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Rural-Urban Population Shifts and Poverty Alleviation in Rural Cameroon*

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Abstract: This paper uses non-parametric estimates to set poverty lines and assesses the relative importance of within- and between-zone components in accounting for aggregate poverty trends. The Shapley Value decomposition rule and three Cameroon household consumption surveys collected by the Government's Statistics Office are used. Within-zone effects are more instrumental in accounting for aggregate changes in all the Pa class of poverty measures than the inter-zone population shifts in the period 1984-2001. The inter-zone effects are, however, non-negligible and systematically contribute in alleviating or at least mitigating rural poverty, while aggravating urban poverty. This result highlights the potential role rural-urban migration might play in alleviating rural poverty. These results have implication for public policy at a more aggregate level that favours agricultural modernisation and transformation as a credible and sustainable means of stimulating economic activities to a scale that can

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simultaneously bring about agriculture-based industrialisation and address the recurrent hikes in food prices.

Keywords: Cameroon, household surveys, migration, poverty, Shapley Value Decomposition

Introduction

Subsequent to the sustained growth, which Cameroon experienced up to the middle of the 1980s – accomplishing an annual average growth of 7 percent over a ten year period (Government of Cameroon, 2003), the situation deteriorated from 1986 onwards and the country suffered a severe economic and social crisis. The harshness of the crisis precipitated the abandonment of the long-term planned development system pursued since the early 1960s, and the adoption of the IMF/World Bank medium-term structural adjustment programmes (SAP) from 1988.[1] The crisis also led to considerable shortfalls in public finances, making it difficult for the government to vigorously pursue its development strategy. Even some of the achievements in terms of infrastructure deteriorated for lack of maintenance (Baye and Amungwa, 2002). Many of the rural infrastructures, notably development projects, put in place by the state collapsed, thereby aggravating the poverty of the people that benefited from those services and stirring up inter-regional movements in search of livelihood opportunities.

Cameroon achieved macro-economic stability subsequent to the 1994 devaluation of the CFA franc. Yet rural incomes were slow to improve because much of the acreage under coffee and cocoa had been abandoned, in addition to the typically low short-run elasticities of supply of these commodities. Moreover, salary cuts, short-term inflationary effects of devaluation, and the retrenchment of public sector workers,

[1] For a succinct presentation of the planned development policies executed through Five-year Development Plans in Cameroon, see Baye and Fambon (2001).

eroded the real purchasing power of most Cameroonians.

Poverty alleviation, however, became a major policy concern in Cameroon following the achievement of macro-economic stability that was occasioned by the devaluation. Concerns about poverty issues were strengthened in the latter part of the 1990s as social considerations were progressively appended to the objectives of the initial SAPs. The acknowledgment of this in Cameroon can be traced to when the Enhanced Structural Adjustment Facility (ESAF) (schedule for 1997-2000) was converted to the Poverty Reduction and Growth Facility (PRGF) in 1999. This was further confirmed when the IMF and World Bank Boards nominated Cameroon for the enhanced HIPC initiative in May 2000 and when Cameroon subsequently reached the decision point in October 2000 and the completion point in April 2006.

Cameroon started benefiting from debt relief partially from 2000 and fully from April 2006. A good portion of the savings emanating from this initiative is targeting social sectors (education, health, basic infrastructure) as enshrined in the PRSP, which was approved by the IMF and World Bank Boards in July 2003. Government efforts are now geared towards achieving higher and sustainable growth, increasing the quality of public expenditures, enhancing the effectiveness of targeted policies and improving the overall state of governance. With these efforts, the government intends to significantly reduce poverty in the country in line with the millennium development goals. To improve the coordination of these efforts, however, there is an ever growing need to refine poverty measurements and to take into account potential opportunities offered by rural-urban linkages.

Overall poverty in Cameroon deepened in the period 1984-1996 and rural poverty remained more widespread, deeper and severer than urban poverty (Baye, 2006a; Fambon et al, 2005). As observed in Baye and Amungwa (2002), the increasing level of poverty in rural communities induced many young people to migrate into cities and larger towns where they expect to find better conditions. More generally, as argued in Baye

and Fambon (2002), the economic crisis and the immediate effects of SAPs amalgamated and forced many Cameroonians to adopt coping devices such as moonlighting, seeking for survival in the informal sector, occupational and geographical mobility, changing regional patterns of activities and productivity, and adopting "behavioural innovations", which included corruption and other malpractices for survival.

These adaptations are thought to have modified the pattern of well-being among households in the different regions and sectors of activity. The evaluation of these changes in well-being and the investigation of the relative importance of mobility between zones and zonal specific effects on measured poverty trends are of interest to both analysts and the political entrepreneurs, who want to better understand how poverty and its components are transmitted. Such results may inform policymakers on potential options for the poor to leave poverty.

The only studies that tackle some aspects of inter-temporal monetary poverty changes are National Institute of Statistics (2002); Baye (2006a, 2006b) and Fambon et al. (2005). Very little (if any) is known about the exact contributions of within-and between-group components of trends in aggregate poverty using the 1984, 1996 and 2001 household surveys simultaneously. Such knowledge is required to inform public policy, especially in an era when poverty reduction is gaining prominence in the political and economic agenda.

The approach used in this paper performs exact decomposition of changes in aggregate measured poverty that hinge on the Shapley Value - a celebrated solution concept in the theory of cooperative games. Before carrying out the decomposition exercise, however, we set poverty lines using the traditional cost-of basic needs method non-parametrically. Fambon *et al*. (2001) and Baye (2005) employ a blend of the food-energy-intake (FEI) and the cost-of-basic-needs (CBN) methods using non-parametric techniques to compute poverty lines. The poverty lines derived in this way, however, still suffer from the problem of

inconsistency highlighted in Ravallion and Bidani (1994).[2]

To better inform public opinion during policy changes that affect living standards, it is necessary to properly set poverty lines and measure poverty trends and their components − notably the within-and between-group effects. The between-group effects on rural poverty will indicate the potential role migration might play in the process of poverty eradication. In the inter-temporal decomposition proposed by Ravallion and Huppi (1991) and applied in Balisacan (1995) among others, for instance, the factors contributing to changes in poverty could be variations in within- and between-subgroup effects. Yet these components in the original decomposition do not form a partition since an interaction term is usually appended to ensure the identity of the decomposition.

Section 2 outlines a conceptual framework of rural-urban linkages by appealing to dual economy models. Section 3 dwells on the frameworks for exact sectoral decomposition and non-parametric poverty lines, as well as presenting the household survey data and the adjustments made. Section 4 presents the empirical results and concluding remarks are submitted in Section 5.

Rural-Urban Linkages: A Conceptual Framework

The framework for understanding rural-urban linkages can be offered by dual economy models. The classic dual economy model was put forward by Lewis (1954) and later formalized by Fei and Ranis (1964). The model highlights the need to distinguish the agricultural and industrial sectors and the problem of labour movement between them. Dual economy models can proffer an insight into the long-run growth

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[2] Some effort has been made in the past in constructing poverty lines and profiles for Cameroon (see for example, Njinkeu *et al*., 1997; World Bank, 1995; UNDP, 1998; Baye, 1998; National Institute of Statistics, 2002). A major weakness with these endeavours is the use of a very limited basket of goods and/or the absence of sufficient transparency in the process of setting poverty lines.

process by focussing on the transfer of labour across sectors, typically between a traditional agricultural sector and a modern industrial sector. There are two strands of dual economy models – the classical and neoclassical.

In the classical model, there is surplus labour in the rural sector; in the neoclassical model, marginal products are equated across sectors. Surplus labour assumes two features – that the marginal product of individual labourers in agriculture is low, and possibly zero, and that agricultural incomes exceed this marginal product because rural households share the returns to land as well as labour. The implication is that withdrawing farmers from the rural economy would not necessarily impact on overall food production. In the classical model, the agricultural sector, at its subsistence level, has surplus labour which moves gradually into the modern industrial sector. The labour absorption of the industrial sector depends on the rate of capital accumulation and hence profit levels, which are by assumption, reinvested. Full employment is finally reached when all the surplus labour from the agricultural areas has been absorbed into industry.

In these models, agriculture has a useful role in the overall growth process. In the neoclassical model, especially as characterized in Aswaran and Kotwal (1993), agriculture is the key route to growth and the only route to poverty reduction. In the classical model, the role of agriculture is arguably more indirect, initially as a means of feeding urban growth. As argued by Ranis (2003), dualism, especially focused on its labour market dimension, continues to offer a theoretically valid framework for dealing with early stage development in many developing countries. As pointed out by Kuznets (1966), in the process of economic development there is a shift away from agriculture towards manufacturing and services both in terms of value added and work force structure.

These processes invariably involve population shifts from rural to urban areas. Population shifts may impact on poverty, but the direction of the impact is likely to be an empirical issue – perhaps affecting the

destinations differently from the origins. The impact of population shift on the configuration of poverty changes may depend, at least in part, on the presence or absence of remittances associated with the population shift. However, as observed in Baye (2006), whether remittances are received or not, migration in the face of rural underemployment will invariably lead to increases in rural consumption expenditures per capita. The various methodological frameworks are considered in what follows.

Methodological Frameworks

In this section, we present the sectoral decomposition framework of poverty trends, the non-parametric methods used in computing poverty lines, and the adjustments made in the three Cameroon household surveys that subsequently give empirical content to the frameworks.

Sectoral Decomposition of Poverty Changes

Use is hereby made of the P_α class of poverty measures to identify the factors underlying the observed changes in aggregate poverty between two dates, t and $t+n$.[3] The factors explored here are the intra- and inter-regional contributions to any observed changes in poverty. If f_α

[3] The P_α class of poverty measures has the desirable property of sub-group consistency. The implication of this property is that overall level of poverty would fall, *ceteris paribus*, whenever poverty decreases within some subgroups of the population and is unchanged outside those groups (Balisacan, 1995; Foster and Shorrocks, 1991). This class of poverty measures is additively decomposable in the sense that aggregate poverty level is simply a weighted average of sub-group poverty levels, the weights being their population shares. For instance, for a policy change that increases the incomes of a group and reduces those of another group, one can work out the impact of the change on each group's average poverty level and then use the groups' respective population shares to estimate the new aggregate poverty level.

and $P_{\alpha g}$represent the population share and poverty level of subgroup $g \in G$, the property of subgroup decomposability of the P α class of poverty measures enables us to write the expression $P_{\alpha,t} = \sum_{g \in G} f_{g,t} P_{\alpha g,t}$. The aggregate change in poverty between period *t* and *t*+*n* yields:

$$\triangle P_{\alpha} = \sum_{g \in G} [f_{g,t+n} P_{\alpha g,t+n} - f_{g,t} P_{\alpha g,t}] \quad (3)$$

The goal here is to account for the overall change in poverty, $\triangle$ P $_{\alpha}$, in terms of changes in poverty within subgroups, $\triangle P_{\alpha g} = P_{\alpha g,t+n} - P_{\alpha g,t}$, $g \in G$, and the population shifts between subgroups, $\triangle f_g = f_{g,t+n} - f_{g,t}$, $g \in G$,

Ravallion and Huppi (1991) exploit the additive decomposability of the P_{α} class of poverty measures to throw light on the relative importance of changes within subgroups versus changes between them. Their decomposition of the aggregate poverty change is not exact because it requires an interaction term to establish its identity. To purge the meaningful components contaminated by the interaction term, an appeal can be made to the Shapely Value decomposition rule.

Following the Shapley value decomposition framework proposed by Shorrocks (1999) and applied by Baye (2006a), the exact within-region effects $\phi_{\alpha W}^{Sh}$ and between-region effects $\phi_{\alpha B}^{Sh}$ of aggregate poverty changes are given in Equations 4 and 5, respectively.

$$\phi_{\alpha W}^{Sh} = 0.5 \sum_{g \in G} [f_{g,t} + f_{g,t+n}] \triangle P_{\alpha g} \quad (4)$$

$$\phi_{\beta W}^{Sh} = 0.5 \sum_{g \in G} [P_{\alpha g,t} + P_{\alpha g,t+n}] \triangle f_{\alpha g} \quad (5)$$

Equation 3 explaining the overall change in poverty can now be rewritten in terms of exactly two components: changes in poverty within-regions and between-region population shift effects as

$$\triangle P_{\alpha} = \phi_{\alpha W}^{Sh} + \phi_{\beta W}^{Sh} \quad (6)$$

In contrast with the original sectoral decomposition suggested by

Ravallion and Huppi (1991), there is no interaction term in the Shapley decomposition in Equation 6. In the empirical analysis "g" corresponds to urban, semi-urban and rural and the set G is {urban, semi-urban, rural}.

Setting Poverty Lines in Cameroon using CHCS 2001

The two traditional approaches for setting absolute poverty lines are the cost-of-basic needs (CBN) and the food-energy-intake (FEI) methods.[4] Both methods anchor the definition of basic needs to food energy requirements. In this paper, we compute the unit cost per calorie-intake and upgrade it to meet some recommended minimum level of calorie-intake to obtain the food poverty line. To obtain the overall poverty line, we use two hybrids of the CBN method − one consisting in evaluating the "non-food essential expenditures" per adult equivalent and the other consisting in estimating a non-parametric regression of *pseudo* total expenditures on food expenditures.

Food Poverty Line

Yaoundé (the capital city) was chosen as the reference region in the process of computing poverty lines using the 2001 household survey as the base. About 99 % of the well over 170 food items captured in the CHCS 2001 and their corresponding calorie contents per 100g obtained from another source (see, Fambon et al., 2001) were employed in the estimation of the food poverty line. The exercise was painstaking because it involved the incorporation of calories per 100g item by item in the product file.[5] Since both expenditures and quantities were generally

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[4] For the conceptual difficulties involved in setting poverty lines by the CBN and the FEI methods, see Ravallion and Bidani (1994); Ravallion (1998).

[5] It is perhaps worthwhile to mention that codes associated with food items were changed to those found in the document containing calorie values before carrying out the analysis.

captured by the survey, information on calories was then used to calculate the amount of calories per food product purchased. In the few cases where quantities of food items were expressed in traditional measurement units, use was made of price data per kilogram collected in Yaoundé in 2001 alongside the household survey. In these cases, we divided expenditures on the food items by the price per kilogram to estimate quantities purchased before evaluating their calorie contents.[6] Annual calories per food item were then aggregated per household and transferred to the household file of CHCS 2001.

We proceeded by eliminating the influence of outliers in favour of the typical expenditure patterns of households in the reference region. Household total expenditures in Yaoundé were arranged into deciles and the first and last three deciles were eliminated because they are likely to exhibit atypical expenditure patterns. The chosen group of households is, therefore, those who find themselves between the first and seventh deciles in terms of total expenditures per adult equivalent. Aggregate food expenditure and the corresponding aggregate calorie-intake of the reference group of households were computed. The cost per calorie-intake was then derived by dividing aggregate food expenditure by aggregate calorie-intake. The food poverty line is obtained by multiplying the unit cost of calorie-intake by the recommended minimum daily nutritional anchor for an adult to ensure normal activity (2400 kcal per day for Cameroon according to FAO).

$$UCCI = \frac{\sum_{j=1}^{n} FE_j}{\sum_{j=1}^{n} CI_j} \qquad (7)$$

6 The annual quantities of calories per food item were obtained taking into consideration the periodicity and frequency of purchases as elicited during the survey. As an example, if periodicity is a month and the frequency is three times a month, then the annual quantity of calories = the number of calories of the food item x 3x12.

where, *UCCI* is unit cost of calorie-intake of the reference group, j = 1, ⋯, n are households in the reference group, *FE* is food expenditure, and CI is calorie-intake.

$$Z_F = RMDA * UCCI \quad (8)$$

where Z_F is food poverty line per adult equivalent per day, and RMDA is the recommended minimum daily allowance in terms of energy for an adult to carry out normal activity.

Overall Poverty Lines

The overall poverty line is obtained by scaling up the food poverty line with allowances for non-food basic necessities. The non-food basic necessities taken into consideration were clothing and foot-wear, health, education and imputed rents. The two hybrids of the CBN approach used in this study can be labelled: (1) the adult equivalent non-food essential expenditure method, and (2) the non-parametric regression method.

The Adult Equivalent Non-Food Essential Expenditure Method

This method consists in using expenditures on non-food basic necessities of the reference households to derive the non-food poverty line per adult equivalent, which is then added to the food poverty line to obtain an overall poverty line. The sum of expenditures on non-food basic necessities of the reference group of households is divided by the corresponding sum of adult equivalent household sizes, to obtain the non-food poverty line per adult equivalent. More compactly:

$$Z_{NF} = \frac{\sum_{j=1}^{n} NFEE_j}{\sum_{j=1}^{n} AEHS_j} \quad (9)$$

where, Z_{NF} is non-food poverty line per adult equivalent, j = 1, ⋯, n are households in the reference group, NFEE is non-food essential expenditure, and AEHS is adult equivalent household size. The overall poverty line is given by the sum of the food poverty line and the non-food poverty line ($Z_U = Z_F + Z_{NF}$).

The Non-Parametric Regression Method

We also use a "non-parametric" regression of the *pseudo* total expenditures on food expenditures following the logic of the parametric regression proposed by Ravallion (1992; 1994), Ravallion and Bidani (1994), and Ravallion (1998) to derive non-food components of the overall poverty line. The *pseudo* total expenditures are obtained by taking the sum of food and the non-food essential expenditures per adult equivalent. After computing the food poverty line as proposed above, the second stage involves calculating the *total* expenditures of those whose food expenditures equal the *food* poverty line using a non-parametric regression method

The advantages of a "non-parametric" regression over a parametric one are that: (1) they do not impose *a priori* functional forms, and (2) the procedure applies a local weighting process that attributes smaller weights as the absolute gaps between individual food expenditures and the food poverty line increase. The results obtained by this method are, therefore, less affected by the presence of "outliers" in the data and thus do not suffer significantly from specification bias that originates from a "wrong" functional form (Yatchew, 1998). The "non-parametric" regression is performed using "DAD4.4: Software for Distributive Analyses".[7] We use the Nadaraya-Watson estimator, an option provided in DAD4.4. The Nadaraya-Watson non-parametric technique estimates regression functions based on data (X_i, Y_i). The equation produces an estimate for Y at any

[7] Developed by Duclos, Araar, and Fortin (2004), researchers in Université Laval, Quebec, Canada.

requested value of X (not necessary the ones in the data), using as input (1) the data set (X_i, Y_i), and (2) a kernel function describing the weights to be put on values in the data set near the requested X-value in estimating Y (see, Nadaraya, 1964 and Watson, 1964).

Presentation of Household Surveys and Adjustments

Presentation of Surveys

This paper is based on three household surveys: the 1984 budgetary and consumption survey (BCS) (DSCN, 1984), September 1983 − September 1984; the 1996 Cameroon Households Consumption Survey (CHCS I) (DSCN, 1996), February − April 1996; and the 2001 Cameroon Households Consumption Survey (CHCS II, 2001), September − December 2001, carried out by the Government Statistics Office under different appellations.

These snapshots represent points before, during and after SAPs in which household surveys are available. These surveys are different in a number of respects: the duration − one year for the first survey; three months for the second; and four months for the third. The CHCS II covered all 10 provinces of Cameroon, and was conducted in both urban and rural areas using a sample of 12000 households, of which 10992 were actually visited. In all, data were collected for 22 strata − 10 rural and 12 urban. In particular, Yaoundé and Douala were considered as separate strata, then each of the ten provinces was divided into two strata − one rural and one urban. By contrast, for the CHCS I, the country was divided into six strata (Yaoundé, Douala, Other Towns, Forests, High Plateaus, Savannah) and the sample size was 1800 households, of which 1731 were actually interviewed. The sample size was 5474 households for the 1984 BCS. The strategy was to adjust stratification in the 1984 and 2001 survey data to approximate the nomenclature of the 1996 household survey (Appendix 1). There is no doubt that the adjustments made are not comparable 100%, but it appears to be the most reasonable

rearrangement.

The sampling frames of both CHCS I and CHCS II are based on the 1987 general population and housing survey augmented to correct for its age, while the 1984 BCS was based on the 1976 General population and housing census (GPHC). They are similar in (1) the partitioning of the various regions, in the sense that the 1984 and the 2001 surveys could easily be regrouped to mimic the structure of the 1996 survey, and (2) the sampling techniques used. To select households in semi-urban and rural areas in the three surveys, a three-stage sampling frame was adopted following the sequence City-primary sampling unit-household. As concerned the political and economic capitals (Yaoundé and Douala), a two-stage stratified probabilistic sampling was carried out to select households.

The recall period in the 1984 and 1996 surveys was 7 days for both rural and urban areas. The National Institute of Statistics (2002) adjusted the 2001 survey data to reflect the same 7 day recall period for rural and urban areas by using a multiplicative correction factor to adjust for declarations made by rural households.

The welfare indicator used is expenditures per adult equivalent. Since the composition of households by age was captured by the surveys, we followed previous studies in Cameroon to adopt a hybrid of the Oxford Equivalent Scale by attributing adult equivalent scales of 0.5 for household members aged below 15 years and 1 for those aged 15 and above. This adult equivalent scale is consistent with 2400 kcal per adult per day to ensure normal activity.

Spatial Harmonization

There are price differences for the same commodity from region to region due to transport cost. Typically, food products are less expensive in rural than urban areas, while manufactures tend to be more expensive in rural than urban areas. In this regard, CFAF 100 in Yaoundé is not worth the same as CFAF 100 in vekovi (in the Northwest Province). To

account for inherent price differences, Yaoundé was chosen as the reference region, and then a purchasing power parity spatial price index was used to deflate household expenditure per adult equivalent per day of the different regions to render them comparable with Yaoundé prices. The implicit assumption is that the structure of regional price differences has not changed significantly in the period 1984-2001.[8]

Yaoundé was chosen as the reference region because of the representativeness of the chosen products and availability of reliable price data in Yaoundé. In the computation, a price index of 0.84 in urban Southwest Province implies that the basket of goods that cost CFAF 1000 in Yaoundé will cost CFAF 840 in urban areas in the Southwest Province.

Inter-temporal Harmonization

The 1984 and 1996 total expenditures were scaled up, employing consumer price indices, to express them in terms of 2001 prices to enable us use the poverty line computed from the 2001 survey for the three periods.[9] For all practical purposes, these surveys are considered suitable

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[8] The purchasing power parity index was computed by National Institute of Statistics from the price component of the CHCS II data. In the exercise, prices were collected on a national basket of about 150 products present in the different regions of the country for both urban and rural areas. In particular, Yaoundé and Douala set aside, price indices were computed for urban and rural areas for the 10 provinces of Cameroon. Applying the 2001 regional price indices for the 1996 survey is a straight forward exercise since in both years Cameroon already had 10 provinces. In 1984 Cameroon had only seven provinces. The three Northern provinces were called the Grand North Province and the present Centre and South provinces was simply the Centre-South Province. Simple arithmetic averages for urban and rural areas were used for localities in the Grand North and Centre-South provinces in the 1984 survey data, *mutatis mutandis*.

[9] Another possibility is to use the three household surveys to calculate price indices in each year of 1984, 1996, and 2001, which are relevant to low

for the present study.

Measures of Well-being

In the literature of poverty analysis, an appropriate poverty measure must reflect three basic elements: the incidence (or prevalence) of poverty, as measured by the number in the total population living below the poverty line; the intensity (or depth) of poverty, reflecting the extent to which the well-being of the poor lie below the poverty line; and the degree of inequality among the poor (or severity)[10] (World Bank, 1990). A class of poverty indices that meets the aforementioned requirements in a stepwise fashion is the P_α class of poverty measures proposed by Foster, Greer, and Thorbecke (1984). The parameter a takes the value of zero for the headcount index (P_0), 1 for the poverty gap (P_1) and 2 for the squared poverty gap (P_2).[11]

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income households. In this case, Fischer indices could have been the first best alternative approach to use in scaling up the 1984 and 1996 household expenditures in terms of 2001 prices, but Fischer indices also require data on disaggregated quantities, which are unavailable in the 1984 survey data, and prices are unavailable for rural areas in the 1996 survey data. We therefore consider our choice of consumer price indices as a second best approach. The most delicate step here is the deflation of household expenditures. Overestimating the deflator implies overestimating the decrease in mean incomes and overestimating the change in poverty. The reverse is true if the deflator is underestimated.

[10] This element is reflected in the properties of distributional sensitivity and strong monotonicity. Distributional sensitivity is the idea that transferring income from the poorest to the better-off poor should raise measured "poverty", and strong monotonicity requires that increasing some poor person's income, while holding the other poor person's income constant, should necessarily reduce poverty.

[11] The P_0 measure is appealing because it is easily interpreted. However, it does have clear limitations because it is entirely insensitive to the *degree* of

Empirical Results

Estimates of Poverty Lines

As shown in Table 1, the average price per 100 kcal was about 9.23 CFA francs in Yaoundé in 2001. With a daily minimum calorie-intake of 2400 kcal per adult, a food poverty line of 221.52 CFA francs per adult equivalent per day is obtained. The non-food poverty line was 292.16 using the adult equivalent non-food essential expenditure method, which scales up the food poverty line to yields an overall poverty line of 513.68 CFA francs per adult equivalent per day. This poverty line is fascinatingly closely comparable with the overall poverty line of 509.41 CFA francs per adult equivalent per day generated using the non-arametric regression technique (Table 1 and Figure 1).

When the entire distribution is used (last column of Table 1), the average price per 100 kcal becomes 10.82 CFA francs and the food poverty line is fixed at 259.68 CFA francs per adult equivalent per day. Using the adult equivalent non-food essential expenditure method we obtain a non-food poverty line of 460.32 CFA francs per adult equivalent per day and an overall poverty line of 720 CFA francs per adult equivalent per day. The corresponding non-parametric regression generates an overall poverty line of 549.20 CFA francs per adult equivalent per day in Yaoundé. However, to eliminate the effects of outliers from the food poverty line, we are inclined to prefer the food

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poverty. The P_1 measure addresses this shortcoming to an extent because it reflects the distances between well-being levels of the poor and the poverty line, or the depth of poverty. This measure is attractive from a policy perspective because Z. P_1 gives an indication of the potential minimum average resources that could be deployed to lift an individual out of deprivation assuming perfect targeting. The P_2 measure differs in that it applies an increasing weight to distances below the poverty line, which makes it particularly sensitive to the severity of poverty. Although difficult to interpret, it is useful in poverty comparisons.

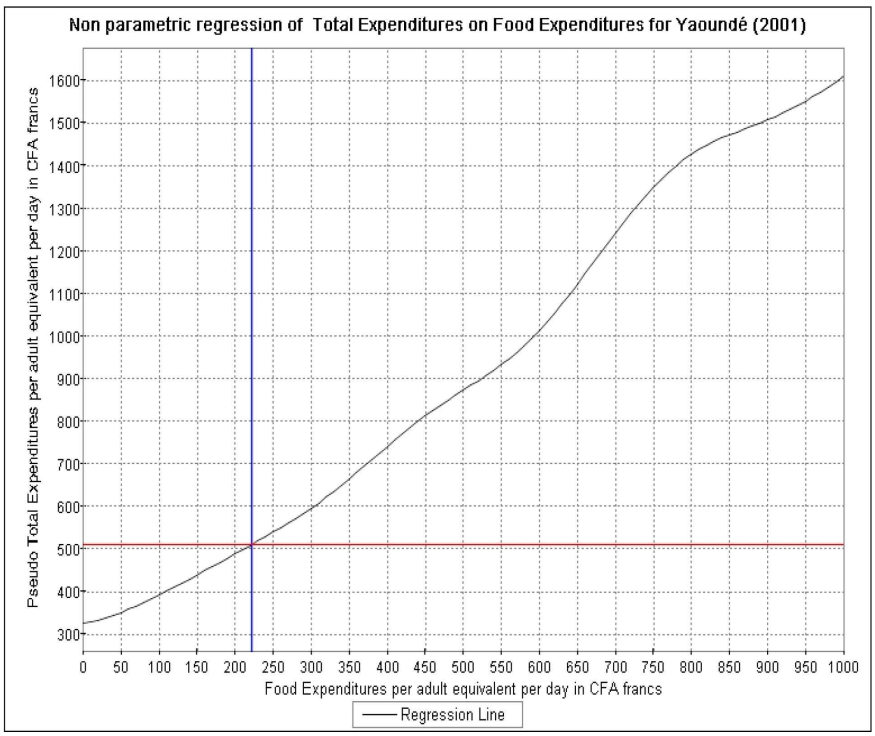
poverty line estimated when the first and last three deciles are excluded. Following the perceived conceptual advantages of the non-parametric regression technique, we prefer to use the overall poverty line (Zu= 09.41) in subsequent analyses.

Table 1. Food and Overall Poverty Lines for the Reference Region (Yaoundé)

Variables	Estimates	
	Excluding first and last three deciles	Including the entire Distribution
For Food Poverty Line:		
Sum of annual food expenditures of households (FE)	482483211	933414953
Sum of annual kilocalorie-intake by households (CI)	5229911249	8625826238
Unit cost of calorie-intake (UCCI)(inCFAfrancsperkcal)	0.0923	0.1082
Recommended daily allowance (RDA) (in kcal)	2400	2400
Food Poverty Line (Z_F)	*221.52*	*259.68*
For Overall Poverty Line:		
The adult equivalent non-food essential expenditure method		
Sum of annual non-food essential expenditures (NFEE)	294906694	744730485
Sum of adult equivalent household sizes (AEHS)	2765.5	4432.5
Non-food Poverty line (Z_{NF})	*292.16*	*460.32*
Overall Poverty Line (Z_u)	*513.68*	*720.0*
Non-Parametric Regression Method		
For the restricted sample, when Z_F=221.52Î]220, 230[, Z_uÎ]507.86, 518.07[		
For the full sample, when Z_F=259.68Î]250, 260[, Z_uÎ]538.88, 549.5[		
Overall Poverty Line (Z_u)	*509.405 (19.731)*	*549.20 (18.646)*

Source: Computed by author using CHCS 2001 survey data.
Notes: Number of observations used in computing the food and non-food poverty lines is 658 after eliminating the first and last three deciles in terms of total expenditures per adult equivalent. Number of observations in the non-parametric regression is 1095 households. Poverty lines are expressed in CFA francs per adult equivalent per day. The figures in parentheses are standard errors.

Figure 1. Non-Parametric Regression of Total Expenditures on Food Expenditures



Source: Constructed by author using the CHCS 2001 survey data and DAD4.4

Aggregate Poverty Trends and Within- and Between-Zone Components

Table 2a presents the P_a class of poverty indices for Cameroon as a whole and for the urban, semi-urban and rural areas spanning the period 1984-2001. Poverty increased by 20.4 percentage points (from 35.8% to 56.2%) between 1984 and 1996 and fell by 15.5 percentage points to attain 40.7% in 2001. Despite the fall in poverty between 1996 and 2001, national poverty remained more widespread, deeper and severer in 2001 than it was in 1984. The same pattern of evolution was observed in urban and rural areas for the incidence, intensity and severity of poverty. The exception is only in semi-urban areas for the intensity and severity of

Table 2a. Zonal Evolution of the P_a Class of Poverty Measures

Zone	1984				1996				2001			
	Pop. Share	P_0	P_1	P_2	Pop. Share	P_0	P_1	P_2	Pop. Share	P_0	P_1	P_2
Urban	0.112	0.009	0.002	0.001	0.297	0.265	0.074	0.031	0.348	0.208	0.056	0.023
	(0.020)	(0.003)	(0.001)	(0.000)	(0.027)	(0.029)	(0.010)	(0.005)	(0.024)	(0.011)	(0.004)	(0.002)
Semi-Urban	0.176	0.253	0.083	0.038	0.052	0.468	0.141	0.059	0.082	0.294	0.081	0.033
	(0.045)	(0.043)	(0.018)	(0.010)	(0.024)	(0.111)	(0.041)	(0.019)	(0.010)	(0.020)	(0.007)	(0.004)
Rural	0.712	0.440	0.141	0.062	0.651	0.706	0.257	0.120	0.570	0.545	0.184	0.085
	(0.044)	(0.028)	(0.014)	(0.008)	(0.043)	(0.042)	(0.023)	(0.014)	(0.028)	(0.020)	(0.012)	(0.008)
National	1.0	0.358	0.115	0.051	1.0	0.562	0.197	0.090	1.0	0.407	0.131	0.059
		(0.027)	(0.012)	(0.006)		(0.034)	(0.017)	(0.010)		(0.015)	(0.008)	(0.005)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Overall poverty line = 509.41 CFA francs per adult equivalent per day. Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Figures in parentheses represent standard errors. Stratification and clustering in the surveys were taken into consideration when setting the sample designs.

Table 2b. Zonal Evolution of the Head Count Index (Poverty line = 513.68 CFA francs per adult equivalent per day)

Zone	1984		1996		2001	
	Pop. Share	P_0	Pop. Share	P_0	Pop. Share	P_0
Urban	0.112	0.011	0.297	0.267	0.348	0.211
	(0.020)	(0.004)	(0.027)	(0.028)	(0.024)	(0.011)
Semi-Urban	0.176	0.256	0.052	0.481	0.082	0.299
	(0.045)	(0.042)	(0.024)	(0.112)	(0.010)	(0.020)
Rural	0.712	0.447	0.651	0.715	0.570	0.553
	(0.044)	(0.037)	(0.043)	(0.042)	(0.028)	(0.020)
National	1.0	0.365	1.0	0.570	1.0	0.413
		(0.050)		(0.037)		(0.015)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Figures in parentheses represent standard errors. Stratification and clustering in the surveys were taken into consideration when setting the sample designs.

poverty. As shown in Tables 3a to 5, aggregate poverty changes over the period 1984-1996 and 1996-2001 were statistically highly significantly different from zero.

To check for robustness, it is interesting to compare the incidences of poverty based on the non-parametrically derived poverty line (Zu=509.41) and those based on the adult equivalent non-food essential expenditure method (Zu=513.68). The incidences of poverty in 1984, 1996 and 2001 at the national level are 35.8, 56.2 and 40.7 percent using Z_u=509.41 and 36.5, 57.0 and 41.3 percent using Z_u=513.68, respectively (Tables 2a and 2b). The differences between these head count indices are only 0.7, 0.8 and 0.6 percentage points, respectively. Disaggregating the prevalence of poverty at the level of zones indicate that the differences remain minimal. In both cases, the rural areas register poverty rates that are higher than the national average. On the basis of the numerical differences of the head count indices, the two poverty lines yield very similar results and there is no guidance as to the poverty line to adopt. The only indication in choosing the poverty line to use for further analysis is the perceived conceptual advantages of the non-parametric regression technique.

Table 3a submits a sectoral decomposition of the 20.4 percentage points increase of the head count index between 1984 and 1996, as well as the 15.5 percentage point decrease of the head count index between 1996 and 2001. Of the 15.5 percentage points decline in the head count index in the period 1996-2001, rural areas significantly accounted for up to-14.9 points which were attributed to both within-zone effects (-9.8 points) and between-zone effects (-5.0 points). The absolute contributions of urban and semi-urban areas to alleviating the incidence of poverty were favourable, but much lower and statistically non-significant in both cases. While all the intra-zone effects contributed favourably, the inter-zone population shift effects lessened the urban and semi-urban contributions to the declining incidence of poverty.

Table 3a. Zonal Decomposition of Changes in the Head Count Index (ΔP_0) into Within and Between Group Effects

	Shapley Decomposition Approach					
	1984-1996			1996-2001		
Zone	Intra-zone effects	Inter-zone effects	Impact on ΔP_0=0.204	Intra-zone effects	Inter-zone effects	Impact on ΔP_0=-0.155
Urban	0.052	0.025	0.078**	-0.019	0.012	-0.007
	(0.000)	(0.000)	(0.012)	(0.000)	(0.000)	(0.013)
Semi-Urban	0.024	-0.045	-0.020	-0.012	0.011	-0.000
	(0.000)	(0.000)	(0.016)	(0.000)	(0.000)	(0.013)
Rural	0.181	-0.035	0.146**	-0.098	-0.050	-0.149**
	(0.000)	(0.000)	(0.052)	(0.000)	(0.000)	(0.046)
National	0.258	-0.054	0.204**	-0.128	-0.027	-0.155**
	(0.000)	(0.000)	(0.043)	(0.000)	(0.000)	(0.037)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Overall poverty line = 509.41 CFA francs per adult equivalent per day. Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Stratification and clustering in the surveys were taken into consideration when setting the sample designs. ** and * indicate significance at the 1% and 5% levels, respectively.

Table 3b. Zonal Decomposition of Changes in the Head Count Index (ΔP_0) into Within and Between Group Effects with the higher poverty line

	Shapley Decomposition Approach					
	1984-1996			1996-2001		
Zone	Intra-zone effects	Inter-zone effects	Impact on ΔP_0=0.205	Intra-zone effects	Inter-zone effects	Impact on ΔP_0=-0.157
Urban	0.052	0.026	0.078**	-0.018	0.012	-0.006
	(0.000)	(0.000)	(0.017)	(0.000)	(0.000)	(0.018)
Semi-Urban	0.026	-0.046	-0.020	-0.012	0.012	-0.001
	(0.000)	(0.000)	(0.018)	(0.000)	(0.000)	(0.014)
Rural	0.183	-0.036	0.147*	-0.099	-0.051	-0.151**
	(0.000)	(0.000)	(0.072)	(0.000)	(0.000)	(0.053)
National	0.261	-0.056	0.205**	-0.130	-0.027	-0.157**
	(0.000)	(0.000)	(0.062)	(0.000)	(0.000)	(0.040)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Overall poverty line = 513.68 CFA francs per adult equivalent per day. Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Stratification and clustering in the surveys were taken into consideration when setting the sample designs. ** and * indicate significance at the 1% and 5% levels, respectively.

Table 3a also hosts the sectoral decomposition of the 20.4 percentage points' increase in the head count index in the period 1984-1996. Of the 20.4 percentage points' increase in the head count index, rural areas account for 14.6 points, which are over-accounted for by within-zone effects (18.1 points). The between-zone effects tend to reduce the worse effects of poverty in the rural and semi-urban areas by allowing poverty to decline by 3.5 and 4.5 points, respectively. Meanwhile, the impact on urban areas of the increase in the head count index of 20.4 percentage points is 7.8 points. Of these, both the within-one and between-zone effects contribute to increase urban poverty. As another robustness check, the decomposition results of the incidence of poverty into within- and between-zone effects based on the overall poverty line computed using the adult equivalent non-food essential expenditure method (Zu=513.68) are in essence telling a similar story − notably that the inter-zone effects are favourable in mitigating or reducing poverty in rural areas, while worsening the poverty situation in urban centres (see, Table 3b).

The results presented in Tables 4 and 5 for the poverty-gap and the squared poverty-gap decompositions, are basically tracing the same story line as revealed in the analysis of the head count index. The contribution of inter-zone effects in mitigating or reducing rural poverty in terms of the incidence, intensity and severity is attributable, at least in part, to the importance of migration in the fight against poverty by the poor themselves. Baye (2006a) suggests two possible transmission mechanisms that may explain such findings. The first channel could be through remittances made by rural-urban migrants, who generally leave part of their family in rural areas and maintain active ties with them.

The second potential transmission channel could be increases in household per capital consumption emanating from rural-urban migration in the face of underemployment in rural agriculture. In the presence of underemployment in rural agriculture and rural-urban migration, one would expect that rural consumption expenditure would increase − hether or not remittances are received. This is because the

marginal person may be contributing very little or nothing to household income. By leaving, therefore, there would be an increase in consumption per head or per adult equivalent because the numerator, that is household income, would not decline.

Table 4. Zonal Decomposition of Changes in the Poverty-Gap Index Index (ΔP_1) into Within- and Between-Group Effects

	Shapley Decomposition Approach					
	1984-1996			1996-2001		
Zone	Intra-zone effects	Inter-zone effects	Impact on ΔP_1=0.082	Intra-zone effects	Inter-zone effects	Impact on ΔP_1=-0.66
Urban	0.015	0.007	0.022**	-0.006	0.003	-0.003
	(0.000)	(0.000)	(0.004)	(0.000)	(0.000)	(0.004)
Semi-Urban	0.007	-0.014	-0.007	-0.004	0.003	-0.001
	(0.000)	(0.000)	(0.005)	(0.000)	(0.000)	(0.004)
Rural	0.080	-0.012	0.067**	-0.045	-0.018	-0.063**
	(0.000)	(0.000)	(0.023)	(0.000)	(0.000)	(0.021)
National	0.101	-0.019	0.082**	-0.055	-0.011	-0.066**
	(0.000)	(0.000)	(0.021)	(0.000)	(0.000)	(0.019)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Overall poverty line = 509.41 CFA francs per adult equivalent per day. Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Stratification and clustering in the surveys were taken into consideration when setting the sample designs. ** and * indicate significance at the 1% and 5% levels, respectively.

These presumptions are supported by the systematic decline in the population share of rural areas (by 8.1%) and a systematic increase in the population share of urban (by 5.1%) and semi-urban (by 3.0%) areas in the period 1996-2001 (Table 2a), which signifies net out migration from rural areas. Moreover, the observation that inter-zone effects accounted adversely to urban contributions to the declining incidence, depth and severity of poverty (Tables 3a to 5), points to the possibility that migrants might be fuelling urban poverty. This view is motivated by the observation that, although rural-urban migrants in Cameroon are typically more literate and better educated than other rural residents, on

average, they are less literate and less educated than other urban residents (Baye, 2006a). In terms of household amenities such as refrigerators, type of houses, floors and toilets, migrants generally live under more precarious conditions than other urban residents (National Institute of Statistics, 2002).

Rural-urban migrants are usually young men and women with primary school education. Upon arrival in the urban centres, the young men typically engage themselves in informal activities such as car washing by the road sides, and eventually the successful ones become taxi-drivers, motor mechanics, or work as security guards. Their female counterparts generally start as babysitters or house girls and end up as itinerant tailors, hairdressers, and petty retailers of food items or sex workers. On the average, they do better than the typical youth resident in rural areas but worse than the typical urban resident.

Table 5. Zonal Decomposition of Changes in the Squared Poverty-Gap Index (ΔP_2) into Within- and Between-Group Effects

	Shapley Decomposition Approach					
	1984-1996			1996-2001		
Zone	Intra-zone effects	Inter-zone effects	Impact on ΔP_2=0.040	Intra-zone effects	Inter-zone effects	Impact on ΔP_2=-0.032
Urban	0.006	0.003	0.009**	-0.003	0.001	-0.001
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.002)
Semi-Urban	0.002	-0.006	-0.004*	-0.002	0.001	-0.000
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.002)
Rural	0.040	-0.006	0.034**	-0.022	-0.008	-0.030**
	(0.000)	(0.000)	(0.012)	(0.000)	(0.000)	(0.011)
National	0.048	-0.009	0.040**	-0.026	-0.006	-0.032**
	(0.000)	(0.000)	(0.011)	(0.000)	(0.000)	(0.011)

Source: Computed by the author using BCS 1984, CHCS 1996 and CHCS 2001 Survey Data.
Notes: Overall poverty line = 509.41 CFA francs per adult equivalent per day. Measure of welfare is real expenditures per adult equivalent per day (base 2001=1). Stratification and clustering in the surveys were taken into consideration when setting the sample designs. ** and * indicate significance at the 1% and 5% levels, respectively.

Table 6. Rates of Unemployment in Cameroon

Zone	Male			Female			Cameroon		
	1987	1996	2001	1987	1996	2001	1987	1996	2001
Urban	15.6	18.7	17.7	19.3	20.3	20.2	16.7	19.3	18.7
Rural	5.1	4.3	2.6	3.0	1.9	1.8	4.1	3.1	2.2
Cameroon	9.3	9.5	8.2	6.8	6.5	6.8	8.3	8.1	7.5
Yaoundé								30.6	21.5
Douala								23.6	25.6

Sources: Government of Cameroon 1987, DSCN 1996, National Institute of Statistics 2001.

In the same vein, unemployment in Cameroon appears to be more of an urban than a rural phenomenon (Table 6). The urban-rural unemployment gap increased steadily overtime. For instance, unemployment was four times higher in urban than in rural areas in 1987, six times higher in 1996, and over nine times higher in 2001. The main urban areas of Yaoundé and Douala registered unemployment rates in 1996 and 2001 that are overwhelming compared to the national average. On gender lines, the urban female population appears to be harder hit by unemployment than their male counterparts, in the rural areas, the picture is somehow reversed between 1987 and 2001 (see, Table 6).

Generally, attributing population shifts solely to migration may be telling only a partial story. For instance, as urbanisation proceeds, the spatial area designated as urban also expands in many developing countries. Examining the geographical coverage of the 1984, 1996, and 2001 surveys, we undertook the adjustments mirrored in Appendix 1 to minimise differences in areas depicted as urban, semi-urban (Other Towns), and rural over the three periods. This renders the distribution of these areas somehow comparable over the three periods.

Another reason why population shifts may occur is the natural rate of population growth, which is the net effect of birth and death rates. Generally, total fertility has declined (Table 7) and is lower among urban women than among rural women in various developing countries including Cameroon. For example, in 2004 women in Yaoundé/Douala

Table 7. Selected data on some economic and social indicators in Cameroon between 1980 and 2002

	1980	1982	1984	1985	1990	1992	1994	1996	1997	2000	2001	2002
Real growth of GDP at market prices (%)	-2	7.5	7.5	8.1	-6.1	-3.1	-2.5	5	5.1	4.2	5.3	4.2
GDP per capita (Cur. US$)	770	790.6	796.8	809.4	956.3	921.8	601.1	661.9	646.2	585.7	550.3	594.5
Consumer Price Index (1995=100)	32.2	40.3	52.4	56.9	70.1	70.1	91.7	103.9	108.9	111.7	116.8	120
Local currency / US$, market rate, period avg.	211.3	328.6	437	449.3	272.3	264.7	555.2	511.6	583.7	712	733	697
Population growth, (%)	2.9	2.8	2.8	2.8	2.9	2.7	2.5	2.3	2.3	2.1	2.1	2.1
Population, total (000)	8754	9262	9791	10067	11661	12363	13065	13761	14106	15117	15446	15769
Population, urban as % of total, interpolated (%)	31.4	33.1	34.8	35.7	40.3	42	43.8	45.5	46.4	48.9	49.7	50.4
Crude birth rate per 1000 pop, interpolated	44.6	43.9	..	42.7	41.1	40.6	..	..	39.2	37	36.2	35.5
Crude death rate per 1000 pop, interpolated	16.5	15.7	..	14.6	13.2	12.8	..	..	12	14.2	15	15.7
Natural increase per 1000 pop, interpolated	28.1	28.2	..	28.1	27.9	27.8	..	..	27.2	22.8	21.3	19.8
Illiterate females as share of female pop 15+ (%)	69	65.8	62.5	60.9	52.5	49.1	45.7	42.5	40.9	36.3	34.9	33.5
Illiterate males as share of male pop 15+ (%)	43.8	41.2	38.7	37.4	31.3	29.1	26.9	24.8	23.9	20.9	20.1	19.3
Illiterate pop as share of pop 15+ (%)	56.7	53.8	50.9	49.4	42.1	39.3	36.5	33.8	32.5	28.7	27.6	26.5
Total fertility (births per woman)	6.42	6.4	..	6.4	6	5.7	..	..	5.1	4.8	4.7	4.6
Life expectancy at birth, females, interpolated	51.5	52.5	..	53.94	55.74	56.3	..	..	54.2	51.11	50.26	49.4
Life expectancy at birth, males, interpolated	48.5	49.5	..	50.88	52.7	53.3	..	..	51.6	49.03	48.27	47.5
Life expectancy at birth, total, years	50	51	..	52.4	54.2	54.8	..	..	52.9	50	49.2	48.4

Source: The World Bank Africa CD ROM, 2004

registered a lower fertility level (3.2) than those in Other Towns (4.6), or

in rural areas (6.1) (National Institute of Statistics, 2005). Crude birth and death rates have largely been brought down in both rural and urban centres thanks to medical advances and declining illiteracy (Table 7). Both natural population increase and population growth rates declined in Cameroon during the period under study, while the proportion of urban dwellers increased steadily and life expectancy at birth stagnated on a downward trend (Table 7).

According to the Cameroon Demographic and Health Survey 2004 (CDHS-III), urban residents present a greater risk of HIV/AIDS infection than rural residents. HIV/AIDS prevalence is higher in Other Towns (6.9 percent) and in Yaoundé/Douala (6.4 percent) than in rural areas (4.0 percent). In particular, the prevalence in Yaoundé (8.3 percent) is higher than that in Douala (4.5 percent), both for women (10.7 percent compared with 5.5 percent) and for men (6.0 percent compared with 3.6 percent) (National Institute of Statistics, 2004). These observations do suggest that shifts in population shares in favour of urban centres in Cameroon can largely be attributable to rural-urban migration.

Concluding Remarks

This paper revisited a variant of the non-parametric method of setting poverty lines and assessed the relative importance of within- and between-zone components in accounting for poverty trends in the context of growth and poverty reduction spanning the period before, during and after SAPs. Using real expenditures per adult equivalent as the well-being indicator, within-zone effects were found to be more instrumental in accounting for aggregate changes in all the P_a class of poverty measures than the inter-zone population shift effects in the period under review.

The inter-zone effects were, however, non-negligible and systematically contributed in alleviating rural poverty, while worsening urban poverty. This was view as an indication of the important role rural-urban migrants might play in alleviating or at least mitigating rural

poverty. Two possible transmission mechanisms were proffered to explain this finding: (1) remittances made by rural-urban migrants, who generally leave part of their family in rural areas and maintain active ties with them; and (2) the rural consumption enhancing effects of migration in the face of underemployment in rural agriculture, with or without remittances.

These findings draw attention to the potential positive spill-over effects engendered by rural-urban migration that may attenuate the worst consequences of poverty on rural relatives. These effects can be enhanced if withdrawal of labour from agriculture is also accompanied by a reorganisation of production (technology change) by those who are left behind. An implication of this interpretation is that policy-makers need to better understand the factors that have potential to push and pull migrants.

In addition, policies based on the Lewis-Fei-Ranis model of migrant labour absorption in the modern sector may not be tenable in Cameroon since the expansion of the urban formal sector has not generated sufficient employment for all those available to work; making migration to serve the purpose of transferring unemployment from rural to urban areas. However, the unemployed in the urban sector do often find "work", or at least create work themselves, on the fringes of the industrial sector − in particular in the informal services sector of the urban economy. Urban unemployment therefore takes the form of underemployment, or become disguised, just as in the case of the rural sector − its manifestation being low income. Though they are generally worse-off than the regular urban residents, they are by and large better than their rural counterparts.

This implies that in spite of the low prospects of absorption in the urban formal sector, urban migrants cannot afford to be openly unemployed because of the non-existent unemployment benefits/ nsurance and the temporary nature of the assistance they receive upon arrival in urban centres. Typically, after initially falling back on family sharing and urban networks, they accept working at low levels of productivity as urban informal sector underemployed, while searching

for something better.

The informal economy of the urban sector, therefore, harbours the bulk of this labour in transition from rural sector into industrial employment. In this context, analysts agree that as long as the expected value of the urban wage still exceeds the wage in the rural sector, notwithstanding the probability of long spells of unemployment or underemployment, the process of migration will continue (Thirlwall, 1999). These changing circumstances have tilted development thinking in recent years on urban unemployment and policies to combat it. Conventional ways such as subsidies to labour or public-works programmes in the urban areas may only be momentary or short-term solutions to urban unemployment and the predicaments of rural exodus.

Although rural-urban migration is inferred by our findings - as a rational strategy usable by households to mitigate the worst effects of poverty − implying that mobility by household members could assist in pro-poor and shared growth, its sustainability in alleviating rural poverty is not guaranteed. In addition, the observation that within-zone effects were overwhelming in accounting for poverty trends has implication for public policy at a more aggregate level that calls for the need for agricultural modernisation and transformation as a credible and sustainable means of stimulating economic activities to a scale that can simultaneously bring about agriculture-based industrialisation and address the recurrent hikes in food prices.

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Appendix 1. Rearranging Regions to Approximate the 1996 Nomenclature in the Data adjustment process

Adjusted Regions in 1984	Regions in 1996	Regions in 2001
Yaoundé	Yaoundé	Yaoundé
Douala	Douala	Douala
Urban areas of the then seven provinces (excluding Yaounde and Douala)	Other Towns	Urban areas of the ten provinces (excluding Yaounde and Douala)
Forest region (Cocoa and Tobacco producing areas of East Province and the then Centre-South Province excluding Yaoundé	Rural Forest	Rural zones of Centre, East, and South provinces
Highlands and coast (coffee producing areas of the West and Northwest provinces and Moungo division in the Littoral Province, as well as rubber and oil palm producing areas of Southwest and Littoral excluding Douala)	Rural Highlands	Rural zones of West, North West, South West, and Littoral
Steppe and Savannah (livestock and cotton producing areas of the then grand North Province, now Far North, North, and Adamawa provinces)	Rural Savannah	Rural zones of Far North, North, and Adamawa provinces

Source: Compile by author based on the 1984, 1996 and 2001 household surveys.