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Chapter One

Implications of Farm–Non-farm Population Shifts for Household Poverty Changes in Cameroon

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Abstract

This paper studies the implications of farm–non-farm population shifts for household poverty outcomes in Cameroon. It uses total real expenditure per adult equivalent as the wellbeing indicator, as well as the 1996, 2001 and 2007 Cameroon household consumption surveys carried out by the government’s statistics office. Results indicate that both the within-sector and between-sector effects are important in accounting for the fall in poverty, with the former largely accounting for the decline in the incidence, depth and severity of poverty. The inter-sector effects portray the role played by farm–non-farm population shifts in alleviating poverty in the farm sector, while increasing it in the non-farm sector. This result also suggests the potential role of diversification-cum-migration in enhancing rural livelihood opportunities. The size of the within-farm effects has implications for public policy that encourages agricultural modernization as a sustainable means to engineer agricultural-based industrialization and which addresses the recurrent hikes in urban food prices.

Key words: Agriculture, Poverty, Population shifts and Cameroon.

1. Introduction

In most communities in sub-Saharan African (SSA) countries, agriculture is largely based on traditional methods and the use of rudimentary inputs.¹ Its contribution to Gross Domestic Product (GDP) is approximately 17% (World Bank, 2000). Most African countries, like Cameroon, have witnessed farm–non-farm population shifts that affect livelihood opportunities, household welfare and poverty. Knowledge of these farm–non-farm linkages can be motivated by the dual economy models that were formulated by Lewis (1954) and later formalized by Fei and Ranis (1964).

Studying poverty outcomes along farm–non-farm orientations necessitates clearly defining the farm sector, the non-farm sector and the “undefined” sector as these are the terms used in this paper. Literature on the concepts farm and non-farm suffers from deficiencies associated with definitions, inconsistencies and difficulty in making comparative analyses (Barrett et al., 2001). The farm–non-farm distinction is generally defined according to employment sector classification that is established by accounting practices (Barrett and Reardon, 2000; Awoyemi, 2011). Whereas non-farm activities are defined as activities outside agriculture, farm activities are portrayed as activities undertaken by individuals outside the mining, manufacturing and service sectors.

Caution is therefore needed when carrying out such an analysis because these sectors are not mutually exclusive in most settings, especially in rural areas. Nevertheless, in this study we adopt a classification along the lines of standard accounting procedures as applied by the National Institute of Statistics (NIS) of Cameroon,² which classifies sectors of employment in terms of the main activity as declared by the household head. Those classified in the “undefined” sector are simply household heads who had not reported their main sector of employment during the household surveys. This convention may not systematically reflect the income generating profiles because it is possible that some households earn more from other activities than what they reported as their main activity.

In the latter half of the 1980s and early 1990s, Cameroon suffered a severe economic crisis that caused deterioration in the living standards of households. Subsequent to the 1994 devaluation that ushered in macroeconomic stability, poverty outcomes turned more favourable. For instance, poverty deepened between 1984 and 1996 (Baye, 2006); decreased between 1996 and 2001 (Ndamsa and Baye, 2011), and stagnated between 2001 and 2007 (NIS, 2008a). The decline in prices of agricultural products in the 1980s had a negative impact on agricultural production in Cameroon, manifested by the abandonment of agricultural activities, or the diversification by some households in favour of activities in the secondary or tertiary sectors. This

¹ The FAO (2010) calls for the necessity for agriculture in developing countries to undergo significant transformation in order to meet the related challenges of food security and climate change. ² Agriculture involves agro-pastoral activities, which include growing crops, hunting and rearing livestock.

may explain the incessant shortage of some staple food crops and the perennial difficulty of kick-starting the agricultural sector in Cameroon (Nsama and Epo, 2009).

A key observation is that modernizing the agricultural sector may entail population shifts between agricultural and non-agricultural activities. These shifts are thought to have modified the pattern of wellbeing among households in the different sectors of the economy. An evaluation of the changes in wellbeing and the investigation of the relative importance of sector specific effects and mobility induced effects on measured poverty trends are of interest to both analysts and political entrepreneurs to better understand how poverty and its components are transmitted. Such results may inform policy makers on potential options for the poor to move out of poverty. Despite its policy relevance, no study has attempted to consider the implications of farm–non-farm population shifts for Cameroon’s poverty changes between 1996 and 2007.

In this context, two key questions arise: (i) is poverty reduction the result of workers moving across sectors, or (ii) is it the result of underlying growth in productivity within sectors? The objectives of this study are, therefore, to compute and decompose poverty changes – notably into within- and between-sector effects, while highlighting the potential opportunities offered by farm–non-farm linkages in Cameroon. These objectives are guided by the proposition that within-sector activity effects overwhelmingly account for poverty changes, but that between-sector activity effects are poverty alleviating in the farm sector and perhaps poverty augmenting in the non-farm sectors. The rest of the paper is organized as follows: Section 2 considers the role of agriculture in the economy of Cameroon, Section 3 outlines the conceptual framework, Section 4 reviews the literature, Section 5 looks at the methodology and data, Section 6 presents the empirical results and Section 7 offers some concluding remarks.

2. The Role of Agriculture in Cameroon’s Economy

The modern roots of agriculture in Cameroon can be traced back to the colonial period. The government of Cameroon inherited two modes of agricultural practices during the post-colonial era: (a) large plantations giving rise to agro-industrial structures, and (b) small-farmer systems. Agricultural policy trends in Cameroon can be grouped into two periods: (a) years just after independence, which was achieved in 1960, and (b) the crisis period from the mid 1980s. During the first period we identify massive state interventions aimed at encouraging rural farmers and reinforcing public and semi-state enterprises associated either with production or marketing agricultural products. Government’s aim during this period was to help increase agricultural inputs supply (especially fertilizer and insecticides) and to enhance the agricultural efficiency of export and perishable food items to earn revenue and support agricultural self-sufficiency. This was done by (a) creating centralized decision making organs; and (b) dividing the agricultural extension programmes into two parallel systems: one by the Ministry of Agriculture and the other by integrated regional development institutions. During this period food production varied according to the degree of

perishability, with an increase in the cultivation of cereals and stagnation in perishable food production. Subsequently, indirect taxation of peasants was identified through withdrawals by the Stabilization Fund and the Produce Marketing Organization.

The second period was characterized by the crisis from the mid 1980s and efforts by the government to revamp all sectors of the economy. During the crisis period (1986–1994), the principal crops cultivated for export stagnated and local food or perishable food production showed an increase. During this period, crops that could be consumed and transformed locally were grown by poor households as a mean to generate income (Bokange, 2006). With the 1994 devaluation, there was renewed interest in the production of some exportable crops like palm oil, cocoa and coffee, with the hope of enhancing incomes. Unfortunately, the typical short-run elasticity of tree crops, the aging of both farmers and plantations, and practices such as poor governance, incompetence and inertia scuppered these efforts, causing individuals to lose interest in agriculture.

Bamou and Masters (2007) identify three distinct kinds of resource misallocation that became severe during the crisis period: (a) The classic Dutch Disease misallocations due to unsustainable price incentives, which limit investment in smallholder agriculture; (b) poor government institutional performance due to unsustainable management structures; and (c) under-investment in new technology. Moreover, despite significant public agricultural research and development programmes in Cameroon during the boom, there were few incentives for technology adoption, and as a result yields for most crops stagnated or declined (MINAGRI 1980). In recent times, more specifically after the structural adjustment reforms, agricultural sector-specific policies put in place by the Government of Cameroon have attempted to target input production, technological research and development, instituting sanitary and phytosanitary controls aimed at guaranteeing food security, and promoting and diversifying agricultural exports and increasing rural incomes.

Notwithstanding, the role of agriculture has been recognized as important for the development of Cameroon's economy, despite the observation that this sector is still lagging behind in terms of technology, transformation of products, and skill development (Government of Cameroon, 2009). The 2009 growth and employment strategy paper (GESP) – part of the vision 2035³ – covers the first decade of this vision and highlights government efforts to reinforce agriculture. The intention is to enable Cameroon's agriculture to transit to a semi-intensive production system that will help ensure food security, provide raw materials to the agro-processing industry, create a domestic market, and increase exports in order to improve the balance of trade.

Recently, Cameroon seems to have achieved some satisfactory agricultural growth and development. However, despite an increase in fertilizer usage, primary

³ This vision aims at consolidating efforts by the Government of Cameroon to become an “emerging, democratic and unified” country by 2035 (also called *Vision 2035*).

crops have witnessed little growth in yields (FAOSTAT, 2006). Between 1960 and 1970, agriculture contributed 30% to GDP and made up 80% of exports (Bokange, 2006). Agricultural production grew around 2.9% between 1983 and 2004. In 2007 and 2008, the surface area and production of almost all staple crops increased by 5.5% (DESA, 2010). In 2006, the contribution of agriculture to GDP was about 20% (Conférence Internationale sur la Reforme Agraire et Le Développement Rural, 2006).

It should also be noted that when Cameroon achieved independence, about 85% of its population lived in rural areas and relied principally on agriculture for their livelihood. However, with the fast urbanization witnessed in the country, by 2005 the share of the population living in rural areas fell below 50% (FAOSTAT, 2006). Nevertheless, over the past decades agriculture has witnessed sectoral shifts in production, as indicated by Courade and Alary (1994) and Touna-Mama (1996). As discussed by Ndoye and Kaimowitz (2000) and Sunderlin et al. (2000), important shifts have taken place after the government phased out subsidies on fertilizers, pesticides and herbicides between 1989 and 1992 as one of the responses to budgetary shortfalls.

3. Conceptual Framework

The framework for understanding farm–non-farm population shifts can be drawn from dual economy models. According to Fields (2007), dual economy models arose as a reaction to single sector models, more precisely, as an alternative to theoretical modelling of economic growth which was dominated by single sector models such as that of Nobel Prize winner Robert Solow. For both Lewis (1954) and Kuznets (1955), differences in sectors can be accounted for in terms of the goods produced, the nature of the growth process, and conditions in labour markets. For differences in perceptions, Lewis (1954) specified a capitalist sector and a subsistence sector, while Kuznets distinguished an agricultural sector from all others, primarily industry. In addition, Lewis (1954) argued that capital accumulation took place in the capitalist sector only, therefore this sector was the engine of growth. For Kuznets, the essence of modern economic growth was the gradual shift of production from lower-income to higher-income sectors (Fields, 2007). There are two strands of dual economy models – the classical and the neoclassical. In terms of the classical model, there is surplus labour in the rural and dominantly agricultural sector. In the neoclassical model, marginal products tend to equate across sectors of activity.

Temple (2005a; 2005b) argues that dual economy models can be useful in answering questions related to the growth–inequality poverty linkages and the long-run development of societies. According to Lombardo (2008), dual economy models deserve a powerful role in explaining the connections, if any, between growth, income or wealth distribution and the long-run development of an economy, as process of structural transformations, as well as in the analysis of individual wellbeing.

The classical and neoclassical models show that agriculture has a useful role

in the overall growth process. Regarding the neoclassical model, Mukesh and Ashok (1993) argue that 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 growth in the industrial sector through supply of raw materials. Consequently, irrespective of the orientation adopted, when focusing on the labour market dimension, dualism still offers a theoretically valid framework for dealing with early stage development in many developing countries (Ranis, 2006).

The development of a country affects population shifts in different manners. These shifts may concern principally the youths finding jobs in the industrial sectors, which are mainly situated in urban areas. The impact of this on the agricultural sector may involve the stagnation of cultivable surface areas and the reduction of the quantity of labourers in the farm sector due to the aging of farmers or the diversification of their activities. Inter-sector population shifts may affect poverty, but the extent and direction of the impact is likely to be an empirical issue – perhaps affecting the destinations differently than their origins.

In a nutshell, the convention is that developing countries should continue to invest in agricultural development, and particularly in food staples and small farms. However, in this era of accelerating globalization, climate change challenges, and changing market structures and demand, this view is being challenged (Hazell, 2007). Authors like Maxwell et al. (2001) and Ellis and Harris (2004), have argued that poor countries should downplay the importance of food staples and small farms and instead focus on commercial farms, higher-value agriculture, and rural income diversification through migration and non-agricultural development. In this context, increasing farm–non-farm linkages and income diversification in the primary sector may make agriculture to some extent irrelevant for the rural poor if interventions are not put in place to raise agricultural productivity and incomes.

4. Literature Review

Substantial evidence has been produced in the literature that points to the increasing importance of pluriactivity and diversification among farm households (FAO, 1998; Lanjouw and Feder, 2001; Haggblade et al., 2005). This is because rural households tend to participate in both farm- and non-farm activities in order to buffer shortages in income.

A review of writings on the effects of the structural transformation of agriculture shows that raising productivity across all sectors of the economy is important in achieving pro-poor growth and sustaining higher standards of living in many low income countries (LICs). Baye and Njong (2011) identify the utilization of improved technologies, investment in higher education and skill levels for the labour force, lower transaction costs to connect and integrate economic activities, and more efficient allocation of resources as mechanisms that can help agricultural transformation. Therefore, in line with Syrquin (2006), structural transformation can be considered the defining characteristic

of the development process reflecting the cause as well as effect of economic growth.

Countries that have failed to successfully launch an agricultural revolution remain trapped in poverty, hunger, and economic stagnation (Hazell, 2007). In this regard, no country has been able to sustain a rapid transition out of poverty without raising productivity in the agricultural sector (Timmer, 2007). A dynamic agricultural sector raises labour productivity in the rural economy, pulls up wages, and gradually eliminates the worst dimensions of absolute poverty. Somewhat paradoxically, the process also leads to a decline in the relative importance of agriculture to the overall economy, as the industrial and service sectors grow even more rapidly, partly through the stimulus from modernizing agriculture and the migration of rural workers to urban jobs (Baye and Njong, 2011). More generally, over time agriculture stimulates and is stimulated by the non-agricultural economy. An adequate interplay of both sectors affects household welfare.

Concerning literature on how the dual economy models relate to poverty–inequality issues, Lombardo (2008) finds that there is new literature on microeconomic grounds as new channels have recently been offered to explain how the benefits from growth processes are distributed across the population and the implications thereof for the growth–poverty nexus. In line with Capasso et al. (2008), who attempt to answer the question whether and under what conditions the process of structural transformation of a society is either more inclusive or more exclusive, supply remarkable insights on the theoretical channels of pro-poor growth. Building on this remark, the dual economy model goes beyond simply analyzing from a developing country perspective, to targeting outcomes suitable for properly analyzing the structural transformation of developing societies, which harbour the bulk of the marginalized poor (*The Economist*, 2007).

Understanding growth and income distribution appears even more pivotal once we consider that the persistence of economic dualism is an important explanatory factor of inter-sectoral differences in inequality. Bourguignon and Morrisson (1998) add to this observation by showing that even if the relative labour productivity between agriculture and the rest of the economy is not correlated with the rural–urban income gap, the observed effect of economic dualism on income inequality is still very strong. In this regard, features of economic development of societies in transition are better captured by unbalanced models (Baumol, 1967; Kongsamut et al., 2001) than by long-run steady state neoclassical ones.

Farm–non-farm population shifts within the context of structural transformation may point to the observation that there has been a growing pessimism about the contribution of agriculture to employment creation and export expansion in the long term. In addition, it is currently widely assumed that increased participation in non-farm activities is critical to future growth in low income countries (Pham et al., 2010). Studies reveal that non-farm employment has become an increasingly important source of employment for the primary sector population. Regarding the movement of population from farm- to non-farm sectors, which may be rural–urban movements, Mao

and Schive (1995) argue that in Taiwan these movements were significant, despite the boom in the agricultural sector. This trend mimics what is observed in Asian economies that have witnessed some significant transformations (Van de Walle and Cratty, 2003).

Regarding African countries, and Cameroon in particular, there are very few studies that have attempted to study rural–urban population shifts. Baye and Njong (2011) study population shifts along rural–urban lines and how these relate to poverty outcomes, whereas Ndamsa and Baye (2011) investigate the effects of labour force mobility between the primary, secondary and tertiary sectors. This study is different from previous ones because it attempts to study farm–non-farm population shifts and how these inter-sector linkages affect aggregate poverty levels in terms of contributions in accounting for measured poverty within and between farm–non-farm sectors of activity. The next section looks at the methodology and data used in the aggregate poverty decomposition.

5. Methodology of the Study

Empirical framework

To achieve the objectives of this study, we exploit the sectoral decomposition approach (Ravallion and Huppi, 1991) of poverty changes between two dates, t and $t+n$, and the Shapley Value decomposition framework (Shorrocks, 1999; Baye, 2006). This methodology is used to explore the within- and between-sector activity contributions to any observed changes in poverty.

Let f_g and P_{ag} represent the population share and poverty level of the subgroup (farm, secondary or tertiary sector), the property of subgroup decomposability of the

P_α class of poverty measures enables us to write the expression $P_{\alpha,t} = \sum_{g \in G} f_{g,t} P_{ag,t}$.

The aggregate change in poverty between period t and $t+n$ yields:

$$\Delta P_\alpha = P_{\alpha,t+n} - P_{\alpha,t} = \sum_{g \in G} [f_{g,t+n} P_{ag,t+n} - f_{g,t} P_{ag,t}] \quad (1)$$

Change in poverty, ΔP_α , is now expressed as $\Delta P_\alpha = P_{\alpha,t+n} - P_{\alpha,t}$, and the population shifts between subgroups, $\Delta f_g = f_{g,t+n} - f_{g,t}$

To render this decomposition exact, the Shapley Value decomposition rule can be used. Within this framework (see Shorrocks, 1999; Baye 2006), the exact within-

$g \in G$

$g \in G$

sector activity effects $\phi_{\alpha W}^s$ and between-sector activity effects $\phi_{\alpha B}^s$ of aggregate poverty changes are expressed as:

$$\phi_{\alpha W}^s = 0.5 \sum_{g \in G} [f_{g,t} + f_{g,t+n}] \Delta P_{\alpha g} \quad (2)$$

$$\phi_{\alpha B}^s = 0.5 \sum_{g \in G} [P_{\alpha g,t} + P_{\alpha g,t+n}] \Delta f_g \quad (3)$$

Overall change in poverty, as expressed in Equation 1, can now be rewritten in terms of exactly two components, changes in poverty within sectors of activity and between-sector population shift effects as:

$$\Delta P_{\alpha} = \phi_{\alpha W}^s + \phi_{\alpha B}^s \quad (4)$$

Data description

This study uses three household surveys: the 1996; 2001 and 2007 Cameroon household consumption surveys carried out by the government's statistics office under different appellations. These household surveys span the periods before and after the attainment of the Heavily Indebted Poor Countries' completion point. The 1996 Cameroon Household Consumption Survey (CHCS) comprised 1,731 households interviewed from a sample of 1,800 households divided into six strata, as follows: Yaoundé and Douala, the two main cities of the country; and four agro-ecological zones, namely Other Towns, Rural Forests, Rural High Plateaus and Rural Savannah. This survey was conducted by the government's statistics office in 1996, spanning the period February–April 1996. This survey had the following objectives, to: (a) measure the effects of the economic crisis and adjustment measures on the level and conditions of the living standards of the households; (2) establish the relationship that exists between the different dimensions of the living standards of these households; and (3) analyze the tendencies and evolutions of household living standards relative to other sources of data (Government of Cameroon, 1996).

The 2001 CHCS covered all 10 regions of Cameroon, conducted in both urban and rural areas with 10,992 households visited. In all, data were collected for

22 strata – 10 rural and 12 urban. In particular, Yaoundé and Douala were considered as separate strata, and each of the ten provinces was divided into two strata. The 2001 survey was undertaken from September to December 2001 (NIS, 2002a). This household survey was carried out to distil more robust poverty profiles. In addition, it was conducted to: (1) propose an adequate methodology for calculating poverty lines and profiles acceptable to major development partners, which serves as a reference for further analysis; (2) analyze monetary poverty, poverty in terms of living conditions of most households and potential poverty, while establishing the correlation between them; (3) consolidate past analysis at national and regional levels, while isolating the two large towns (Douala and Yaoundé) and also distinguishing area of residence (urban or rural); and (4) produce an adequate data base to ameliorate different statistics (of the population), notably in establishing household consumption in national accounts and updating data used in calculating price indices (NIS, 2002a; 2002b; 2004; 2005).

The 2007 CHCS also covered the 10 regions of Cameroon. Data were collected from 32 strata – 12 urban, 10 semi-urban and 10 rural strata. The sampling design was similar to that of 2001 regarding the definition of agro-ecological zones. The CHCS III surveys were carried out between May and July 2007, and comprised 11,391 households. Its aim was to upgrade knowledge on poverty and welfare status in Cameroon by providing indicators that capture the living standards of the local population in order to be able to follow up efforts made towards the implementation of the poverty reduction strategy paper (PRSP) and the realization of the Millennium Development Goals objectives. According to the NIS, these data were also aimed at (1) studying all aspects of poverty at national and regional levels, as well as establishing correlations between these different types of poverty; (2) studying changes in poverty between 2001 and 2007, with the aim of evaluating the effects of macroeconomic policies of the last five years on household wellbeing; (3) evaluating the demand for education and identifying its principal determinants; (4) evaluating internal tourism in Cameroon; and (5) collecting data on child labour in Cameroon (NIS, 2007; 2008b).

To make the 1996 CHCS and 2001 CHCS comparable, the NIS spatially and inter-temporarily harmonized both data sets, using a spatial consumer price index making Yaoundé the base region, and a temporal consumer price index making 2001 the base year, respectively (NIS, 2002a). After harmonizing expenditures in both surveys, the government's statistics office used the 2001 survey to calculate a food poverty line from a typical household food basket composed of 61 food items, yielding 2,900 kcals per adult per day, which was representative of consumer choices as revealed by the survey. This bundle of food items was priced, and an allowance for non-food basic needs evaluated at one-third of the overall poverty line was added. An official harmonized overall poverty threshold of FCFA185,490 per year per adult equivalent was computed. Based on this official poverty line, 40.2% of Cameroonians were found to be living in poor households in 2001 as opposed to 53.3% in 1996. The poverty line of FCFA185,490 per year per adult equivalent is retained in this study.

In this study, we harmonized the 2001 CHCS and the 2007 CHCS using a deflator constructed by dividing the poverty line for the 2007 CHCS of FCFA269,443 per adult equivalent per year calculated by the NIS, by the harmonized poverty line of FCFA185,490 per adult equivalent per year for the 1996 CHCS and 2001 CHCS derived by the same institution. This deflator (1.453) was then used to render the 2007 adult equivalent expenditures comparable with the 2001 harmonized adult equivalent expenditures. In this way, we render comparable the three household surveys using 2001 as the base year.

We use three basic measures of poverty: 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 wellbeing of the poor lie below the poverty line; and the degree of inequality among the poor (or severity)[□] (World Bank, 1990). The P_α class of poverty measures proposed by Foster, Greer and Thorbecke (1984) meets the aforementioned requirements in a stepwise fashion. The parameter α 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).[□]

6. Empirical Results

A bird's eye view of agriculture statistics in Cameroon

The second Cameroon household consumption survey reports that 60.6% of the active population was in the agricultural sector, with 53.1% of active men and 68.4% of active women undertaking activities in the agricultural sector (NIS, 2004). In 2007, the share of the active population that worked in the agricultural sector was 64.2%, with a large number of these active household members being from poor households, 9.2% in the industrial sector and 26.6% in the tertiary sector (NIS, 2008b). Furthermore, informal actors are the poorest groups (about two-thirds of this population), followed by agro-pastoralists (farmers) (about half of this population). In the informal sector, 48.26% of farmers are poor. Among rural dwellers, about 90.7% are poor and only 12.1% use modern equipment (NIS, 2007; 2008b).

Agricultural output is affected by inputs such as land, labour and capital, as outlined by the neoclassical model of production. A review of the 2007 household survey by the NIS indicates that 53.9% of households own farmland. The average surface area of farmland was 2.4 hectares per household. In rural areas, land owned by household members was four times higher than in urban areas. However, the surface area of land is small for poor households and large for non-poor households. Access to markets where farm products are sold is, on average, 3.7km from households. This distance is 1.1km in urban areas. For financial capital, the agricultural sector is excluded from the formal financial system, and 97.2% of poor farmers self-finance their agricultural activities (NIS, 2007; 2008b).

Among farmers, only 18.9% are informed of the benefits they can obtain from

structures attached to the Ministry of Agriculture and Rural Development (MINARD-ER). About 56.9% of farmers believe the activities of MINADER are insufficient. As concerns labour, in the absence of research on the agricultural sector labour force, it is difficult to calculate the remuneration in this sector. However, the International Labour Organization (1996; 2004) indicates that salaries in the agricultural sector are, on average, lower than salaries in the other sectors. Likewise, on most small-scale farms, labour is intensive and rudimentary tools are used. Before the enactment of the new labour code, employees were free to negotiate their salary levels, and the wage rate per hour in agro-industrial sectors was CFAF104/hour. Unfortunately, enterprises wanted this rate to remain at CFAF98, the rate of 1993 (Bokange, 2006).

On the feminization of agriculture, the 1995 FAO fact sheet (FAO, 1995) on Cameroon identifies that rural women supply 90% of the food needed for the subsistence of the population. Furthermore, during the peak growing season, women devote 6 to 8 hours a day to agriculture in addition to their household work. On division of labour, whereas men work mainly in the cash crop sector, women bear the entire responsibility for food production and also help men with land preparation, harvesting and other work for cash crops. While men are primarily responsible for fishing and livestock, women are in charge of fish processing and marketing, and raising poultry and small livestock for home consumption and for sale. Worth noting is that over time these tendencies appear not to have changed very much. In this context, what is clear is that the basis of statistical information in Cameroon is quite dated. This is perhaps why the efforts made by the Government of Cameroon so far to move from first to second generation agriculture can easily be considered by other stakeholders as lacking adequate political will because the most recent agricultural census in Cameroon dates back to 1984.

Evolution of poverty indices

It is useful to examine poverty rates along farm and non-farm sector activities over time as this helps in guiding public policy on targeting anti-poverty programmes to meet the needs of the poor more effectively, especially in the context of budgetary constraints. We calculate poverty for the farm, non-farm and undefined sectors of activity for 1996, 2001 and 2007. With the poverty line of CFAF185,490 per adult equivalent per annum the incidence, depth and severity of poverty are calculated and provided in Table 1. The incidence of poverty fell by 13.3 percentage points between 1996 and 2001, less than 1 percentage point between 2001 and 2007, and about 13.4 percentage points between 1996 and 2007. The depth of poverty fell by 4.8 points between 1996 and 2001, 1.8 points between 2001 and 2007, and 6.8 points between 1996 and 2007. Meanwhile, the severity of poverty decreased by 2.1, 1.9 and 4.0 points in 1996, 2001 and 2007, respectively.

Sectoral decomposition of aggregate poverty changes

Table 2 presents the sectoral decomposition of changes in the head count in-

dex. Of the 13.3-percentage-point decline in the head count index in the period 1996–2001, the farm sector significantly contributed up to -8.2 points, which were

Table 1: Evolution of poverty by sector of activity for 1996, 2001 and 2007

Source: Calculated by authors using DAD 4.6.

Sector of Activity	1996			2001			2007					
	Popula- tion share	P ₀	P ₁	P ₂	Popula- tion share	P ₀	P ₁	P ₂	Popula- tion share	P ₀	P ₁	P ₂
Farm	0.568 ^a	0.62 ^{4a}	0.22 ^{3a}	0.10 ^{5a}	0.506 ^a	0.53 ^{9a}	0.20 ^{2a}	0.10 ^{3a}	0.516 ^a	0.58 ^{8a}	0.19 ^{2a}	0.08 ^{0a}
	(0.039)	(0.043)	(0.022)	(0.013)	(0.019)	(0.020)	(0.013)	(0.009)	(0.013)	(0.016)	(0.009)	(0.005)
Non-farm	0.355 ^a	0.37 ^{9a}	0.13 ^{0a}	0.05 ^{9a}	0.383 ^a	0.23 ^{2a}	0.06 ^{7a}	0.02 ^{8a}	0.416 ^a	0.18 ^{8a}	0.04 ^{7a}	0.01 ^{7a}
	(0.037)	(0.034)	(0.015)	(0.008)	(0.017)	(0.012)	(0.004)	(0.003)	(0.012)	(0.010)	(0.004)	(0.002)
Undefi- ned	0.078 ^a	0.56 ^{5a}	0.23 ^{4a}	0.11 ^{9a}	0.111 ^a	0.34 ^{9a}	0.12 ^{2a}	0.06 ^{2a}	0.068 ^a	0.25 ^{2a}	0.07 ^{1a}	0.02 ^{8a}
	(0.010)	(0.061)	(0.033)	(0.019)	(0.007)	(0.025)	(0.015)	(0.012)	(0.004)	(0.024)	(0.009)	(0.005)
Nation- al	1.00	0.53 ^{3a}	0.19 ^{1a}	0.08 ^{1a}	1.000	0.40 ^{0a}	0.14 ^{2a}	0.07 ^{0a}	1.00	0.39 ^{9a}	0.12 ^{3a}	0.05 ^{0a}
	(0.00)	(0.033)	(0.017)	(0.009)	(0.000)	(0.015)	(0.009)	(0.006)	(0.00)	(0.012)	(0.006)	(0.003)

Note: The national poverty line = CFAF185,490 per adult equivalent per year and the figures in parentheses represent standard errors; a, b and c indicate significance at the 1%, 5% and 10% levels, respectively.

attributed to both within-sector effects (-4.6 points) and between-sector effects (-3.6 points). The non-farm sector significantly accounted for -4.6 percentage points in alleviating the incidence of poverty. Whereas all the intra-sector effects contributed favourably to alleviating poverty, the inter-sector population shift effects lessened the non-farm contribution to the retreating incidence of poverty.

For the period 2001–2007, whereas the undefined sector (-2.2 points) contributed to the explanation of the marginal fall in the incidence of poverty (0.1 point), the farm sector (3.1 points) contributed in weakening the marginal fall in the prevalence of poverty. For the undefined sector both the within- and between-sector effects explained its contribution to significantly reducing the average level of poverty. The contribution of the non-farm sector is non-significant. Among farm sector workers, both the within- and between-sector effects contributed to slowing down the poverty alleviation effort in the period 2001–2007.

Over the period 1996–2007, results mimic those of the first period. However, although all sectors of activities contributed in accounting for the fall in the head count poverty, the non-farm and undefined sectors of activity contributed significantly (Table 2). For the undefined sector of activity, both the intra- and inter-sector effects contributed favourably in alleviating the prevalence of poverty. In the farm

Table 2: Sectoral decomposition of the change in head count index

Sector of Activity	1996–2001			2001–2007			1996–2007		
	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_0	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_0	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_0
Farm	-0.046	-0.036	-0.082 ^b (0.039)	0.025	0.006	0.031 ^c (0.019)	-0.020	-0.031	-0.051 (0.038)
Non-farm	-0.054	0.009	-0.046 ^b (0.017)	-0.017	0.007	-0.010 (0.007)	-0.073	0.017	-0.056 ^a (0.017)
Undefined	-0.021	0.015	-0.005 (0.010)	-0.009	-0.013	-0.022 ^a (0.005)	-0.023	-0.004	-0.027 ^a (0.009)
National	-0.121	-0.012	-0.133 ^a (0.000)	-0.001	-0.0004	-0.001 ^a (0.000)	-0.116	-0.018	-0.134 ^a (0.000)

Source: Calculated by authors using DAD 4.6. Note: The national poverty line = CFAF185, 490 per adult equivalent per year and the figures in parentheses represent standard errors; a, b and c indicate significance at the 1%, 5% and 10% levels, respectively

sector there is almost parity in the within-sector and between-sector contributions, while in the non-farm sector within-sector effects over-accounted for the 5.6 points decline. While between-sector effects tend to assist poverty reduction in the farm sector, it tends to slow down poverty reduction in the non-farm sector.

The peculiarity in these findings is that the average fall in poverty levels in the farm sector between 1996 and 2001 was mitigated over the period 2001–2007. According to a 2008 report by the NIS, these mitigating effects are attributable to the average fall in the prices of agricultural products and the rise in cost of farm inputs subsequent to the policy of liberalization associated with the marketing of farm inputs. This inevitably reduced net earnings for those in the farm sector, which adversely affected their welfare.

In Tables 3 and 4 the results for the poverty gap and the squared poverty gap decompositions are basically along the same lines as those revealed in the analysis of the head count index. In general, within-sector effects overshadow the between-sector effects in alleviating the intensity and severity of poverty in the period under review. The contribution of between-sector effects in the period 1996–2007 to reducing poverty in the farm sector in terms of inten-

sity and severity is attributable, at least in part, to the importance of occupational mobility or diversification in the fight against poverty by the poor themselves.

Typically, crop failure, scarcity of land and underemployment in agriculture can lead to land-based conflicts. To avert such debilitating outcomes, farm households may find refuge by diversifying into non-farm activities in rural areas or migrating to urban centres. Rural–urban migration increases chances for relatives left behind in rural areas to receive remittances. Migration in the face of underemployment in agriculture is likely to be welfare enhancing, whether there are remittances or not, because rural per capita consumption would increase. This is because the marginal

Table 3: Sectoral decomposition of the change in the poverty gap index

Sector of Activity	1996 vs. 2001			2001 vs. 2007			1996 vs. 2007		
	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_1	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_1	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_1
Farm	-0.011	-0.013	-0.024 (0.018)	-0.005	0.002	-0.003 (0.009)	-0.017	-0.011	-0.028 ^c (0.017)
Non-farm	-0.023	0.003	-0.020 ^a (0.007)	-0.008	0.002	-0.006 ^b (0.003)	-0.032	0.005	-0.027 ^a (0.007)
Undefined	-0.010	0.006	-0.004 (0.005)	-0.005	-0.004	-0.009 ^a (0.002)	-0.012	-0.001	-0.013 ^a (0.004)
National	-0.044	-0.004	-0.048 ^a (0.000)	-0.018	-0.0003	-0.0183 ^a (0.000)	-0.061	-0.007	-0.068 ^a (0.000)

Source: Calculated by authors using DAD 4.6. **Note:** The national poverty line = CFAF185,490 per adult equivalent per year and the figures in parentheses represent standard errors; a, b and c indicate significance at the 1%, 5% and 10% levels, respectively.

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. With remittances, farm household consumption is expected to increase even further.

These possibilities are supported by the systematic decline in the population share of farm households (by 9.2%) and a systematic increase in the population share of non-farm households (by 17.2%) in the period 1996–2007 (Table 1). This inter-sector mobility signifies net migration out of farm activities. Moreover, the observation that inter-sector effects contributed adversely to the contribution of non-farm employment to alleviating the incidence, depth and severity of poverty (Tables 5 to 7), points to the likelihood that those who leave

agriculture in the face of crop failure, scarcity of land, underemployment in agriculture and/or economic recovery might be fuelling non-farm-cum-urban poverty.

Table 4: Sectoral decomposition of the change in the square of the poverty gap index

Sector of Activity	1996 vs. 2001			2001 vs. 2007			1996 vs. 2007		
	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_2	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_2	Intra-sector Effects	Inter-sector Effects	Impact on ΔP_2
Farm	-0.001	-0.007	-0.008 (0.010)	-0.012	0.001	-0.011 ^b (0.006)	-0.014	-0.004	-0.018 ^c (0.009)
Non-farm	-0.011	0.001	-0.010 ^a (0.003)	-0.005	0.001	-0.004 ^a (0.001)	-0.016	0.002	-0.014 ^a (0.003)
Undefined	-0.006	0.003	-0.003 (0.003)	-0.003	-0.002	-0.005 ^a (0.002)	-0.007	-0.001	-0.008 ^a (0.002)
National	-0.018	-0.003	-0.021 ^a (0.0000)	-0.019	-0.0002	-0.019 ^a (0.0000)	-0.037	-0.003	-0.040 ^a (0.000)

Source: Calculated by authors using DAD 4.6. Note: The national poverty line = CFAF185,490 per adult equivalent per year and the figures in parentheses represent standard errors; a, b and c indicate significance at the 1%, 5% and 10% levels, respectively.

We attribute the observation that farm–non-farm population shifts are welfare enhancing and poverty reducing in the farm sector, and welfare reducing and poverty increasing in the non-farm sectors mainly to rural–urban migration. If it were an issue of rural–farm to rural–non-farm diversification the inter-sector population shifts would have favoured non-farm poverty alleviation instead. This is because participants in rural–non-farm activities are likely to be undertaking some farming activities as well.

This view is motivated by the observation that although during the crisis period and the implementation of the structural adjustment measures, laid off and unemployed individuals adopted farming as a means to secure livelihood opportunities as a last resort. Following macroeconomic progress subsequent to the 1994 devaluation, rural underemployment and the possibility of land scarcity, some individuals are increasingly enticed to move out of the farm sector to non-farm economic activities, which are mostly found in urban centres.

Farm migrants are typically absorbed in the informal sector as car washers by the road side, taxi-drivers, motor mechanics, security guards, babysitters or cleaners, tailors, hairdressers, petty retailers of food items or sex workers, mainly in urban and semi-urban settings. On average, they are better off than the typical household carrying out farming activities in rural settings, but worse

off than the typically successful individual employed in the formal sector. Such, farm–non-farm migrants in Cameroon are typically more skilled and better educated than other rural (predominantly farming) residents, and less skilled and less educated than other urban (predominantly non-farm) residents (Baye, 2006).

Urbanization and spatial economic growth processes may also explain population shifts between farm–non-farm activities. In this regard, better urban infrastructure and associated economic activities may encourage farm–non-farm population shifts. Urban activities, which are predominantly non-farm, may expand because of economic growth in enterprises located in these areas and can act as a motivator for individuals in the farm sector to move.

7. Conclusion

This study attempted to assess the implications of farm–non-farm population shifts for household poverty alleviation in Cameroon using real expenditure per adult equivalent as the wellbeing indicator. Specifically, we studied aggregate poverty changes and accounted for the contributions of within- and between-farm and non-farm sectors of activity in Cameroon. The methodology adopted was the exact sectoral decomposition framework based on the Shapley Value, and the 1996, 2001 and 2007 Cameroon household consumption surveys were used to generate the results.

The results indicated that both the within- and between-sector effects accounted for the fall in poverty, with the former largely capturing this fall in terms of the incidence, depth and severity. The inter-sector mobility components portrayed the role played by population shifts along farm–non-farm orientations in reducing poverty among households in the farm sector, while mitigating poverty alleviation in the non-farm sector. A number of mechanisms were conjectured to explain these findings: (1) remittances made by farm–non-farm migrants to their relatives in rural farm employment; (2) increases in farm consumption per head in the face of migration with or without remittances; (3) urbanization and spatial economic growth processes; and (4) structural economic changes in the economy of Cameroon.

Simply superimposing farm–non-farm population shifts to mirror the dual economy theory argument that migrant labour is completely absorbed in the modern sector (Lewis–Fei–Ranis model of labour absorption) may not be wholly adequate in the case of Cameroon. This is because the formal sector has not generated sufficient employment for all those willing to work, causing the informal sector to absorb the migrant labour. Consequently, employment in the informal sector is characterized predominantly by underemployment or disguised employment as migrants cannot afford to be openly unemployed because of the absence of unemployment benefits and the temporary nature of the assistance they receive from their relatives upon arrival in urban centres.

The informal economy of the urban sector, therefore, harbours the

bulk of this labour in transitioning from the farm sector into industrial employment. In this context, analysts agree that as long as the *expected* value of the non-farm urban wage still exceeds the wage in the rural/farm sector, notwithstanding the probability of long spells of unemployment or underemployment, the process of rural–urban migration will continue (Thirlwall, 1999).

Since most non-farm activities are found in urban centres, farm–non-farm population shifts have focussed 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 passing or short-term solutions to urban unemployment and the predicament of the rural exodus. Moreover, rural–urban migration is a function not only of actual urban–rural wage differentials, but also of the level of employment opportunities. Providing more employment opportunities would reduce unemployment immediately, but also encourage more migration. Thus, whether increasing the rate of growth of urban jobs will actually reduce unemployment remains an empirical issue.

A major finding in this paper is the potential positive effects engendered by rural–urban migration that may attenuate the worst consequences of poverty for rural farm relatives. These effects can be enhanced if withdrawal of labour from agriculture is also accompanied by a reorganization of production (technology change) by those who are left behind. An implication of this is that policy makers need to better understand the factors that have the potential to push and pull migrants. Moreover, the observation that within-sector effects were overwhelming in alleviating poverty has implications for public policies that favour agricultural productivity enhancement/modernization as a credible and sustainable means to advance agriculture-based industrialization and address the recurrent hikes in urban food prices.

Our findings yielded a number of theoretical and practical questions that remain unresolved, to fully understand the implications of farm–non-farm population shifts for poverty alleviation in low income countries. Suggestions for future research may include: (1) implications of combining household activities in farm and non-farm economies for rural livelihood enhancement in Cameroon; (2) understanding the role of commodity price variations for rural livelihood improvement in Cameroon; (3) investigating the nature of the agricultural sector labour force in rural Cameroon; (4) explaining the productivity gap between male- and female-headed households in rural Cameroon; and (5) explaining the productivity gap between rural and urban households in rural Cameroon.

References

- Awoyemi, T.T. 2011. *Rural Non-Farm Incomes and Poverty Reduction in Nigeria*. AERC Research Paper No. 224. African Economic Research Consortium, Nairobi.
-

- Bamou, E. and W.A. Masters. 2007. “Distortions to agricultural incentives in Cameroon”. Agricultural Distortions Working Paper No. 42. World Bank, Washington, D.C.
- Barrett, C.B. and T. Reardon. 2000. “Asset, activity, and income diversifications among African agriculturalist: Some practical issues”. Project report to USAID BASIS CRSP, March.
- Barrett, C., T. Reardon and P. Webb. 2001. “Nonfarm income diversification and household livelihood strategies in rural Africa: Concepts, dynamics, and policy implications”. *Food Policy*, 26(1): 315–31.
- Baumol, W. 1967. “Macroeconomics of unbalanced growth: The anatomy of urban crisis”. *American Economic Review*, 57: 415–26.
- Baye, M.F. 2006. “Structure of sectoral decomposition of aggregate poverty changes in Cameroon”. *African Development Review*, 18(3): 309–29.
- Baye, M.F. and A.M. Njong. 2011. “Rural-urban population shifts and poverty alleviation in rural Cameroon”. *Journal of Poverty Alleviation and International Development*, 1(2): 1–20.
- Bokange, B.F. 2006. “Evolution et Situation Actuelle de L’Agriculture et l’Elevage au Cameroun”. Rapport De Synthèse. Ministère de L’agriculture et du Développement Rural du Cameroun. Juillet.
- Bourguignon, F. and C. Morrisson, 1998. “Inequality and development: The role of dualism”. *Journal of Development Economics*, 57: 233–57.
- Capasso, S., M.R. Carillo and S. Vinci. 2008. “Nuove teorie della crescita e dualismo: un nuovo schema interpretativo per lo sviluppo del Mezzogiorno”. In M.R. Carillo, B. Moro, E. Papagni and S. Vinci, eds, *Dualismo, nuove teorie della crescita e sviluppo del Mezzogiorno*. Il Mulino, Bologna, Chapter 1: 31–61.
- Courade, G. and V. Alary. 1994. “De la Libéralisation à la Dévaluation: Les Planteurs Attendent leur Réévaluation”, 184–203. In G. Courade, ed., *Le Village Camerounais à l’Heure de l’Ajustement*. Paris: Karthala.
- Direction des Enquêtes et des Statistiques Agricoles (DESA). 2010. Ministry of Agriculture and Rural Development. February.
- Ellis, F. and N. Harris, 2004. *New Thinking about Urban and Rural Development*. Keynote paper prepared for the U.K. Department for International Development Sustainable Development Retreat.
- Mukesh, E and K. Ashok. 1993. “A theory of real wage growth in LDCs”. *Journal of Development Economics*, 42(2): 243–69.

- Food and Agriculture Organization (FAO). 2010. *“Climate-smart” Agriculture: Policies, Practices and Financing for Food Security, Adaptation, and Mitigation*. Rome, Food and Agriculture Organization of the United Nations.
- Food and Agriculture Organization (FAO). 1998. *The State of Food and Agriculture 1998*. Rome, Food and Agriculture Organization of the United Nations.
- Food and Agriculture Organization (FAO). 1995. “Fact sheet on Cameroon – Women, agriculture and rural development”. At <http://www.fao.org/docrep/v9319e/v9319e00.htm> Accessed 12 September 2012.
- FAOSTAT. 2006. Food and Agriculture Organization Statistics Databases. At <http://faostat.fao.org> Accessed August 2012.
- Fei, J.C.H. and R. Gustav. 1964. *Development of the Labour Surplus Economy: Theory and Policy*. Homewood, Illinois, Richard A. Irwin, Inc.
- Fields, S.G. 2007. “Dual economy”. Working Paper No. 17. University of Cornell, ILR School. At <http://digitalcommons.ilr.cornell.edu/workingpapers/17>.
- Foster, J.E., J. Greer and E. Thorbecke. 1984. “A class of decomposable poverty measures”. *Econometrica*, 52(3): 761–76.
- Government of Cameroon. 2009. *Growth and Employment Strategy Paper*. Ministry of Economy, Planning and Regional Development, Yaoundé.
- Haggblade, S., P. Hazell and T. Reardon. 2005. “The rural nonfarm economy: Pathway out of poverty or pathway in?” Paper presented at the International Research Workshop ‘Future of Small Farms’, ODI, IFPRI, and Imperial College, June.
- Hazell, P. 2007. “Transformations in agriculture and their implications for rural development”. *Journal of Agricultural and Development Economics*, 4(1): 47–65. At www.fao.org/es/esa/eJADE.
- International Labour Organization. 2004. “Les statistiques de l'emploi et le marché du travail au Cameroun”. Yaoundé.
- International Labour Organization. 1996. “Salariés agricoles, les plus pauvres d'entre les pauvres, communiqué de presse”.
- Kongsamut, P., S. Rebelo and D. Xie. 2001. “Beyond balanced growth”. *Review of Economic Studies*, 68: 869–82.
- Kuznets, S. 1955. “Economic growth and income inequality”. *American Economic Review*, 45: 1–28.
-

- Lanjouw, P. and G. Feder. 2001. *Rural Non-farm Activities and Rural Development: From Experience Towards Strategy*. Rural Strategy Background Paper No. 4. World Bank, Washington, D.C.
- Lewis, A.W. 1954. “Economic development with unlimited supplies of labour”. *Manchester School* 28(2): 139–91.
- Lombardo, V. 2008. “Dual economy models: A primer for growth, income distribution and poverty analysis”. Working Paper No. 12–2008. Department of Economic Studies, University of Napoli “Parthenope”.
- Mao, Y-K and C. Schive. 1995. “Agricultural and industrial development in Taiwan”. In *Agriculture on the Road to industrialization*, J.W Mellor, ed, John Hopkins University Press, Baltimore, 1995, Ch. 2, pp. 23-66.
- Maxwell, S., I. Urey and C. Ashley. 2001. *Emerging Issues in Rural Development: An Issues Paper*. Overseas Development Institute, London.
- MINAGRI (Ministère de l’Agriculture). 1980. *Bilan diagnostique du secteur agricole de 1960 à 1980, Cameroun*: Yaoundé, Mars.
- National Institute of Statistics (NIS). 2008a. “Preliminary results of the ECAM III household consumption survey”. National Institute of Statistics, Yaoundé.
- National Institute of Statistics (NIS). 2008b. *Tendance, Profil et Déterminant de la Pauvreté au Cameroun en 2007*. At www.statistic-Cameroun.org Accessed May 2009.
- National Institute of Statistics (NIS). 2007. *Enquête Camerounaise Auprès des Ménages (CHCS III)*. National Institute of Statistics, Yaoundé.
- National Institute of Statistics (NIS). 2005. *Les Comptes Nationaux Du Cameroun 1993–2004*. National Institute of Statistics, Yaoundé.
- National Institute of Statistics (NIS). 2004. *Annuaire Statistique du Cameroun*. Edition 2004. Tome III. National Institute of Statistics, Yaoundé.
- National Institute of Statistics (NIS). 2002a. *CHCS II: Document de Méthodologie*. National Institute of Statistics, Yaoundé.
- National Institute of Statistics (NIS). 2002b. *Evolution de la Pauvreté au Cameroun entre 1996 et 2001*. National Institute of Statistics, Yaoundé.
- Ndamsa, D.T. and F.M. Baye. 2011. “Linking employment and poverty changes between 1996 and 2001 in Cameroon”. *Économie Appliquée*, 64(3): 85–114.
-

- Ndoye, O. and D. Kaimowitz. 2000. "Macro-economics, markets, and the humid forest cover of Cameroon, 1967–1997". *Journal of Modern African Studies*, 38(2): 225–53, June.
- Nstama, M. S E. and B. N. Epo. 2009. "Gender, agricultural crisis, innovatory choices and profitability in maize cultivation in Cameroon". Paper presented at the 2009 Annual Conference on *Contemporary Crisis and New Opportunities*, organized by the Development Studies Association (DSA), 2009.
- Pham, T.H., Tuan, A. B and D.L. Thanh. 2010. "Is Nonfarm Diversification a Way Out of Poverty for Rural Households? Evidence from Vietnam in 1993-2006". Final PEP Research report No. 1006. Partnership For Economic Policy Research Network, www.pep-net.org
- Ranis, G. 2006. "Is dualism worth revisiting?". In A. de Janvry and R. Kanbur, eds, *Poverty, Inequality and Development: Essays in Honor of Erik Thorbecke*. Kluwer, Ch. 18: 371–85.
- Ravallion, M. and M. Huppi. 1991. "Measuring changes in poverty: a methodological case study of Indonesia during an adjustment period". *World Bank Economic Review*, 5: 57–82.
- Shorrocks, A.F. 1999. 'Decomposition procedures for distributional analysis: A unified framework based on Shapley Value'. Mimeo. Department of Economics, University of Essex, Essex.
- Sunderlin, W.D., O. Ndoye, H. Bikié, N. Laporte, B. Mertens and J. Pokam. 2000. "Economic crisis, small-scale agriculture, and forest cover change in Southern Cameroon". *Environmental Conservation*, 27(3): 284–90.
- Syrquin, M. 2006. "Structural Transformation". In D. A. Clark, ed., *The Elgar Companion to Development Studies*. Cheltenham, UK: Edward Elgar Publishers: 601–7, 203–73.
- Temple, J. 2005a. "Dual economy models: A primer for growth economists". *The Manchester School*, 73(4): 435–78.
- Temple, J. 2005b. "Growth and wage inequality in a dual economy". *Bulletin of Economic Research*, 57(2): 145–69.
- The Economist. 2007. "The world goes to town". Special Report on Cities (May 5th), volume 383, No., 8527.
- Thirlwall, A.P. 1999. *Growth and Development: With Special reference to Developing Economies*, 6th edition. London: Macmillan Press Ltd.
-

Timmer, C.P. 2007. “The structural transformation and the changing role of agriculture in economic development: Empirics and implications”. Wendt Lecture, American Enterprise Institute, Washington, D.C.

Touna-Mama. 1996. *Crise Économique et Politique de Déréglementation au Cameroun*. Paris: L’Harmattan.

Van de Walle, D. and D. Cratty. 2003. *Is the Emerging Non-Farm Market Economy the Route Out of Poverty in Vietnam?* Policy Research Working Paper No. 2950, Development Research Group, World Bank, Washington, D.C.

World Bank. 2000. *Rapport sur le développement dans le monde 2000: L’agriculture au service du développement*. The World Bank, Washington, D.C.

World Bank. 1990. *Making Adjustment Work for the Poor. A Framework for Policy Reform in Africa*. The World Bank, Washington, D.C.
