EE

E u r o E c o n o m i c a

Issue 1(32)/2013 *ISSN: 1582-8859*

Responsiveness of Private Sector Household Income to Employment Vulnerability in Cameroon

Ndamsa Dickson Thomas

Department of Economics and Management, Cameroon

dicko200048@yahoo.fr

Baye Mendjo Francis

Department of Quantitative Methods, Cameroon

bayemendjo@yahoo.com

Epo Boniface Ngah

Department of Quantitative Methods, Cameroon

epongahb@yahoo.fr

Abstract
This paper investigates the determinants of employment vulnerability among private sector workers and assesses it effects on private sector household income in Cameroon. To address these objectives, use is made of multiple correspondence and the IV econometric analyses. Econometric results indicate that the density of formal institutions is negatively and significantly associated with employment vulnerability. Equally, more educated and skilled workers are less likely to be vulnerable in employment. Results show that employment vulnerability generally correlates inversely with private sector income. We found evidence of compensation for managerial and supervisory duties in the private sector. Other correlates like years of schooling, cumulated labour market experience and access to microcredit are important in determining private sector household income, slightly more so in the informal and farming sectors than other sectors.

Key words: Employment vulnerability, Household income, Compensating differential, Private sector

I. Introduction

Over the past 25 plus years, labour markets in Cameroon and other developing countries have been experiencing marked changes in response to important social and economic forces. Since the advent of the crisis of the 1980s, the image of the household with a single earner, most often the male, working full-time in a permanent job with one employer has been replaced by a combination of two earners, with many working part-time or in temporary employment. Some employed household heads have even gone further to combine two jobs in order to keep and maintain their families. Most of the

retrenched public sector workers as a result of the structural adjustment programme (SAP)[1] embraced private sector farm, nonfarm, formal and informal activities to cope with these shocks and to maintain their households. The private sector is represented here as a last resort in times of crisis and major economic shocks. Unfortunately, this is the sector where unsteady income schemes, social insecurity, job dissatisfaction, job instability and other characteristics of indecent or vulnerable employment are likely more apparent. Studies on the causes and consequences of these rather unfavourable working conditions are still rare.

In the Cameroon labour market, household heads working in the private sector are more vulnerable in their jobs than those in the public sector. This situation is of major concern, especially the puzzle on how this adverse situation of employment vulnerability in the private sector affects the labour outcomes (say monthly income) of those therein. It is equally worthy to mention that employment vulnerability intensity does not level-up across private sector employment segments. For instance, workers in the informal and farm employment sectors are more vulnerable compared to those in the formal-private and nonfarm-private sectors, respectively. Thus, more workers in formal-private and nonfarm-private employment sectors have decent employment status compared to their informal and farm sector counterparts. These summarised examples are indications that the participation of these vulnerable categories of workers in the labour market leaves their well-being at risk.

Recent attention along these lines is focused on assessing vulnerable employment and showing how it associates with major economic outcomes (ILO, 2007). There is also growing consensus that job instability, an aspect of vulnerability, is central among poor workers and is a leading cause and expression of poverty (World Bank, 2000). Current empirical endeavours in Cameroon even indicate that employees holding fixed term contracts are twice more productive than those holding indefinite-term contract (Fomba, 2008; 2011). Other country-based endeavours have investigated the influence of trade union membership on income or salary (Tsafack, 2000). All these evidences show that employment status is associated with major economic outcomes. This chapter takes a broader view of this association; it combines institutional variables (employment contracts; compliance with the labour code in terms of social security, vacation, hours work); time-related factors (casual and unstable employment); job satisfaction; remuneration stability; union membership; and job-related fringe benefits in the form of an index to check this association. Importantly, Cameroon in her most recent Growth and Employment Strategy Paper (GESP) has placed growth and decent employment at the centre of poverty reduction. In order to provide inputs into the GESP and to assist the government in her struggle against vulnerable employment and poverty, this chapter addresses the main question of: What is the role of employment vulnerability among other determinants of private sector household income in Cameroon?

Studies on the association of vulnerable employment and economic outcomes like income are just beginning to evolve. In the developed countries, it has been observed that physically hazardous and highly strenuous jobs are often better paid than less strenuous or hazardous jobs (see Poggi, 2007; Fernandez and Nordman, 2009). Unfortunately, empirical evidence on the theory of compensating wage differentials[2] is completely absent at country-specific levels in sub-Saharan Africa (SSA). Bocquier et al. (2010) use data from the 1-2-3 surveys collected in 2002-2003 to carry-out a cross

1 The putting in place of the SAP involved: liquidating non-profit making and privatising some marginal profit making public enterprises; reducing public expenditure; freezing salary increment of the public sector workers; decreasing public and semi public sector workers from early 1990 and implementing salary cuts in January and November 1993 (Baye, 2006a).

[2] Smith (1776) identified five circumstances to explain why it is not the wage that is the balancing factor among different jobs on a competitive market, but all the pros and cons of a job.

country comparison for seven economic capitals[3] of West Africa. The work of Bocquier et al. (2010), while filling gaps in the SSA empirical literature on employment vulnerability, has two major weaknesses: (1) the study draws data from the 1-2-3 surveys which only capture issues in economic capital cities, hence not suitable for nationwide policies; and (2) it uses only variables and sectors which are similar in the 7 cities under review. In an effort to circumvent these weaknesses, the following specific research questions would be addressed in this study:

- What are the major determinants of private sector employment vulnerability?
- What is the role of employment vulnerability among the determinants of private sector household income in Cameroon?
- What is the effect of employment vulnerability on household income across employment sectors in Cameroon?

Using the 2007 CHCS-III which covers vital labour market indicators, the main objective of this chapter is to identify the major determinants of private sector household income in Cameroon, overall and by employment sectors. The specific objectives are:

- To assess the determinants of private sector employment vulnerability;
- To evaluate the effect of employment vulnerability on private sector household income, while testing the theory of compensating wage differentials;
- To examine the differential effects of employment vulnerability on income by sector of employment (formal/informal and farm/nonfarm). This will also allow us to track elements of segmentation across formal/informal and farm/nonfarm with respect to vulnerability; and
- To identify policy orientations on the basis of the study.

These objectives will allow our analysis to check whether vulnerability has a differential effect on income depending on the worker's sector of employment and location.

II. Literature Review and Theoretical Framework

Literature Review

Literature on traditional models, within the competitive framework, underline the existence of compensating payments due to non-pecuniary job attributes like working conditions or differences in the stability of jobs across industries. It is important to recall that the idea of equalizing or compensating wage differentials was first introduced by Smith (1776, Book I, Chapter X, Part I). Growing empirical literature on the evidence of this idea, compensating wage differentials, only found strength in the 1970s. Early studies on the internal wage policies of firms acknowledged the presence of equalizing differences (Doeringer and Piore, 1971, p. 66-68 and Reynolds, 1974, p. 210).

A line of reflection focused on working conditions and job-related risks to brighten this idea. Lucas (1972) found evidence of significant compensation for repetitive work and somewhat smaller compensation for jobs with adverse working conditions (hazards and extreme temperature). For him, jobs requiring physical strength appeared to command lower wages (p. 554-55). In the contrary, Bluestone (1974), Quin (1975), and Hamermesh (1977) all found no evidence of wage compensation for jobs requiring physical strength (hazards or extreme temperature). This is clear evidence of

[3] Abidjan, Bamako, Cotonou, Dakar, Lome, Niamey, and Ouagadougou

conflicting results on this subject in the literature. Smith (1973) concluded that the probability of job-related fatal injuries (or job-related death) may be fully reflected in wage rates.

Another stream of studies have emphasised on the fact that individuals may choose more flexible and easier jobs at the cost of lower wages. Lazaar (1977) observed significantly lower wages for young men enrolled in school. He argued that this observation is consistent with an equalizing-difference explanation which holds that students optimally prefer more flexible and easier jobs at the cost of lower wages. Though, with little empirical support, human capital theorists maintain that individuals gain entry into occupations with prospects of higher future wages only by accepting lower current wages (Mincer, 1974b, p. 58-59). Schiller and Weiss (1977) examined the nexus between pension benefits and wages in a sample of firm workers and found evidence of equalizing-difference hypothesis among younger workers but not among those nearing retirement. These studies highlight the need to check the possibility of compensating differentials across sub-groups or employment sectors within the labour market.

Other studies have focused on hours of work flexibility, working conditions, and employment and income stability to address the theory of compensating wage differentials. Duncan (1976) found substantial compensating differentials for some job characteristics (freedom to control hours worked, employment and income stability, and safe working conditions). In the same light, Duncan and Stafford (1977) reported positive premiums for work effort and for jobs that restrict "opportunities to choose an individual work schedule and work pace". However, the premiums become statistically insignificant when a theoretically preferable wage measure is employed. It is worthy to mention that up to this level, the empirical relationship between wages and other fringe benefits (like vacations, health insurance or job allowances) is still scarce.

A branch of the literature stresses on adverse working conditions from a broader perspective, including physical demands, noise, or dirtiness, by using hedonic wage equations (see for example Brown 1980). In recent research, for example, job stress (French and Dunlap, 1998), flexible working hours (Gariety and Shaffer, 2001), shift work (Lanfranchi et al., 2002), and perception of job instability, measured by product market volatility (Magnani, 2002), among other factors, have been investigated. Most of these studies suffered the problem of omitted-variable bias, and the coefficients of various adverse job characteristics were often wrongly-signed and insignificant in the wage equations (Bockerman et al., 2004). Bockerman et al. (2004), on their part, investigate the role of adverse working conditions in the determination of individual wages and overall job satisfaction in the labour market. Their results show that working conditions have a very minor role in the determination of individual wages in the labour market. In contrast, adverse working conditions substantially increase the level of job dissatisfaction and the perception of unfairness of pay at the workplace.

Another generation uses some industry-level variables to counteract the evidence of compensating-difference, stressing the importance of non-competitive dimensions of wage formation. In this perspective, Dorman and Hagstrom (1998) stress that the non-competitive aspects of wage formation are very important in terms of compensating wage differentials. Their estimated wage equation included a number of industry-level controls (such as profitability and capital/labour ratio) or, alternatively, a full set of dummies attached to industries. They found that the inclusion of industry-level controls largely wipes out the compensating wage differentials that have been observed in the literature. This pattern is consistent with the dominance of non-competitive wage formation in the labour market. Hwang et al. (1998) and Lang and Majumdar (2003) also acknowledge that working conditions may not be reflected in wages. Notwithstanding, it is important to recall that equilibrium distribution of wage and job characteristic combinations may not show evidence of compensating wage differentials.

Recent endeavours to investigate the theory of compensating wage differentials attempt to combine the characteristics of the workers with those of their jobs in the form of an index or indicator before studying the evidence of compensating-difference. The work of Fernandez and Nordman (2009), use individual job characteristics to construct the composite index of vulnerability and study its link with income. Like Poggi (2007), Fernandez and Nordman (2009) observe that, in developed countries, physically hazardous and highly strenuous jobs are often better paid than less strenuous or hazardous jobs.

Following from Cheli and Lemmi (1995) and Fernandez and Nordman (2009), Bocquier et al. (2010) construct the private sector employment vulnerability index and establish its links with monthly income in seven economic capitals of West Africa. Bocquier et al. (2010) find that the average impact of vulnerability on income is generally negative for an average level of vulnerability. In the formal private sector of the West African cities, losses of income due to vulnerability are lower for high levels of vulnerability, but do not translate into gains. In the informal sector, however, the average predicted income for a high vulnerability level is higher than the average predicted income for a low vulnerability level. This way, the assumption that average gains may compensate for a certain level of vulnerability is thus confirmed in the informal sector.

However, the work of Bocquier et al. (2010), though vital in the SSA empirical literature on employment vulnerability, draws data from the 1-2-3 surveys which only capture concerns in economic capital cities, hence not suitable for broad-based policies; and uses only variables and sectors which are similar in the seven cities under review, as intimated earlier. Empirical knowledge on the employment vulnerability at the country-level in SSA is still unravelled. As value added, our study uses the 2007 Cameroon household consumption survey (CHCS-III), to account for some additional variables (paid leaves, and housing allowances) in constructing the vulnerability index and establish its links with household per capita monthly income, using the IV econometric approach.

Theoretical Framework

Our interpretation of the link between employment vulnerability and household income draws on the theory of compensating wage differentials. There is a stretched history of economic research into the mechanisms or models that narrow or widen wage differentials between individuals. The first generation of such models focused on competitive markets where they found wage premiums compensating non-pecuniary job attributes, such as working conditions, and differences in job stability across industries (Brown, 1980; Rosen, 1086; Murphy and Topel, 1987). Most of these authors argue that when job characteristics (other than wages) enter into players' labour market decisions (firms and workers); the market balance is thus due to the equalisation of workers' utilities rather than their wages. Rosen (1986) speculates that the reckoning behind this is to be found in a simple supply and demand structure. On the one hand, labour supply decisions are based on a trade-off between earned income (wages) and the cost of doing the job (stress, repetition, production deadlines, etc.) such that, at optimum, wage differences correspond to the marginal rate of substitution between consumption and working conditions[4]. On the other hand, labour demand decisions by firms are based on a trade-off between the necessity of paying the workers compensation commensurate with the strenuous or hazardous nature of their tasks and the need to improve the working conditions offered.

In this perspective, under the hypothesis of homogeneous individuals and heterogeneous work environments, wages differ between workers such that they all obtain the same utility. To encourage

[4] Suppose we have the utility $U(C, A)$, where C is the worker's consumption and A adverse working conditions, the worker maximises her utility under constraint $C= W(A)$, implying that $W'(A)=UA/UC$.

workers to accept more adverse working conditions, firms therefore have to offer higher wages. This is the central idea behind the theory of compensating wage differentials. Bootlegging the hypothesis of homogeneous individuals necessarily introduces a great deal of uncertainty as to the existence of compensation for working conditions when it is observed at the midpoint of the worker distribution. There could be need to divide the population observed into more homogeneous groups, for instance by using a conditional wage quantile derived from quantile regressions or employment sectors, so as to reduce the noise created by the presence of individual heterogeneity in the estimation of the compensating differential. More lately, non-competitive theories have argued that wage differences between apparently identical individuals tend more to reflect non-compensating differentials, such as the workers' relative bargaining power (Daniel and Sofer, 1998; Manning, 2003) and the existence of efficiency wages[5] (employer's wish to pay workers at a higher rate than the one that would prevail over a competitive market). Other recent hypotheses have highlighted the existence of information asymmetries, which allegedly increase the friction in the labour supply-demand match (Hwang et al., 1998), and the existence of factor productivity differences between firms (Burdett and Mortensen, 1998; Pissarides, 2000; Mortensen, 2003).

Some empirical studies have spotlighted the relationship between wage structure and non-monetary job satisfaction, but most of these studies often generate conflicting results (for example, French and Dunlap, 1998; Groot and Maassen van den Brink, 1998; Lanfranchi et al., 2002; Magnani, 2002; Clark and Senik, 2006; Bockerman et al., 2006; and Poggi, 2007). Research into the nexus between compensating differentials and observed job attributes, especially when it entails distributional approaches is still just evolving. In a recent study of this kind, Fernandez and Nordman (2009) observe that the compensating differential actually differs depending on the worker's relative position in the income distribution. For example, pecuniary compensation for adverse working conditions could well be overestimated if the most capable (or resistant) workers are selected for employment statuses where these attributes are more commonplace.

Moreover, basing on the assumption that the most capable individuals are also the most likely to receive efficiency wages, or to have a certain amount of bargaining power, working conditions could well have less to do with the wage-setting process for these individuals than for other workers without these characteristics. By and large, workers could also find it easier to ask for premiums for adverse working conditions when the demand for labour exceeds the available manpower, creating a labour market imbalance that probably varies along the income distribution. Our work focuses on the issue of employment vulnerability found, for example, in insecure employment contracts, adverse working conditions and, more broadly, greater worker exposure to work-related risks. After investigating the determinants of employment vulnerability, we employ a quantitative approach addressing the effects of vulnerability on household income, while controlling for other correlates. Thereafter, we use a distributional approach checking whether there are any compensating differential phenomena found along farm-nonfarm and formal-informal employment sectors.

III. Methodology

Concerning the construction of the employment vulnerability indicator, see Appendix 2 for a description of the approach and initial variables used. Our interpretation of the link between employment vulnerability and income raises a number of econometric issues that our study attempts to

[5] For a review of the efficiency wage theories and its extension (see Katz, 1986 and Akerlof and Yellen, 1990). See Lindbeck and Snower (1989) for a review of insider outsider models (labour market segmentation theory).

address. There exists a likelihood of employment vulnerability being endogenous in the income equation. Our study then employs the instrumental variable approach (Wooldridge, 1997; Mwabu, 2009) to investigate the effect of employment vulnerability on income across employment sectors in Cameroon.

To quantify the effect of vulnerability on household income, what matters to us is the cumulative number of vulnerability criteria fulfilled by an individual rather than such or such a criterion. This way, the effect of vulnerability (I) on income can be written as follows:

$$Y = X\alpha_y + \varphi I + \varepsilon_1 \quad (1)$$

where: Y is the log of household per capita income per month; I is the vulnerability intensity; X represents a vector of the human capital variables and other correlates (potential labour market experience[6] and its square, control for gender-dummy, microcredit access, number of younger children, being married, seniority in the enterprise and control for urban residency); α is a vector of parameters to be estimated including the constant term; and ε_1 the error term. Our analysis has as objective to estimate the effect of employment vulnerability (φ) on income overall and across sub-sectors in Cameroon. For example, formal-private as opposed to the informal sector and farm as opposed to the non-farm sector.[7]

There is a probability of vulnerability being endogenous as unobservable variables may be associated with vulnerability and household income. More generally, unobservable variables that affect the level of vulnerability and the level of income may reflect the worker's bargaining capacities and the worker's household situation. Specifically, a worker who has no bargaining power, who is shy or has no social interactions, is likely to be unable to negotiate either good working conditions or wage rise. Equally, if a worker's household is insecure or if a worker's household is hit by a shock (illness or birth or unemployment), the worker may have to hastily accept a poorly-paid job, if she lacks social networks to respond to this household shock. In this respect, ignoring this factor in our equation may leave us with non-convergent estimators of (φ). We employ therefore the IV method to resolve this problem (see Card, 2001, Mwabu, 2009 and Bocquier et al., 2010).

The IV method involves the use of a vector of instrumental variables, Z, which explain vulnerability intensity and are not directly correlated with household income or ε_1, the error term in equation (1). Our instruments are regional density of formal governmental institutions and attachment to traditional believes captured at cluster level.[8] These instruments chosen to better suit the country context have no direct impact on income as they are not associated with the worker's productivity, capacities or the type of job held except through employment vulnerability itself. Thus, the reduced-form equation is given by:

$$I = X\alpha_I + Z\gamma_I + \varepsilon_2 \quad (2)$$

[6] Potential labour market experience = Age – minus schooling – minus six (job tenure in years).

[7] In the literature, labour market segmentation is usefully stylized by what is called labour market dualism (see Dixit, 1973). One sector is alternatively called "formal", "modern", "good jobs", or "urban" while the other part is alternatively called "informal", "traditional", "bad jobs", or "rural".

[8] The literature uses the marital status of the household head and the dummy variable for the institutional sector (formal private, informal private or unknown) of the individual's father (see Fernandez and Nordman, 2009 and Bocquier et al., 2010).

Where, α and γ are vectors of the parameters to be estimated and ε_2 the error term. Equation (2) will allow us to identify the determinants of employment vulnerability among private sector workers.

IV. Data used and Instruments of the Composite Indicator of Vulnerability

4.1. Data presentation and justification of the measure of income

Data presentation

We employ the Cameroon household consumption surveys, CHCS III conducted in 2007 by the National Institute of Statistics (NIS), which provides information on labour market employment sectors and labour market characteristics relevant for the study. The CHCS III survey was conducted between May and July 2007; and comprised 11391 households that were actually interviewed with 9219 of these household heads in the private sector and about 1102 of them in public/parapublic and international organisations. It is important to recall that 165 of these household heads are unemployed according to the international labour office, 93 are discouraged unemployed and 812 are inactive in the labour market.

The dependent variable for our study is per capita monthly income, surrogated by per capita expenditures per month. The potential endogenous variable is employment vulnerability indicator[9]. Exogenous included variables are education (years); experience (years of work) and its square; seniority in the main job (dummy); number of younger children (cluster level); number of married household heads (cluster level), gender (dummy); and location (dummy). Instruments of endogenous input are: density of institutions per region and attachment to traditional believes (cluster level). The density of regional institutions is extracted from the Presidential Decree N°2008/376 of November 2008 based on Administrative Organisation in Cameroon[10]. Other variables: sector of employment (farm/nonfarm, and formal/informal).

Justification of the Income Measure

This role of income can be interpreted in more than one way. If one has in mind spending power then perhaps disposable income (income after taxes and compulsory deductions) may be an appropriate concept. The focus on income as conventionally defined clearly has shortcomings, as it is hard to get reliable data on income (Atkinson and Brandolini, 2001). According to Blundell and Preston (1998) consumption expenditure may be a more appropriate economic indicator of income. For them, use of consumption data can avoid a number of difficult technical problems that arise from the presence in practice of zero and negative incomes.

Ravallion (1994) underlines that expenditure is less inclined to vary with fluctuations than income. This view makes expenditure particularly suitable in developing and agricultural economies where the informal sector is considerable and agricultural activities, subject to seasonal variations, are predominant. Consolidating this observation, Deaton (2009) emphasises that expenditure data is better measured than income in developing countries and agrarian economies; as income for rural households may fluctuate within the year in line with the harvest cycle, in urban economies with large informal sector as well; income flows may be inconsistent. Thus, it may be quite difficult for households to provide meaningful information on their income. In this perspective, information on income in most surveys in developing countries is likely to be of low quality. In this context, expenditure is likely a closer proxy to the current income of a household. Moreover, for Thorbecke (2005) and Klasen (2008) it is easy to obtain information on the income of the earner(s) in a household, but it is not easy to know how this income is later on distributed within the household. Generally, this problem is solved by assuming a unitary distribution of income within the household.

[9] See Appendix for the construction of the employment vulnerability indicator.

[10] See appendix for the density of institutions per region.

Thus, justifying our use of expenditure per capita as a proxy of per capita income; given by household total expenditure divided by household size.

This proxy may particularly suit the context of developing countries like Cameroon, as individuals and households hardly answer survey questions relative to their income. They hide their monthly, weekly or daily income for reasons still unknown to us. This way, the income columns of surveys in most developing countries are plagued with many missing values rendering them unrepresentative. For instance out of the 11391 households interviewed in the 2007 Cameroon household consumption survey, CHCS III, only about 6700 household heads provided information on their income, leaving us with about 4600 missing values. Thus, in this study household per capita income is surrogated by household per capita expenditure.

4.2. Justifications of the Instruments of Vulnerability

Institutions and Vulnerability

In almost every country today, governments have an unquestionable responsibility in ensuring decent working conditions among individuals and households therein. Vulnerability is related to the risks, shocks, and stresses to which a household head is subjected and the state of being defenceless or the lack of means to cope with these risks, shocks, stresses, or demands (Pagés, 2003; p.9). The sources of these risks, among other things, may include institutions governing resource access and contract enforcement, working conditions, together with labour and commodity markets as a whole. We argue that the regional spread of administrative institutions and institutional change may help household heads in their efforts to attain decent employment status. Almost every household in Cameroon would be capable of developing better working conditions if the regional institutions implement policies and programmes related to contract enforcement, minimum wages, social security and other decent work facets.

The government and her regional institutions have, as duty, to encourage a general attitude in the population about the quality of work and favourable working conditions. The formal institutions, found in each sub-division, range from civil and municipal administrations, law and order, to ministerial delegations. Each sub-division in Cameroon is generally endowed with these institutions; the more there are sub-divisions in a region, the higher the institutional coverage in this region. Thus, we consider the number of sub-divisions in a region to capture its institutional coverage. The regional delegation for labour and social security and employment and professional training coordinate and promote regional employment. These regional delegations should create the necessary conditions so that working household heads and employment agencies can function smoothly. For North (1990), institutions are ‘the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. He refers to the rules governing property rights, businesses, employment, churches and schools. Ostrom et al. (1993) support this, by stating that institutions are the people and the patterns of regular, repetitive interactions among them that transform inputs into outputs. Also note that informal institutional settings that include social norms, routines, and political processes can determine working conditions of people. Thus institutions should interact between employers and employees to encourage favourable working conditions. We therefore use the density of formal regional institutions in Cameroon to instrument for employment vulnerability. We expect the density of institution to correlate inversely with employment vulnerability.

Traditional Attachment and Vulnerability

The question of the linkage between traditional attachment and vulnerability in employment may appear new. However, attachment to traditional believes, given its practice in Africa, is probably a non-negligible factor of social and economic interactions. We argue that attachment to traditional

doctrine affects a household head's bargaining power and his socio-economic interactions negatively. Thus, the latter, relatively absent from modern social classes as compared to Protestants, Christians and Muslims lacks the social networks and ability to deal with household shocks (unemployment, birth or illness). Such a household head may have to accept, in the event of a household shock, a poorly-paid or a job with adverse working conditions, just because she lacks social networks to respond to this household shock. It is also vital to highlight that this phenomenon is generally inherited, because it is past down from generations to generations involving little or no choice on the part of the traditionalists; though it can be argued that it is one's choice to remain a traditionalist.

Weber (1930) argues that Protestant doctrines, for instance Calvin's doctrine of predestination provide the theological motivation for capitalistic activities. According to him, strict Protestant asceticism or Catholic monasticism which these churches naturally imposed, especially on the property less classes, affects the productivity of labour in the capitalistic sense of the word. This is indication that strict doctrines that churches and traditions practice may undoubtedly affect a household head's decision and determination at work as well as her ability to negotiate wage rise and working conditions. Audretsch et al. (2007), further confirms this, by arguing that religion affects an individual's decision making habit. Given the possible correlation of traditional attachment with our outcome variable, income, we capture it at cluster level to instrument for vulnerability. We expect traditional attachment to correlate positively with employment vulnerability.

V. Empirical Findings and Interpretations

5.1. Descriptive Statistics and Reduced-form Estimates of Vulnerability

Here we carry out some descriptive discussions on the variables employed in this chapter and present the predictors of employment vulnerability. These discussions will help enhance our interpretations and allow us generate study-specific conclusions.

Descriptive Statistics

Table 1 hosts summary statistics describing the variables used in the empirical analysis. On average, a household head in the private sector earns about 21 500 CFA francs per month. This average monthly income is well below the minimum wage of 28 500 CFA francs per month in Cameroon. Most of the households in our sample are headed by men and majority are rural dwellers. More than 79% of households are headed by men as opposed to about 21% headed by women. Close to 30% of private sector households live in urban areas whereas 70% are in rural areas. On the averagely, there are more vulnerable household heads in the private sector compared to the public sector. This vulnerability differential between the above employment sectors is enough ground for further questioning of how these private sector household heads may be affected by this rather adverse situation. Very few private sector workers hold managerial positions and just a small minority of private sector operators have access to microfinance credit. Only about 8% of the household heads interviewed are holding managerial positions in private enterprises and only about 6% of private sector household heads in a cluster benefit access to microcredit.

Averagely, a private sector household head has acquired 6 (six) years of education, so majority have only completed primary school. According to the Government of Cameroon (2007), about 33.3% of these private sector operators have no education, 37.4% have completed primary education, 26.3% have reached the secondary school level and only 3% have reached the university. About 63% of household heads in each cluster are married and on average household heads in a cluster have 2 (two) children.

Table 1: Descriptive Statistics

Variables	Number of observations	Mean	Standard deviation

Outcome variables			
Log of household capita monthly income	9219	10.17	0.64
Household per capita monthly income	9219	21 500	20357.37
Potential endogenous variable			
Employment Vulnerability Intensity (0 - 100)	9219	87.90	15.35
Exogenous included Variables			
Labour experience (years of work)	9219	32.93	13.95
Labour experience squared	9219	1278.82	1066.06
Years of Education	9219	5.37	4.68
Seniority in the enterprise (dummy for managerial position)	9219	0.08	0.27
Access to microcredit (cluster level)	9219	0.06	0.09
Number of younger children (cluster level)	9219	1.18	1.33
Number of married household heads (cluster level)	9219	0.63	0.21
Gender of household head (male = 1)	9219	0.80	0.40
Location of household head (urban = 1)	9219	0.30	0.46
Instruments of endogenous variable			
Density of institutions (per region)	9219	0.50	0.32
Attachment to traditional beliefs (cluster level)	9219	0.04	0.08
Controls variables			
Predicted vulnerability residual	9219	-0.09×10^{-7}	13.82
Other variables			
Formal private employment sector (formal = 1)	9219	0.08	0.26
Informal employment sector (informal = 1)	9219	0.92	0.26
Nonfarm private employment sector (nonfarm = 1)	9219	0.543	0.48
Farm private employment sector (farm = 1)	9219	0.457	0.48

Source: Compiled by author from the 2007 Cameroon Household survey (ECAM III)

On the average, each region in Cameroon has about 50% of institutional coverage. Most private sector household heads are in the informal sector followed by the farming sector. Close to 92.5% of private sector household heads are in informal employment as opposed to 7.5% in the formal employment sector. Close to 46% of these household heads depend on farm activities (small scale farms, plantations, fruit firms and animal rearing) compared to about 54% in nonfarm activities (own-account businesses, housekeeping, banking, as well as associative enterprises like cooperatives, NGOs, syndicates).

The Reduced-form Estimates of Vulnerability – Determinants of employment vulnerability

Excluded Variables versus Employment Vulnerability

The employment vulnerability indicator ranges from 0 to 100 and a progression towards 100 depicts increasing vulnerability. Table 2 submits the reduced-form estimates of the endogenous variable, employment vulnerability (equation 2). The density of institutions which represents the institutional coverage in each region is negatively and significantly associated with employment vulnerability. This implies that decision making to reduce vulnerable employment among private sector workers in Cameroon should also be seen from the angle of institutional coverage by region. Regional institutions (civil and municipal administrations, law and order, ministerial delegations, and trade unions) can play a vital role in encouraging a general attitude among private sector workers about the quality of work and favourable working conditions. Regional delegations of labour and social security as well as employment and professional training are crucial inputs in promoting quality employment among

private sector workers at the regional level, that is, assist in building and guarantying a win-win interaction between the private sector employer and the employee.

Moreover, civil society organisations, trade unions and employers can improve their own efforts to reduce vulnerable employment. Trade union strategies for increasing membership amongst vulnerable workers, assessing the current availability of employment advice provision, and considering how good employers can better share practice and promote change with and amongst others are to be encouraged. This sense of judgment corroborates that which is underlined in North (1990) on the role of institutions.

The average number of workers who are attached to traditional believes and doctrines captured as cluster level means, is positive and significant in determining employment vulnerability. This is indication that traditional attachment adversely affects a worker's social and economic interactions, limiting the individual's ability to deal with household and economic shocks like unemployment, birth and illness; exposing the latter to greater chances of accepting a vulnerable job in order to cope with these shocks. This observation is probable, as workers who are attached to traditional believes are likely to be absent from modern and decision making classes in the society.

Table 2: Determinants of Employment Vulnerability

Explanatory Variables	Dependent Variable	t-values
	Employment vulnerability intensity: ranges from 0 – 100 for household heads actively employed in the private sector and missing if household head is unemployed, discouraged unemployed or inactive	
Density of institutions (per region)	-2.951***	(-6.31)
Attachment to traditional beliefs (cluster level)	13.405***	(7.41)
Labour experience	-0.197***	(-4.47)
Labour experience squared	0.003***	(4.36)
Years of education	-0.873***	(-21.85)
Seniority in the enterprise	-5.036***	(-9.09)
Access to microcredit (cluster level)	-0.106	(-0.07)
Number of younger children (cluster level)	0.279**	(2.44)
Number of married household heads (cluster level)	2.927***	(3.61)
Gender of household head (male = 1)	-2.948***	(-7.78)
Location of household head (urban = 1)	-6.095***	(-17.37)
Constant	100.486***	(96.67)
R-squared	0.1896	
Adjusted R-squared	0.1887	
Partial R-squared (on excluded instruments)	0.0108	
Fisher Test –statistic (df; p-value) (on excluded instruments)	41.09 (2. 9207; 0.0000)	
Observations	9219	

Source: Computed by author using ECAM III

*Note: ***, ** and * represent 1%, 5% and 10% levels of significance, respectively*

Included Variables versus Employment Vulnerability
Included variables in the outcome equation that are positively associated with employment vulnerability are: labour experience square, the cluster mean of number of children less than 5 (five) years, and the cluster mean of number of married household heads. Contrary to labour experience square, labour experience of worker is negatively and significantly correlated with employment vulnerability. This indicates that though work experience correlates negatively with employment vulnerability, there is a critical level of labour experience above which it starts correlating positively with employment vulnerability; this may reflect experience beyond retirement. This is also indication of a U-shaped relationship between work experience and employment vulnerability.

Education in years is negatively related to employment vulnerability. Interestingly, this result shows that the more educated an individual is, the less likely is this individual to be vulnerable. These findings are supported by Imoro and King (2006) who found that inadequate participation in education and skills training expose people, especially the youths, to vulnerability in terms of employment. Educated workers are not only likely to access decent jobs in the labour market but can also bargain their wages and working conditions better than their uneducated counterparts. Private sector workers in the urban areas are generally less vulnerable as well as those who have access to microcredit. Thus, policies to promote access to microcredit among private sector workers in Cameroon have direct potentials to reduce vulnerable employment.

Being male gender type is negatively and significantly related to vulnerability in the private sector. These is evident as most of the petit businesses or petit trading in the private sector, with no social cover, less security and apparent instability, are done by women. Thus, training and capacity building programmes to empower women and young girls are vital. Training in income generating activities, in the management of micro-financial institutions and capacity upgrading of those already in private employment is a way forward. This suggestion corroborates with the Government of Cameroon (2012, p. 97), where emphasis is placed on socio-economic development through advocacy, sensitization, support, capacity building and other forms of support programmes.

Relevance, Strength and Validity of Instruments
The first-stage F-statistic on excluded instruments of 41.09 (p-value 0.000) is evidence that the two instrumental variables are jointly significant (Table 2). Concerning the validity and strength of our instruments, the Sargan Chi2 test statistic of 3.028 (p-value 0.0819) casts no doubt on the validity of the instruments. While allowing for a 2SLS relative bias of ten per cent, the test statistics of 41.086 is far more than the Stock-Yogo weak ID test critical value of 19.93, implying that our instruments are not weak (Table 3 column 2).

5.2. Determinants of Private Sector Household Income in Cameroon
The primary objective of this section is to investigate the effect of employment vulnerability on private sector household income, while controlling for other correlates of private sector income. After considering the effects of employment vulnerability on the general sample of private sector workers, further checks for the differential effect of employment vulnerability are conducted by examining its effects across formal/informal and nonfarm/farm private employment sectors in Cameroon.

5.2.1. Correlates of Private Sector Household Income under Alternative Assumptions: Full Sample

Table 3 hosts estimates of the income production function for the whole sample under different approaches or assumptions. Column (1) presents the ordinary least squares (OLS) estimates of the structural parameters of Equation (1). The next column, column (2), submits the instrumental variable (IV) estimates of household income function.

In Table 3, employment vulnerability is negatively and significantly related to household per capita monthly income irrespective of the approach used. This result ties with Bocquier et al. (2010) who found that the average impact of vulnerability on income is generally negative in developing countries. It is also important to highlight that this result runs contrary to Poggi (2007) and Fernandez and Nordman (2009) who observed that, in developed countries, the effect of employment vulnerability on income is positive. According to Poggi (2007) and Fernandez and Nordman (2009), workers who accept adverse working conditions are often better paid. This type of situation is possible in developed countries where the labour is highly specialized, but in developing countries or in low income countries this situation is most likely to weigh negatively on labourers; with a highly unskilled and unspecialised labour force. Moreover, the opportunity cost of most unskilled labour in Cameroon is near zero.

Table 3: Income Production Function: under Alternative Assumptions - Dependent Variable is log of Household Per Capita Monthly Income

Variables	Estimation Approach	
	OLS (1)	**IV 2SLS (2)**
		Correcting for endogeneity
Employment vulnerability intensity	-0.005***	-0.028***
	(-13.4)	(-6.03)
Labour experience	-0.013***	-0.018***
	(-8.54)	(-8.63)
Labour experience squared	0.00016***	0.0002***
	(8.08)	(8.28)
Years of education	0.030***	0.010**
	(20.7)	(2.26)
Seniority in the enterprise	0.298***	0.184***
	(15.3)	(5.65)
Access to microcredit (cluster level)	0.394***	0.402***
	(6.89)	(5.87)
Number of younger children (cluster level)	-0.111***	-0.103***
	(-27.3)	(-20.40)
Number of married household heads (cluster level)	-0.299***	-0.235***
	(-10.4)	(-6.38)
Gender of household head (male = 1)	-0.053***	-0.121***
	(-3.93)	(-5.73)
Location of household head (urban = 1)	0.417***	0.272***
	(33.0)	(8.31)
constant	10.44***	12.776***
	(203.0)	(27.13)
R-squared / Uncentred R-squared (for 2SLS)	0.4095	0.9963
Partial R-squared (on excluded instruments)		0.0108
Weak identification test: Cragg-Donald F-statistic [10% maximal IV relative bias]		41.086 [19.93]
Underidentification test (Anderson canon. Corr. LR statistic – Chi2 [df;p-value]		81.913 [2;0.0000]
Sargan statistic (overidentification test of all instruments) – Chi2[df;p-value]		3.028 [1; 0.0819]
Durbin-Wu-Hausman Chi2 test for exogeneity of the potential endogenous variable [df;p-value]		35.973 [1;0.0000]
Number of observations	9219	9219

Source: Computed by author using ECAM III

*Note: ***, ** and * represent 1%, 5% and 10% levels of significance, respectively.*

t-statistics in parentheses, except otherwise specified.

The OLS estimate of the effect of employment vulnerability on income is -0.005. It is likely that workers with less social networks or low bargaining power are more vulnerable than those with enough social networks, and hence more likely to suffer the ill effects of vulnerability on income than others. In this perspective, observed household income may not only suffer from employment vulnerability but also from unobserved variables that affect employment vulnerability. The OLS predictions of the effect of vulnerability on household income are therefore biased and inconsistent. Checking for this potential endogeneity, the impact of employment vulnerability on income remains significantly negatively and the coefficient of employment vulnerability jumps to -0.028 (Table 3, column 2). This finding conforms to Bocquier et al. (2010) who affirmed that when endogeneity is accounted for, the impact of vulnerability on income remains negative, but is much greater in absolute terms. This is indication that the size and degree of the effect of employment vulnerability on per capita household monthly income depend on the estimation approach used. This observation further emphasises the need to use the estimation approach that internalises potential econometric problems to better inform public policy advice. In addition, the endogeneity test – the Durbin-Wu-Hausman Chi2 stats = 35.973, p-value =0.0000 - for exogeneity of potential endogenous regressors rejects exogeneity of employment vulnerability (Table 3, column 2), confirming that this input into the outcome equation is indeed endogenous.

In Table 3 column 2, work experience correlates negatively with household monthly income, whereas work experience square relates positively with household monthly income. This does not only indicate that household income improves with higher levels of work experience but more precisely that there is a critical level of work experience above which household income is enhanced. Better still, it depicts a U-shaped relationship between labour or work experience and household income. Though knowledge on this critical level of work experience is still at large, this is indication that more experienced workers earn more than the less experienced.

Years of schooling relates positively with household income. This is not only because more educated workers are more likely to access opportunities in the labour market but also because they are more probable to operate with greater determination and dedication in the private sector. The finding corroborates with the predictions of the theory of human capital. It also ties with Kakwani et al. (2006, p. 29) who affirm that human capital acquired through education generally improves people's income potential. In this perspective, income increases with the years of education, thus confirming the works on human capital (Mincer, 1974a) and those based on Cameroon data (Abessolo, 1997; Ajab-Amin and Awung, 2005 and Fomba, 2008), but contrasting the work of Tafah-Edokat (1998) on Cameroon. One may think of years of schooling here to be endogenous, which is not wrong. But our comfort is on the argument that these years of schooling were already acquired before the income generating decisions. This way, the process of income generation does not actually underlie years of schooling.

Male gender type relates negatively with private sector income. Being male gender type does not reward labour in the private sector in Cameroon, but being a qualified or educated male can lead to gains in income. Seniority (holding a managerial position which is also attributable to leadership skills) in the enterprise is positively related to household income. This evidence of compensations for managerial and supervisory duties may be rewarding responsibility at work. This is consistent with the general acknowledgment that there is a matching of individuals with high ability to positions with higher job complexity (Barron et al., 1999). This result is in tandem with our third hypothesis of work in this chapter. Equally, the introduction of this variable may be viewed as another way to venture or capture the effects of unobserved individual heterogeneity.

Urban residency is positive and significant in determining household income; thus urban residency can also help in enhancing household income. This is not necessarily due to the existence of relatively better jobs in urban areas, but also because urban dwellers invest most of their time and money to acquire skills, good health and thus developing their human capital endowments and higher income (Udo-Aka, 1975 and Epo et al. 2010). The number of younger children aged between 0-4 years is negatively related to household income. This is however probable as their presence may reduce the likelihood of employment and/or participation in terms of hours worked in the private sector and further affects household income negatively. This observation is supported by Manda (1997) who found a negative and significant relationship between the presence of younger children in a household and the decision to enter employment. It also corroborates with Zamo-Akono (2007) who with Cameroon data observed that the presence of children reduces the hours of work for women in informal activities, but only pertinent beyond a given threshold (five children) in the formal private sector. It is also important to highlight that the presence of younger children increases the reservation wage[11] of especially married women, whereas their participation in labour activities can complement household income.

The number of married household heads captured as cluster means correlates negatively and significantly with household income. This is possible as being married as opposed to being single reduces women's chances of employment in the private and informal sectors and hence income. This observation runs contrary to Brown (1980) who found that being currently married enhances income. Access to microcredit is positively and significantly correlated with household income. Microcredit access permits households to finance consumption and also to undertake micro-investment endeavours that are welfare and income enhancing (Khandker, 2003; Hao, 2005; and Sikod and Ndamsa, 2011).

5.2.2. Correlates of Private Sector Household Income: Subsamples

Table 4 hosts instrumental variable estimates of the structural parameters of household per capita monthly income by private employment sectors in Cameroon. For the formal-private and informal employment sectors, the effect of employment vulnerability on household per capita monthly income is negative and significant. This finding is consistent with the full sample.

Worthy of note is that workers in the informal sector suffer less the adverse effects of vulnerability on income than their formal sector counterparts (Table 4 columns 1 and 2). This is indication that informal sector operators receive some relative pecuniary compensation for their adverse working conditions, though not enough to translate into gains[12]. This may be because employers in the formal segment where labour supply far outstrips demand, compared to the informal employment sector where entry is almost free, are reluctant to pay workers more for adverse working conditions. This way, informal sector operators are more inclined, compared to those in formal employment, to motivate their employees to take-up tasks that do not support entirely their fundamental rights as workers. The assumption that average gains may compensate for a certain level of vulnerability is therefore only relatively confirmed in the informal sector.

For the farm and nonfarm-private employment sectors (Table 4 columns 3 and 4), the effects of employment vulnerability on household per capita monthly income are also negative and significant as in the full sample. However, there is evidence that the effects of employment vulnerability on household income almost levels-up for these subsamples. This result implies that vulnerable workers in the farm and nonfarm sectors are exposed in the same way to losses in income due to employment vulnerability.

[11] The reservation wage is the minimum wage at which a person is willing to enter employment.

[12] This is to say that though informal workers receive some relative pecuniary compensations, their adverse working conditions do not still relate positively with their incomes.

The other correlates (for instance, labour experience and its square, years of education, gender type, microcredit access, seniority in the enterprise, number of younger children in the household, married household heads, male and urban residency) drive through the same message in the informal, farm and nonfarm employment sectors as in the full sample. Most striking, in the formal-private employment sector, being married relates positively and significantly to household income. This perhaps is not a call for the unmarried in this sector to rush for it, but rather a signal for greater determination and dedication at work for all those on the path to marriage. Cluster level access to microcredit which is an important input in the income function of informal sector workers is negative and not significant in the formal-private sector.

Table 4: Income Production Function: Dependent Variable is log of Household Per Capita Monthly Income

Variables		Sub Samples			
	Overall-Private (1)	**Informal (2)**	**Farm (3)**	**Formal (4)**	**Nonfarm (5)**
Employment vulnerability intensity	-0.028***	-0.026***	- 0.027***	-0.028*	-0.026***
	(-6.03)	(-6.32)	(-4.86)	(-2.02)	(-4.42)
Labour experience	-0.018***	-0.018***	-0.013***	-0.048***	-0.022***
	(-8.63)	(-9.74)	(-5.48)	(-5.89)	(-7.72)
Labour experience squared	0.0002***	0.00022***	0.00019***	0.0007***	0.00024***
	(8.28)	(9.29)	(6.21)	(5.46)	(6.05)
Years of education	0.010**	0.009***	0.013**	0.009	0.007
	(2.26)	(2.38)	(2.57)	(0.70)	(1.25)
Seniority in the enterprise	0.184***	0.128***	0.136***	0.418***	0.289***
	(5.65)	(4.34)	(3.36)	(5.03)	(7.51)
Access to microcredit (cluster level)	0.402***	0.438***	0.413***	- 0.124	0.251***
	(5.87)	(7.36)	(5.13)	(-0.63)	(3.04)
Number of younger children (cluster level)	-0.103***	-0.097***	-0.084***	-0.212***	-0.150***
	(-20.40)	(-22.4)	(-15.54)	(-11.56)	(-19.7)
Number of married household heads (cluster level)	-0.235***	-0.274***	-0.239***	0.191**	-0.117***
	(-6.38)	(-8.35)	(-5.26)	(1.97)	(-2.80)
Gender of household head (male = 1)	-0.121***	-0.117***	-0.156***	- 0.041	-0.060**
	(-5.73)	(-6.42)	(-6.32)	(-0.56)	(-2.31)
Location of household head (urban = 1)	0.272***	0.282***	0.110***	0.156*	0.227***
	(8.31)	(9.87)	(2.34)	(1.76)	(6.00)
Predicted vulnerability residual	0.024***	0.022***	0.021***	0.026*	0.022***
	(6.01)	(5.46)	(3.84)	(1.88)	(3.83)
constant	12.776***	12.556***	12.467***	13.244***	12.689***
	(32.50)	(30.64)	(22.75)	(9.42)	(21.8)
Fisher Test-statistic (df;p-value)	586.10 (11, 9207; 0.0000)	413.16 (11, 8253; 0.0000)	110.76 (11, 4205; 0.0000)	67.93(11, 942; 0.0000)	241.71 (11, 4809; 0.0000)
Adj R-squared	0.4111	0.3543	0.2226	0.4358	0.3546
Number of observations	9219	8265	4217	954	5002

Source: Computed by author using ECAM III

*Note: ***, ** and * represent 1%, 5% and 10% levels of significance, respectively.*
Note: t-statistics in parentheses, except otherwise specified

Worth mentioning is the observation that the number of younger children has a negative effect on household income in the formal and nonfarm-private sectors significantly in excess of that in the informal and farm sectors respectively. A possible, perhaps obvious, reason may be that workers in informal and farming activities find it relatively easier to cope with their labour market activities and younger children, thus mitigating the effect of the latter on market income. This is evident given the relative work flexibility with own-account businesses and farming activities compared to the formal-private activities where work is more tight and regulated.

6. Concluding Remarks and Policy Implications

This paper attempted to link up employment vulnerability and private sector household income empirically and further checked this linkage across private employment sectors in Cameroon. The paper employed the OLS approach and subsequently the IV approach to purge the structural parameter estimates of potential endogeneity problem.

Econometric results showed that the effect of employment vulnerability on private sector income is generally negative. Importantly, we found that informal as opposed to formal employment sector, receive some relative pecuniary compensation for their adverse working conditions, though not enough to translate into gains. Thus, the assumption that average gains may compensate for a certain level of vulnerability was therefore only relatively confirmed in the informal sector. We also found evidence of compensations for managerial and supervisory duties or rewarding responsibility at work. The years of education, cumulated labour market experience and access to microcredit proved to be important inputs in determining private sector income, more especially in the informal and farm sectors. It was equally found that the number of younger children aged between 0-4 years in a household adversely affects household income, especially in the formal and nonfarm private sectors.

These findings suggest that: (1) improving working conditions among private workers would go a long way to complement their income, especially in the informal and farming sectors. Specialized institutions like regional delegations for labour and social security and employment and professional training can coordinate and re-organise regional employment in the private sector in Cameroon to offer the best protection against the common features of employment vulnerability. These institutions are able to create the necessary conditions so that workers and employment agencies can function smoothly; they can ensure that workers in the private sector are treated fairly and meaningfully in terms of employment contracts, working hours per week, remuneration status and are affiliated to a social security network (example NSIF). Essentially, civil society organisations, trade unions and employers can improve their own efforts to reduce vulnerable employment. Trade union strategies for increasing membership amongst vulnerable workers, assessing the current availability of employment advice provision, and considering how good employers can better share practice and promote change with and amongst others are to be encouraged.

(2) More sector-specific targets or conventions to improve working conditions should be encouraged. Conventions like that signed in 2006 between the Cameroon government and the ILO to improve working conditions of private security agents, though not effective, is a good initiative that should be extended to other private sub-sectors, especially farm and informal. All these institutional efforts to improve working conditions among private sector workers would have a significant indirect effect on their private sector income. Institutions and conventions that militate to improve working conditions of workers in Cameroon are encouraged to scale-up their outreach to large numbers of vulnerable workers in informal and farming activities.

(3) Given the importance of education, training and regional institutions in curbing employment vulnerability, institutions like the National Employment Fund (NEF) should expand their activities - training of jobseekers, orientation of jobseekers, jobs prospects and provision of self employment - by opening other regional centres; as with the recent case of Bamenda. Each region in Cameroon should have a NEF to enhance the fight against employment vulnerability and thus, income. Equally, newly opened development centres like the National Civic Service for Participation in Development (NCSPD), set up during the first half of 2011, can also ensure participation of youths and vulnerable social groups in development.

(4) However, improve credit access and education programmes for private sector workers would greatly complement their income, more especially for those in informal and farming sectors. Struggles to reduce employment vulnerability should be accompanied by agricultural training programmes to enhance agricultural productivity in the farming sectors and reduce poverty therein. This way, region-based agricultural development programmes like the South-West Development Authority (SOWEDA) in the South Western region and the North-West Development Authority (MIDENO) in the Northwest Region may be replicated in other regions of Cameroon.

Bibliography

Abessolo, Y. (1997). *Capital Humain, Salaries et Segmentation du Marché du Travail dans les Pays en Développement: le Cas du Cameroun*, Thèse de Doctorat non publiée, Université Montesquieux-Bordeaux IV, Bordeau.

Akerlof, G. A. and Yellen, J. L. (1990). "The Fair Wage - Effort Hypothesis and Unemployment", *Quarterly Journal of Economics*, 105, p. 255-284.

Ajab-Amin, A. and Awung, W.J. (2005). "Economic Analysis of Private Returns to Investment in Education in Cameroon", Regional conference on education in West Africa: constraints and opportunities, organized by Cornell/CREA/INRA/Ministry of Education, November 25-26, 2005 Dakar, Sénégal.

Atkinson, A. B. and Brandolini, A. (2001). "Promise and Pitfalls in the use of Secondary Data-sets: Income inequality in OECD countries as a case study," *Journal of Economic Literature*, 39, p.771-799.

Audretsch, D. B., Boente, W. and Tamvada, J. P. (2007). "Religion and Entrepreneurship", Jena Economic Research Papers,Germany, May 2007.

Barron, J. M., Berger, M. C. and Black, D. A. (1999). "Do Workers Pay for On-the-Job Training?" *The Journal of Human Resources*, 34(2), p.235-252.

Baye, M.F. (2006a). "Growth, Redistribution and Poverty changes in Cameroon: A Shapley Decomposition Analysis", *Journal of African Economies*, 5 (5), p.543-570

Bluestone, B. (1974). *The personal Income Distribution: Individual and Institutional Determinants*, Ph.D Thesis, University of Michigan, p.132-222.

Blundell, R. and Preston, I. (1998). "Consumption inequality and income un-certainty, *Quarterly Journal of Economics* 113, p.603-640.

Bockerman, P. and IImakunnas, P. (2004). "Do Job Disamenities Raise Wages or Ruin Job Satisfaction?", ISSN 1795-0562, Discussion Paper 20.

Bocquier, P., Nordman, C. J. and Vescovo, A. (2010). "Employment Vulnerability and Income in Urban West Africa," *World Development Journal*, 38(9), p.1297-1314.

Brown, C. (1980). "Equalizing Differences in the Labour Market", *Quarterly Journal of Economics*, 94(1), p.113-134.

Burdett, K. and Mortensen, D. T. (1998). "Wage Differentials, Employer Size and Unemployment", *International Economic Review*, 39, p.257-273.

Card, D. (2001). "Estimating the Return to Schooling: Progress on some persistent Econometric Problems", *Econometrica*, 69, p.1127-1160.

Cheli, B. and Lemmi, A. (1995). "A 'Totally' Fuzzy and Relative Approach to the measurement of Poverty", *Economic Notes*, 94, p.115-34.

Clark, A. E. and Senik, C. (2006). "The (unexpected) structure of "rents" on the French and British labour markets," *The Journal of Socio-Economics*, 35(2), p.180-196.

Daniel, C. and Sofer, C. (1998). "Bargaining, Compensating Wage Differentials and Dualism of the Labour Market: Theory and Evidence for France", *Journal of Labour Economics*, July, 16(3), p.546-575

Deaton, A. (2009). "Instruments of Development: Randomization in the tropics, and the search for the elusive keys to economic development", NBER Working Paper 14690.

Dixit, A. K. (1973). "Models of Dual Economics" in James A. M. and Nicolas H. S. (eds), *Models of Economic Growth*, proceedings of a conference held by the international economic association at Jerusalem.

Doeringer, P and Piore, M. (1971). "Internal Labour Market and Manpower Analysis", Lexington, MA: D.C Health, p.66-68.

Dorman, P. and Hagstrom, P. (1998). "Wage compensation for dangerous work revisited", *Industrial and Labour Relations Review*, 52, p.116-135.

Duncan, G. (1976). "Income Function and Nonpecuniary Benefits", *Journal of Human Resources*, 11, p.462-483.

Duncan, G. and Stafford, F. (1977). "Peace of work, Unions and Income in Blue Collar Jobs", Unpublished manuscript.

Epo, B. N., Baye, M. F. and Manga, N.T. A. (2010). "Explaining spatial and inter-temporal sources of poverty, inequality and gender disparities in Cameroon: A regression-based Decomposition analysis," PEP Research network, Research paper 11321, www.pep-net.org.

Fernández, R.M. and Nordman, C.J. (2009). "Are there Pecuniary Compensations for Working Conditions?", *Labour Economics*, 16 (2), p.194-207.

Fomba, B. K. (2008). *Contrat de Travail et Fonctionnement du Marché du Travail au Cameroun,* Thèse de doctorat d'Etat en Sciences Economiques non publiée, Université de Yaoundé II, Soa.

Fomba, B. K. (2011). "Labour Contracts and Performance of Cameroonian Firms", IZA Discussion paper 6211, December 2011.

French, M. T. and Dunlap, L. J. (1998). "Compensating wage differentials for job stress," *Applied Economics*, 30, p.1067-1075.

Gariety, B. S. and Shaffer, S. (2001). "Wage differentials associated with flextime", *Monthly Labour Review*, 124, p.68-75.

Government of Cameroon (2007). *Enquête Camerounaise Auprès des Ménages*, ECAM-III, National Institute of Statistics 2007, Yaoundé.

Government of Cameroon (2012). *2012 Finance Law*, Report on the Economic, Social and
Financial Situation and Prospects of the Nation.

Groot, W. and Maassen van den Brink, H. (1998). "Job satisfaction, wages and allocation of men and women", TSES/STT Working papers, WP.10-98.

Hao, Q. M. (2005). *Access to Finance and Poverty Reduction an Application to Rural Vietnam,* Unpublished PhD Thesis, Department of Accounting and Finance, Birmingham Business School, University of Birmingham, Birmingham.

Hamermesh, D. S. (1977). "Economic Aspects of Job Satisfaction" in Orley Ashenfelter and Wallace Oates, eds., *Essay in Labour market and Population Analysis*, New York, John Wiley and Sons, p.53-72.

Hwang, H., Mortensen, D. T., and Reed, W. R. (1998). "Hedonic wages and Labour Market search", *Journal of Labour Economics*, 16, p.815-847.

ILO (2007). *ILO Report on Key indicators of the Labour Market*. 5th Edition, International Labour Office, Geneva 2008.

Imoro, R. and King, R. S. (2006). "Reducing the vulnerability of the youth in terms of employment in Ghana through ICT sector," International journal of Education and Development using Information and Communication Technology (IJEDICT), 2(3), p23-32.

Kakwani, N., M., Neri and Son, H. H. (2006). "Linkages between Growth, Poverty and the Labour Market", paper presented in a keynote address at the 5th General Meeting of the PEP Research Network, June 18-22, 2006, Addis Ababa, Ethiopia.

Katz, L. F. (1986). "Layoffs, Recall and the Duration of Unemployment," NBER Working Papers 1825, National Bureau of Economic Research, Inc.

Khandker, S. R. (2003). "Microfinance and Poverty: Evidence Using Panel Data from Bangladesh", World Bank Policy Research Working Paper 2945.

Klasen, S. (2008). "Economic growth and poverty reduction: Measurement issues using Income and Non-income Indicators," *World Development*, 36(3), p.420-445.

Lanfranchi, J., Ohlsson, H. and Skalli, A. (2002). "Compensating wage differentials and shift work preferences", *Economics Letters*, 74, p.393-398.

Lang, K. and Majumdar, S. (2003). "The pricing of job characteristics when markets do not clear: theory and policy implications", Working Paper No. 9911, National Bureau of Economic Research.

Lazaar, E. (1977). "Schooling as a Wage Depressant", *Journal of Human Resources*, 12, p.164-176.

Lindbeck, A. and Snower, D. J. (1989). "Macroeconomic policy and insider power", Seminar paper / Institute for International Economic Studies, University of Stockholm, No. 429, http://hdl.handle.net/10419/531.

Lucas, R. E. B. (1972). *Working Conditions Wage-rates, and Human capital: A hedonic study*, PhD Thesis, M.I.T.

Magnani, E. (2002). "Product market volatility and the adjustment of income to risk", *Industrial Relations*, 41, p.304-328.

Manda, D. M. (1997). *Labour supply, Returns to Education and the Effect of Firm size on Wage: The case of Kenya*, PhD Thesis, University of Gothenbury, Sweden

Manning, C. D. (2003). "Probabilistic Syntax", in Rens B., Jennifer H., and Stefanie J. (eds), *Probabilistic Linguistics*, p. 289-341, Cambridge, MA: MIT Press.

Mincer, J. (1974b). "The Distribution of Labour incomes: A survey with special references to the human capital approach," *Journal of Economic Literature*, VIII, p.1-26.

Mortensen, D. T. (2003). *Wage Dispersion: Why Are Similar Workers Paid Differently?* Cambridge, MA: MIT Press, 2003.

Murphy, K. M. and Topel, R. (1987). "Unemployment, risk and income: Testing for equalizing wage differences in the labour market", in Lang K. and Leonard J. (eds.), *Unemployment and the Structure of Labour Markets*, Basil Blackwell.

Mwabu, G. (2009). "The Production of Child Health in Kenya: A structural model of Birth Weight," *Journal of African Economies*, 18(2), p.212-260.

North, D. (1990). *Institutions, Institutional Change and Economic Performance*, Cambridge University Press, Cambridge.

Ostrom, E., Schroeder, L. and Wynne, S. (1993). *Institutional Incentives and Sustainable Development*, Westview Press, Boulder.

Pissarides, C. (2000). *Equilibrium* Unemployment *Theory*, MIT Press, Cambridge, MA, 2nd edition.

Poggi, A. (2007). "Do satisfactory working conditions contribute to explaining earning differentials in Italy? A panel data approach," *Labour*, 21(4/5), p.713-733.

Quin, J. (1975). *The Microeconomics of Early Retirement*, Ph.D Thesis, M.I.T., p.112-115.

Ravallion, M. (1994). "Measuring Social welfare with and without poverty lines", *American Economic Review*, 84(2), p.359-364.

Reynolds, L. (1974). *Labour Economics and Labour Relations*, sixth edition, Englewood cliffs, N.J., Prentice Hall.

Rosen, S. (1986). "The theory of equalising differences", in O. Ashenfelter and R. Layard (eds.), *Handbook of Labour Economics*, Chapter 12(1), Elsevier Science Publishers.

Schiller, B. and Weiss, R. (1977). "Pensions and Wages: A test of the equalizing Differences Hypothesis, unpublished manuscript, p.17.

Sikod, F. and Ndamsa, D. T. (2011). "Microcredit and Rural Household Welfare in Cameroon", Final report presented at the AERC biannual research workshop, 04-09 December 2011, Nairobi, Kenya.

Smith, A. (1776). "An Inquiry into the Nature and Causes of the Wealth of Nations," Volumes I and II, R. H. Campbell and A. S. Skinner, eds. Liberty Fund: Indianopolis.

Tafah-Edokat, E.O. (1998). "Rates of return to education: A case of Cameroon", Mimeo, Department of Economics, University of Yaounde II, Soa.

Thorbecke, E. (2005). "Multi-dimensional poverty: Conceptual and measurement issues", Conference Cornell: Conceptual Challenges in Poverty and Inequality, University of Cornell, April 2005.

Tsafack N. R. (2000). *Syndicats et performances économiques au Cameroun: analyse et réfutation au Cameroun*, Thèse de Doctorat d'Etat en Sciences Economiques non publiée, Université de Yaoundé II, Soa.

Udo-Aka, U. (1975). "Some issues in personal income distribution in Nigeria," Paper presented at the 1975 Annual Conference of the Nigerian Economics Society.

Weber, M. (1930). *The Protestant Ethic and the Spirit of Capitalism*. London and New York: Routledge.

Wooldridge, J. M. (1997). "On Two Stage Least Squares Estimation of the Average Treatment Effect in a Random Coefficient Model," *Economics Letters*, 56, p.129-133.

Zamo-Akono, C. (2007). *Fécondité, Sante et Offre de Travail des femmes au Cameroun*, Thèse de Doctorat d'Etat en Sciences Economiques non publiée, Université de Yaoundé II, Soa.

Appendices

Appendix 1: Density of Institutions per Region

Adamawa	Centre	East	Far North	Littoral	North	North West	West	South	South West
17	**51**	**23**	**43**	**30**	**17**	**33**	**36**	**26**	**29**

Appendix 2: Multiple Correspondence Analysis (MCA) of employment vulnerability

To construct the employment vulnerability indicator, we employ the MCA as developed by Asselin (2002) and used by Ki et al. (2005) and Kamgnia Dia et al. (2008).

Table A1 presents the explained inertia by the factor axes. From Table A1, it follows that the first factor axis that represents almost 29% of total inertia (quantity of information)[13] is the one that describes better employment quality of workers.

Table A1: Explained Inertia by the Factor Axis

	Principal Inertia	**Percentage**	**Cumulated percentage**
Factorial axis 1	0.57	28.5	28.5
Factorial axis 2	0.23	11.3	39.8
Total inertia	2.00		

Source: Constructed by author

Table A2 hosts the initial indicator variables/categories used for the construction of employment vulnerability (column 1). The scores of the initial indicators coded in 0 /1 obtained with the MCA and the contributions of the various categories are presented in Table A2. This table host the initial scores on the first axis as well as the squared correlations or squared cosines which represent the quality of representation of each initial indicator.

Table A2: Scores, Contributions and Squared Cosines of MCA on the Initial Indicators of Employment Quality

Variables/categories	Initial scores on the First axis	Squared correlations	Contributions	Numbers of observations	Percentage
Employment contract			**6.43**		
Open-ended (written)	2.147	0.292	4.59	1,302	11.43

[13] Note that the adjusted inertia approach, proposed by Benzecri (1979), to measure the quantity of information brought by an axis can only be used for an axis, α, with principal inertia (eigenvalue) $\lambda_\alpha \leq {}^{1}/_{K}$ (Nenadic and Greenacre, 2007 – p.7).

Fixed term (written)	1.223	0.047	0.79	749	6.58
Verbal agreement	-0.104	0.009	0.13	1,024	8.99
No contract	-0.346	0.249	0.92	8,316	73.01
Payslip			**15.77**		
Possess a payslip	2.573	0.907	12.75	2,752	24.16
No payslip	-0.619	0.907	3.02	8,639	75.84
Social security			**15.36**		
Affiliated to NSIF	2.653	0.881	12.60	2,548	22.37
Not affiliated to NSIF	-0.584	0.881	2.76	8,843	77.63
Job satisfaction			**7.36**		
Training matches job	1.216	0.425	4.86	4,503	39.53
Training does not match job	-0.615	0.425	2.50	6,888	60.47
Under-employment			**1.18**		
Less hours fixed by employer	1.226	0.012	0.26	224	1.97
Indifferent	0.102	0.034	0.13	9,607	84.34
Less hours due to economic situation	-0.708	0.007	0.13	305	2.68
Less hours due to health problems and domestic work	-0.779	0.044	0.66	1,255	11.02
Remuneration			**14.98**		
Fixed salary	1.697	0.336	4.86	2,378	20.88
Daily/hourly pay	3.115	0.406	6.57	1,080	9.48
Indifferent	-0.173	0.001	0.00	157	1.38
Piece rate	-0.290	0.008	0.13	319	2.80
Commissions/benefits	-0.677	0.678	3.29	7,324	64.30
In-kind and no payment	-0.606	0.007	0.13	133	1.17
Labour status			**8.8**		
Permanent regular	0.066	0.004	0.13	7,116	62.47
Permanent seasonal	2.967	0.389	6.30	1,106	9.71
Indifferent	-0.774	0.155	1.84	2,318	20.35
Temporary undefined/defined	-0.212	0.021	0.53	851	7.47
Housing allowance			**14.45**		
Receive housing allowance	2.834	0.828	12.22	2,171	19.06
Do not Receive housing allowance	-0.513	0.828	2.23	9,22	80.94
Paid leaves			**15.31**		
Perceive paid leaves	2.697	0.891	12.75	2,469	21.68
Do not perceive paid	-0.580	0. 891	2.56	8,922	78.32

leaves					
Union membership			**0.26**		
Member of a trade union/association	0.194	0.019	0.13	5,351	46.98
Not a member of a trade union/association	-0.169	0.019	0.13	6,04	53.02

Source: Constructed by author with help of STATA 10 using CHCS III

We normalise the indicator predicted from the first axis using:

$\widetilde{C_i} = (r\max(C) - C_i)/(r\max(C) - r\min(C))$[14]

The normalised indicator $\widetilde{C_i}$ classifies workers in terms of increasing employment vulnerability, with values ranging from 0 to 1.

[14] Note that $r$max and $r$min simply mean absolute maximum and minimum respectively.