.12	-0.35	0.01
Household participation rate	-0.50	-0.38	-0.26	-0.16	-0.05	-0.30
Total household per capita income	4.68	5.02	5.25	5.48	5.84	5.11

Source: Author's calculations with ECAM II & III

Explaining pro-poor growth rates per capita real income in terms of the pro-poor growth rates of labour market characteristics

The concern here is to explain pro-poor growth rates of real income per head in terms of pro-poor growth rate of labour market indicators across quintiles between 2001 and 2007.

For the poorest quintile, the pro-poor growth rate of 0.32 points in income per capita is largely explained by the pro-poor growth rate of daily income (0.39 points), then by the pro-poor growth rate of days worked per employed person (0.06 points). Besides, the fall in the pro-poor growth of participation rate (-0.09 points) and the pro-poor growth rate of employment (-0.04 points) intervene to limit this pro-poor growth in income per capita among the poor people.

Concerning the richest quintile, it is interesting to note that the growth in pro-poor per capita income of the household (0.62 points) is strongly explained by the pro-poor growth in daily income of households (0.58 points), followed by the pro-poor growth rate of workdays per employed person in the household (0.07 points). On the other hand, this growth is slowed down by the significant reduction in the pro-poor growth rate of participation of the workforce (-0.05 points) while the pro-poor growth rate of employment is negligible.

As for quintile Q2, we notice that the pro-poor growth rate of real income (0.44 points) is largely explained by the pro-poor growth rate of daily income of the households (0.46 points), followed by the pro-poor growth rate of the number of days worked per employed person (0.08 points) and employment rate (0.16 points). On the contrary, this pro-poor growth is slowed down by the reduction in the pro-poor growth rate of labour force participation (-0.04 points) and the pro-poor growth rate of employment (-0.05points).

Quintile Q3 registers a pro-poor income growth of 0.59 points, which is powerfully explained by the pro-poor growth rate of daily income of households (0.59 points), followed by the pro-poor growth rate of the number of days worked per employed person (0.10 points). However, the reduction in the pro-poor employment growth rate (-0.05 points) and in the pro-poor participation growth rate of -0.04 points holds back the gains in growth in this quintile.

Quintile Q4 also registers a pro-poor income growth of 0.53 points, which is strongly explained by the pro-poor growth rate of daily income of households (0.52 points), followed by the pro-poor growth rate of the number of days worked per employed person (0.08 points). It is important to underline that this pro-poor income growth is slowed down by pro-poor employment growth rate (-0.04 points) and the pro-poor participation growth rate of -0.03.

On the whole, between 2001 and 2007, the pro-poor growth in income per head (2.86 points) is largely explained by the growth in daily real income of the households (2.78 points), then by the number of days worked per employed (0.42 points). We, however, note that this growth is slowed down by the reduction in the pro-poor participation rate of the workforce (-0.16 points) and the pro-poor employment rate (-0.17 points).

Table 16: Explaining pro-poor growth rates in per capita real income

	Quintiles					
Labour market characteristics	Poorest	Q2	Q3	Q4	Richest	Overall 2001-2007
Pro-poor growth rate daily earnings	0.39	0.46	0.59	0.52	0.58	2.78
Pro-poor growth days worked per employed	0.06	0.08	0.10	0.08	0.07	0.42
Pro-poor growth household employment rate	-0.04	-0.05	-0.06	-0.04	0.00	-0.17
Pro-poor growth household participation rate	-0.09	-0.04	-0.04	-0.03	-0.02	-0.16
Pro-poor growth total household per capita income	0.32	0.44	0.59	0.53	0.62	2.86

Source: Author's calculations with ECAM II & III

5. Conclusion and policy implications

Having analysed the implications of changes in the labour market performance indicators for the pro-poor growth during the period before (1996-2001) and after the decision point of the heavily indebted poor countries initiative (2001-2007), we have also studied the growth of per capita income during the same period, with the aim to understand how the growth in per capita income relates to pro-poor growth. This study, which leans on the methodologies developed by Ravallion and Chen (2003) and Kakwani, Neri and Son (2010), permitted us to unveil the implications of specific employment sector growth and changes in labour market performance indicators for income growth, pro-poor growth and inequality in Cameroon in the periods 1996-2001 and 2001-2007. The key findings are:

(i) Growth was pro-poor in relative terms between 1996 and 2001 in Cameroon; it was accompanied by a decrease in social inequalities. On the other hand, between 2001 and 2007, growth was pro-poor in absolute terms in all the sectors considered. It was not enough to reduce social inequalities; growth was not pro-poor in relative terms.

(ii) On the whole, between 1996 and 2001, the growth in per capita income is explained by growth in employment rate, number of days worked per employed person, and participation rate of the workforce. However, this growth is slowed down by drop in daily income growth. Between 2001 and 2007, the pro-poor growth rate in real income of the households is largely explained by the pro-poor growth rate of daily real income of the households, followed by the pro-poor growth rate of number of days worked per employed persons. However, this pro-poor growth is slowed down by the decline in the pro-poor participation growth rate and the pro-poor employment growth rate.

(iii) For the poorest quintile, between 2001 and 2007, the pro-poor growth rate in income per capita is largely explained by the pro-poor growth rate of daily income, followed by the pro-poor growth rate of days worked per employed person in the household. Importantly, between 1996 and 2001, for the poorest quintile, the fall in pro-poor income per capita is largely explained by the fall in pro-poor daily income of the household followed by the pro-poor days worked by employed persons in the household.

(iv) Between 1996 and 2001, growth in the primary agricultural sector was non-pro-poor in relative terms. However, that in the formal, informal and secondary manufacturing sectors was pro-poor growth in relative terms. Between 2001 and 2007, the PPGR in the formal, informal and primary agriculture sectors was lower than the average growth rate, showing that although we had a pro-poor

growth in absolute terms in these sectors, it was not enough to reduce inequality considerably in Cameroon between 2001 and 2007. However, growth in the manufacturing sector was pro-poor in relative terms, and inequality-reducing.

On the bases of the results, we suggest the following policy recommendations:

(1) Given that pro-poor growth in relative terms among the poorest quintile is mainly explained by household daily incomes and days worked per week by employed individuals, policy interventions to increase household income per time period (for instance per day as used in this study or per month), and the number of days worked per employed person, are helpful. According to the Government of Cameroon (2009), invisible under-employment, which comprises employed labour force earning a wage lower than the Minimum Guaranteed Inter-occupational Wage, accounts for 64.8% of the active population, while visible under-employment which concerns the people working involuntarily less than the allowed weekly duration of 40 hours per week accounts for 11%. The problem of low earnings is more acute than that of hours/days worked per time period. Majority of poor people in Cameroon are sucked in informal employment with very unstable income positions. On the one hand, policy measures should ensure that workers are paid at least the minimum guaranteed inter-occupational wage for their work. Policy measures should ensure that wages are commensurate with work done.

The government should support the development and competitiveness of SMEs to boost their capacity to employ additional workers. Specific employment promotion programmes targeting the most under-privileged segments of the society (poor, youth, women, disabled persons, indigenous minority groups, etc) should be put in place. Fortunately, the Government of Cameroon in her recent public policy document has shown some awareness towards this direction.

(2) Increase employability and the quality of the labour force in poor households, because analyses reveals that the gains of growth are also slowed down by the reduction in the pro-poor growth rate of labour force participation and the pro-poor growth rate of employment. The General Employment Forum supported by the National Employment Fund and the Ministry of Employment and Vocational Training (MINEFOP) should work with the private sector, especially the growing communication and services sectors, to promote employment in underserved areas. The Ministry of Employment and Vocational Training and other stakeholders should work to improve the labour market information system in Cameroon, especially in underserved/poor areas. Good enough, the Government of Cameroon has included employment as one of the three main strategic components in her recent policy document (Growth and Employment Strategy Paper).

(3) Results reveal that the manufacturing sector is able to produce growth that is inequality-reducing (that is, pro-poor in relative terms). We suggest that the vision of the Rural Sector Development Strategy adopted by the Government of Cameroon in 2005 should be extended to handle issues of transformation/

processing of agricultural products. In a broader sense, Cameroon should promote industrialization and transformation of her products in order to harness the huge potential of this sector in reducing inequality and enhancing pro-poor growth in relative terms. Efforts geared towards the formalization of the large informal sector in Cameroon to allow the households who participate therein to fully take advantage of economic growth are also vital.

Notes

1. Growth in earnings here simply captures the growth in household income between two periods.
2. Since the growth pattern curve crosses the benchmark several times before the relevant headcount levels.
3. Research Centre in Development Economics.
4. The general presentation of the framework is at the Appendix.
5. PopCoef is constructed by multiplying the weighting coefficient (available in the two data sets) by household size and the sum total of the PopCoef variable for all sample households gives an estimate of the total population in the country.
6. See Appendix
7. In order to compare the poverty situation between 1996 and 2001, a new poverty threshold or line (185,490 CFA franc per year per adult equivalent) was estimated (Government of Cameroon, 2003).
8. Growth can be defined as pro-poor if the benefits of growth go to the poor proportionately more than to the non-poor. This way,pro-poor growth decreases income inequality.
9. This weighting scheme is implicit in the Gini index.

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Appendix

General presentation of the framework

Let y be the real income of an individual, which is a random variable with density function f(y). Then the real mean income of the population is given by:

$$u = \int_{o}^{+\infty} f(y)\,dy \qquad \text{(A1)}$$

Where y is the nominal income adjusted for prices. Its determination may depend on both regional price indices and consumer price indices, as prices can vary across regions and over time.

This way, the economic growth rate of a country, γ, can be measured by:

$$\gamma = \Delta \log(\mu) \qquad \text{(A2)}$$

This growth in mean income may affect each individual in the society differently.

Anchoring on the definition of pro-poor growth by Kakwani and Pernia (2000),[8] Kakwani, Neri and Son (2010) describe the pattern of growth by two factors: (i) the growth rate in mean income defined by γ and (ii) the changes in income inequality over time. Thus, to understand the pattern of growth, it is necessary to link economic growth with changes in income distribution. In order to establish this link, Kakwani, Neri and Son (2010) specify a social welfare function, which gives a greater weight to utility enjoyed by the poor compared to utility enjoyed by the non-poor. If *u(y)* is the utility function, which is increasing in y and concave, then a general class of social welfare function, w, can be written as follows:

$$W = \int_{0}^{+\infty} u(y)w(y)f(y)\,dy \qquad \text{(A3)}$$

Where *w(y)* is the weight given to the utility of the individual with income y.

But this social welfare function is not invariant to any positive linear transformation of the utility function. To solve this problem, an equally distributed equivalent level of income is defined following Atkinson (1970), in order to obtain a money-metric social welfare function denoted by $u(y^*)$ from Equation A3 as follows:

$$W = u(y^*) = \int_0^{+\infty} u(y)w(y)f(y)dy \quad \text{(A4)}$$

Where y^* is the equally distributed equivalent level of income, which allows every individual in the society to enjoy the same level of social welfare at the actual distribution of income.

The functions $u(y)$ and $w(y)$ are then specified to make pro-poor growth operational. The logarithmic utility function, given by $u(y) = \log(y)$, which is increasing and concave in y is used because of its attractive decomposability features; for example, the decomposition of growth rate in terms of some labour market characteristics. The weighting function $w(y)$ is specified to capture the relative deprivation that is suffered by the poor relative to the non-poor in the society. The greater the deprivation suffered by an individual with income y, the greater should be $w(y)$. This way, $w(y)$ should be a decreasing function of y and total weights given to all individuals should sum up to unity.

$$\int_0^{+\infty} w(y)f(y)dy = 1 \quad \text{(A5)}$$

A straight forward way to track relative deprivation is to assume that an individual's deprivation depends on the number of persons who are better-off than him/her in the society. Such a weighting scheme is given by:

$$w(y) = 2[1 - F(y)] \quad \text{(A6)}$$

Where, *F(y)* is the distribution function, which indicates that the relative deprivation suffered by an individual with income y is proportional to the proportion of individuals who are richer than this individual.[9] As indicated by Kakwani, Neri and Son (2010), it is easy to show that $w(y)$ in Equation A6 is a decreasing function and satisfies Equation A5.

Now replacing $u(y)$ by log(y) and $w(y)$ in Equation A4 by $w(y)$ in equation A6, we obtain the social welfare function below:

$$\log(y^*) = 2\int_0^{+\infty} [1 - F(y)]\log(y)f(y)dy \quad \text{(A7)}$$

Equation A7 can usefully be written as:

$$\log(y^*) = \log(\mu) - \log(I) \quad \text{(A8)}$$

Where $\log(I) = 2\int_0^{+\infty} [1 - F(y)][\log(\mu) - \log(y)]f(y)dy$, and I is a measure of inequality.

Taking first difference in Equation A8 gives:

$$\gamma^* = \gamma - g \qquad \text{(A9)}$$

Where $\gamma^* = \Delta \log(y^*)$ is the growth rate of money-metric social welfare y^*, which is the proposed measure of pro-poor growth; $\gamma = \Delta \log(\mu)$ is the growth rate of mean income μ; and $g = \Delta \log(I)$ is the change in income inequality as measured by I. Equation A9 is a growth pattern which links growth rates in mean income with changes in income inequality.

From equation (A9), if g is positive, then growth is accompanied by an increase in inequality. Here $\gamma^* < \gamma$ implying a loss of growth due to the increase in inequality. If g is negative, then growth is accompanied by a decrease in inequality. In this case, $\gamma^* > \gamma$, which indicates a gain in growth rate due to the decrease in inequality. Growth is pro-poor (or anti-poor) if there is a gain (or loss) in growth rate.