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**IMPACTS OF THE GLOBAL ECONOMIC
CRISIS ON CHILD POVERTY IN
CAMEROON AND OPTIONS FOR A
POLICY RESPONSE**

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A UNICEF Research Project on
the Impact of the Global Economic Crisis on Children in Western and Central Africa

This study is the result of research promoted by the Regional Office of UNICEF for West and Central Africa, in collaboration with the UNICEF Innocenti Research Centre and the UNICEF Division of Policy and Practice and aimed at the assessment of the potential effects of the global economic crisis on children in Burkina Faso, Cameroon and Ghana and the proposal of concrete policy responses for consideration by policy makers.

One regional and three country teams of researchers were formed. The regional team, coordinated by the African office of the Poverty and Economic Policy (PEP) research network, based at the Consortium pour la recherche économique et sociale (CRES, Dakar), was composed of researchers from Africa (GREAT, Mali; University of Yaoundé, Cameroon), from the Université Laval in Canada and the UNICEF Innocenti Research Centre. The regional team developed the basic methodology, provided training and closely supervised the three country studies, and prepared a regional report and policy brief synthesizing the results for the three countries. The country teams led the country analyses, interacted with the local policy committees and wrote their respective country reports.

This research was initiated in June 2009. At the end of that month the regional team provided the methodology and held an intensive training workshop in Accra for the local teams. A visit to each country followed in August. In the following months the regional and country teams carried out the analyses and presented the preliminary results of the study during November and December at the WCARO Social Policy Network Meeting in Dakar, the ODI-UNICEF conference on "The global economic crisis – Including children in the policy response" in London, and the AERC conference on "Rethinking African Economic Policy in Light of the Global Economic and Financial Crisis" in Nairobi. In the following two months the regional and country studies were finalized, including also some additional policy responses specific to each country.

The main outcomes of this project are:

Cockburn, J., I. Fofana and L. Tiberti (2010), "Simulating the Impact of the Global Economic Crisis and Policy Responses on Children in West and Central Africa', *Innocenti Working Paper* No. 2010-01, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Bibi, S., J. Cockburn, I. Fofana and L. Tiberti (2010), "Impacts of the Global Crisis and Policy Responses on Child Well-Being: A Macro-Micro Simulation Framework", *Innocenti Working Paper* No. 2010-06, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Balma, L., J. Cockburn, I. Fofana, S. Kaboré and L. Tiberti (2010), "Simulation des effets de la crise économique et des politiques de réponse sur les enfants en Afrique de l'Ouest et du Centre: Le cas du Burkina Faso", *Innocenti Working Paper* No. 2010-03, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Bibi, S., J. Cockburn, C.A. Emini, I. Fofana, P. Ningaye and L. Tiberti (2010) "Incidences de la crise économique mondiale de 2008/09 et des options de politiques de réponse sur la pauvreté des enfants au Cameroun", *Innocenti Working Paper* No. 2010-04, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Antwi-Asare, T., J. Cockburn, E. F. A. Cooke, I. Fofana, L. Tiberti and D. K. Twerefou (2010) "Simulating the impact of the global economic crisis and policy responses on children in Ghana", *Innocenti Working Paper* No. 2010-05, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Bibi, S., J. Cockburn, M. Coulibaly and L. Tiberti (2009) "The Impact of the Increase in Food Prices on Child Poverty and the Policy Response in Mali" *Innocenti Working Paper* No. 2009-02, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence

Impacts of the global economic crisis on child poverty and options for a policy response in Cameroon

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Summary: This study aims to evaluate the potential impacts of the 2008/09 global economic crisis on child poverty in Cameroon. It also explores the potential effects that policy responses to such a crisis could have on children. In order to do this, the study uses a macro-micro methodology. A dynamic computable general equilibrium (CGE) model is used to simulate various scenarios of the economic crisis together with policies which respond to the crisis, taking into account the different transmission channels of the global crisis to the Cameroonian economy. The results of the CGE model are then used in a micro-econometric module in order to evaluate the impacts of the simulated shocks on households in general and children in particular.

Five dimensions of child poverty are examined: monetary poverty, caloric poverty, child school participation and child labour, and children's access to health care services.

The study shows that the crisis is projected to lower the real GDP growth rate by 1.3 percentage points in 2009, 0.9 in 2010 and 0.8 in 2011. The crisis would also bring about a 1.05% increase in the number of children who were poor in monetary terms in 2008 and a 4% increase in 2009, 2010 and 2011, compared to the situation without a crisis. With respect to this reference scenario, the crisis is simulated to increase the number of children who are poor in caloric terms by 0.56% in 2009, 1.08% in 2010 and 1.60% in 2011, and negatively affects, albeit lightly, both children's school participation rate and their access to health care services.

Four alternative policy responses to the crisis are simulated: a reduction in the VAT levied on the sale of food products; elimination of customs tariffs applied on imports of food products; free access to school canteens for children under the age of 15 in districts where monetary poverty is higher than the national average; and granting cash transfers to poor children. These policies, with a cost of 1%, 0.4%, 0.19% and 1% of Cameroon's before-crisis GDP respectively, are financed either by foreign aid or by draining the state's foreign reserves. Results from these simulations show that, in terms of poverty reduction, cash transfers appear to be the most effective of the four policy responses mentioned above, but this policy is the most ineffective at improving the real GDP growth rate. At the national level, the cash transfer policy completely counters the increase in monetary and caloric poverty engendered by the crisis over the entire period of the study. It even lowers these two types of poverty to less than the situation where the crisis did not occur. Moreover, these transfers have beneficial, although small, effects on children's school and labour participation rates. Furthermore, beside the cash transfer policy, the subsidy for school canteens has a relatively low cost but carries fairly considerable benefits in response to the crisis, especially in alleviating caloric poverty; while the other two policies are quite ineffective, regardless of which dimension of poverty is considered.

Keywords: global economic crisis, child poverty, hunger, education, child labour, health, West and Central Africa, Cameroon, social protection.

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Contents

1   INTRODUCTION

The international financial crisis, which started in the summer of 2007 with the *subprime* crisis in the United States, developed into a world economic crisis by 2008. Indeed, most industrialized countries entered recession in 2008, leading to global slowdown in economic activity. The IMF's forecasts in 2009 (IMF 2009a) already predicted a lower growth rate of world production, falling from 3.25% in 2008 to -1.25% in 2009, before returning to positive territory in 2010 at 2.00%, thanks to fiscal stimuli and various relief measures for the financial sector, applied throughout the world and particularly in advanced economies.

Despite the economic recovery announced starting in 2010, it is feared that the crisis has led to increased poverty, particularly in developing countries (World Bank 2009a; UNDP 2009). World Bank (2009b) estimates suggest that the 2008/09 crisis could increase the number of poor living on less than 1.25 US PPP dollars per day by 46 million and those living on less than 2 US PPP dollars per day by 53 million.

Children are among the most vulnerable groups in situations of economic crisis, as shown by Harper et al. (2009) with, among others, worsening child morbidity and mortality and increasing malnutrition, school dropouts and child participation in labour.[1] The study by Pongou et al. (2006), for example, shows that after the economic crisis in Cameroon in the 1990s and the drastic structural adjustments that followed, the prevalence of child malnutrition (measured by underweight) increased from 16 to 23% nationwide and from 19 to 25% in rural areas.

The goal of the present study is therefore twofold. Firstly, it proposes to use a quantitative approach to simulate the effects of the international economic crisis on child poverty in Cameroon. Child poverty must be understood in the multidimensional sense and is thus considered in terms of monetary poverty, hunger, education, child labour and access to health care services. Secondly, the study analyzes several policies that the Cameroonian government could adopt to respond to this crisis in order to protect children.

The remainder of this paper is divided into six sections. In section 2, a summary of the main channels of transmission of the global financial crisis to developing economies, and particularly Cameroon, is provided. Section 3 lays out the methodological approach of the study, and section 4 shows the structure and evolution of the economy in the reference scenario; the results of the crisis scenario are presented in section 5. The analysis of the impacts of the various policy responses is found in section 6, and section 7 contains the conclusion of the study.

2. PRINCIPAL TRANSMISSION CHANNELS OF THE GLOBAL ECONOMIC CRISIS TO DEVELOPING ECONOMIES

In the literature, four principal channels are identified as being those via which the global economic crisis is expected to affect developing economies. These are: international trade,

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[1] Bibi et al. (2009).

foreign investment, private international remittances and official foreign development assistance (te Velde 2008; Barrel et al. 2009). The ability of each channel to transmit the effects of the crisis is potentially different from one country to another, depending on the structure of the economy and the development conditions in each country, as well as the nature and strength of the links between these countries and the global economy.

2.1. The channel of prices and volumes of international trade

The slowdown of economic activity due to the economic crisis has largely been felt in terms of trade, with a drastic fall in world prices for goods and lower volumes of imports and exports on a world scale.

For certain commodities such as metals, the fall in world prices started in March 2008, but it was especially felt in the second half of 2008. From July to December 2008, the price index for all commodities traded on world markets declined continuously, going from 219 to 98 (2005 = 100) and amounting to a total fall of 55% over five months, a rate of -15% per month according to the calculations carried out with IMF statistics (figure 1). This index then remained relatively stable at about 100 over three months, from December 2008 to February 2009, before returning to an upward trend in March 2009 to reach 138 in December 2009.

The decline in world prices of petroleum and fuels is stronger on average than for other products. From July to December 2008, the world price index for petroleum products (2005 = 100) moved at a monthly average growth rate of -21% and an overall growth rate of -69% over five months, falling from 248 to 78. In other words, the price of petroleum was divided by three over five months. From February to December 2009, this price index gradually increased from 78 to 140.

Non-fuel product prices also fell sharply over the second half of 2008, although at a somewhat slower rate than the collapse of petroleum prices. The world price index of non-fuel products (2005 = 100) went from 169 to 109 from July to December 2008; a continuous decline of about 10% per month and a total fall of nearly 36% over five months. Since the beginning of the second quarter of 2009, this index took a new upward trend, gradually going from 109 in March 2009 to 139 in December of the same year.

Figure 1: Monthly change in commodity price indices from June 2005 to December 2009
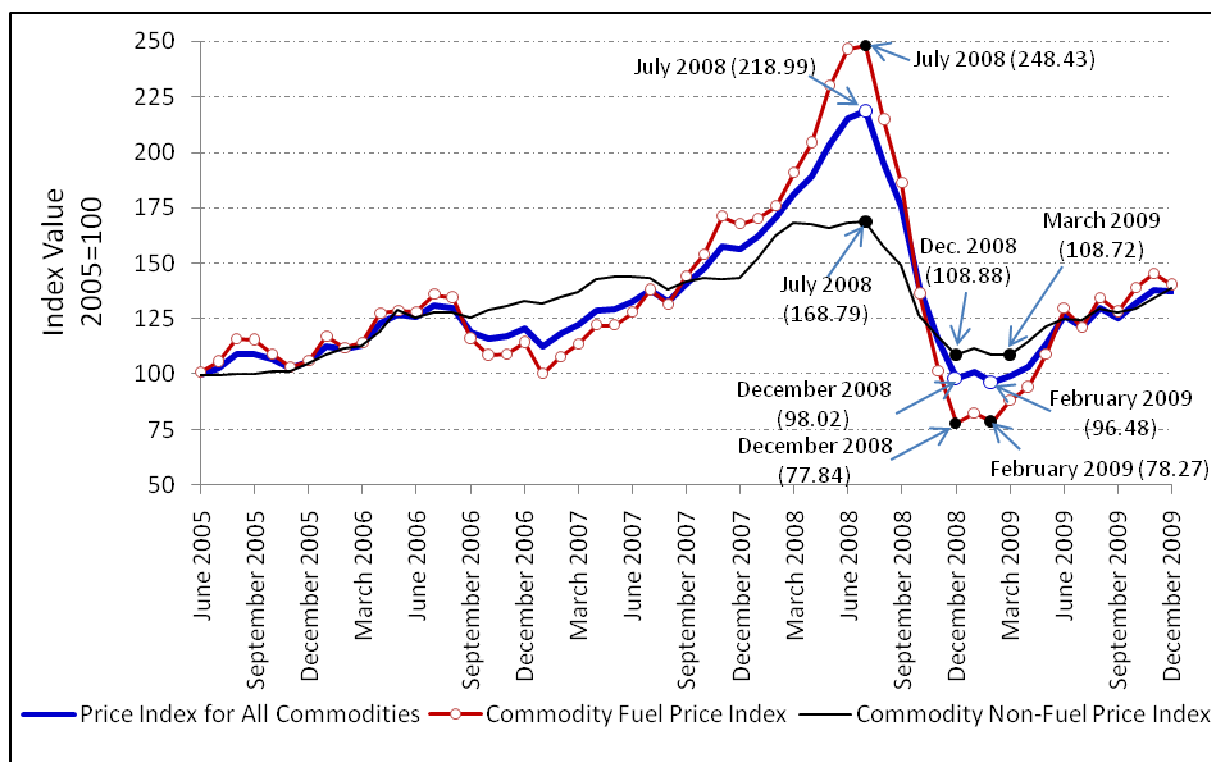
Source: IMF (2010a).

Note: The graphs of the change in world prices for other products or commodity groups are presented in the annex.

The breakdown of the volumes of international trade is another manifestation of the crisis, and is an aggravating factor which transmits the economic crisis at the global scale. The slowdown of the growth of the trade volumes could already be observed in 2007, with an annual growth rate of 7.2% for total world trade transactions in goods and services, less than the 9.2% growth rate recorded in 2006 (figure 2).

This reduction in the growth rate is more obvious in 2008 (the world growth rate declined by 4.4 percentage points compared to 2007), turning to an outright decline in 2009, with a negative growth rate of -12.3%, according to IMF forecasts (IMF 2010a). This decline corresponds to reduced export volumes of -12.5% and -11.7%, respectively for advanced economies, and emerging and developing economies, in 2009. The growth rate of world trade volumes could become positive in 2010 according to these same projections, to reach 5.8%, 5.9% and 5.4% in 2010 and 6.3%, 5.6% and 7.8% in 2011, respectively for the total volume of world trade, exports for advanced economies and exports for emerging and developing economies.

As mentioned above, the impact on national economies of these changes in prices and volumes of goods traded at the international level differs from one country to another according to the size and the structure of trade openness to international trade transactions.

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Figure 2: Growth rate of international trade volumes from 2006 to 2011
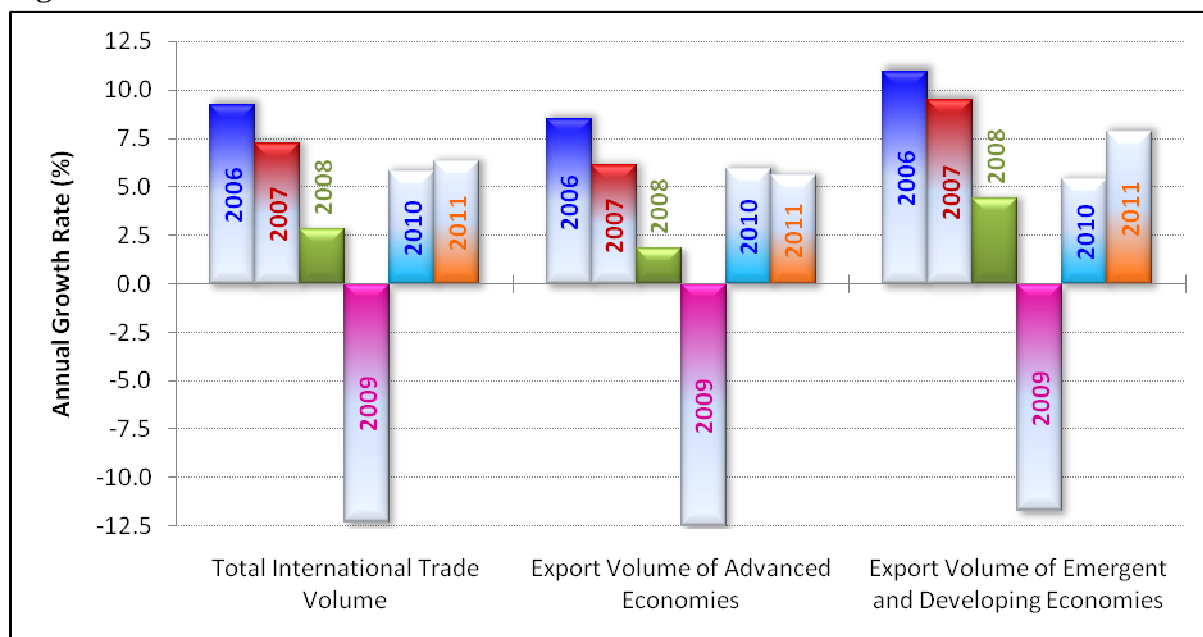
While Cameroon is relatively less open to world trade in comparison with the average for either sub-Saharan African countries, lower-middle income countries, or the world average, the structure of its international trade is such that its economy is one of the most potentially vulnerable to fluctuations in world prices or world supply and demand which have been induced by the crisis.[2]

Cameroonian exports are not very diversified. Overall, more than 80% of Cameroon's export receipts come from five of 42 products in the country's Supply and Use Table (SUT). As shown in figure 3 and in table 1, these exports are mostly dominated by crude oil (which represented 41.74% of exports receipts alone in 2007), sawn wood (15.81%), refined oil (12.29%), base metals (5.39%) and transport, storage and communication services (5.20%). Most of the remaining exports include industrial agriculture export products (cocoa, coffee, cotton and bananas) which represented 4.81% of the total in 2007, business services (3.47%), rubber (2.21%), raw wood (2.18%) and agricultural food products (1.37%).

World prices of these products saw a strong decline due to the crisis, starting with prices of petroleum products. The average price of sawn hardwood fell by 23% from June 2008 to August 2009, by 2% for sawn softwood from November 2008 to October 2009, by 19% for hardwood logs from December 2008 to December 2009, and by 25% for softwood logs from October 2008 to October 2009. The price index for base metals fell by 53% from March 2008 to February 2009, those of primary agricultural products (including coffee, cocoa, cotton, etc.) fell by 33% from July 2008 to March 2009, and that of rubber fell by 61% from June to December 2008.[3]

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[2] According to data from the *World Development Indicators database* (World Bank, accessed September 2009), Cameroonian exports and imports were respectively 29% and 28% of its GDP in 2008. In the same year, these figures were respectively 33% and 32% on average for low income counties (which includes Cameroon) and 37% and 40% for countries in sub-Saharan Africa.

[3] Calculations made using IMF data (IMF 2010a).

These drastic declines in the prices of Cameroon's main export products and the reduction in export volumes due to the downturn in world demand, all imply a strong reduction in the country's export receipts during the crisis period. If we also consider the high export orientation rate for most of these products (table 1), it appears that a decline in the export performance of these products would necessarily result in a fall in national production and a consequent impact on GDP.

Table 1: Structure of Cameroon's exports and imports in 2007

	Exportations		Importations	
Product	Share of total exports	Export intensity rate	Share of total imports	Import penetration rate
PRIMARY SECTOR	*8.38*	*5.89*	*0.47*	*0.32*
Foodstuffs agriculture	*1.37*	*1.72*	*0.37*	*0.42*
Industrial and export-based agriculture	**4.81**	**37.24**	*0.00*	*0.05*
Livestock and hunting	*0.02*	*0.09*	*0.00*	*0.02*
Forestry and logging	**2.18**	**9.50**	*0.10*	*0.41*
Fisheries and aquaculture	*0.00*	*0.00*	*0.00*	*0.01*
SECONDARY SECTOR	*80.98*	*22.94*	*88.57*	*22.77*
Hydrocarbons	**41.74**	**94.27**	**26.48**	**90.42**
Other mining products	*0.01*	*0.33*	**1.93**	**51.18**
Meat and fish	*0.23*	*0.97*	**2.20**	*7.80*
Grains and starch products	*0.00*	*0.00*	**4.80**	**22.85**
Cocoa, coffee, tea and processed sugar	*0.89*	*8.80*	**1.07**	**9.52**
Oilseeds and animal feed	*0.02*	*0.33*	*0.50*	*6.02*
Grain based products	*0.02*	*0.20*	*0.16*	*1.78*
Milk, fruit or vegetable based products	*0.34*	*8.55*	**1.92**	**32.14**
Drinks	*0.31*	*2.95*	**1.46**	**11.56**
Tobacco	*0.04*	*6.53*	**0.38**	**39.68**
Textiles and clothing	*0.49*	*1.22*	**2.73**	*5.94*
Leather and footwear	*0.00*	*0.00*	**0.16**	**9.50**
Wood industries other than furniture	**15.81**	**41.88**	*0.03*	*0.12*
Paper and paper products	*0.02*	*0.27*	**2.37**	**23.11**
Refined petroleum, coking products	**12.29**	**47.65**	**1.82**	**10.87**
Chemical products	*0.37*	*3.10*	**9.91**	**43.58**
Rubber and plastic products	**2.21**	**21.61**	**1.02**	**10.36**
Non metal mineral products	**0.61**	**13.87**	**1.70**	**28.79**
Base metals	**5.39**	**45.39**	**7.58**	**51.41**
Electrical machinery	*0.09*	*1.60*	**12.94**	**66.96**
Audio-visual equipment	*0.03*	*0.79*	**1.30**	**22.93**
Transport equipment	*0.05*	*1.16*	**5.65**	**56.42**
Furniture, products from various industries	*0.02*	*0.17*	*0.43*	*2.66*
Construction	*0.00*	*0.00*	*0.02*	*0.04*
TERTIARY SECTOR	*10.64*	*3.96*	*10.96*	*3.70*
Restaurants and hotels	*0.46*	*1.75*	*0.47*	*1.63*
Transport, storage and communication	**5.20**	**13.78**	**3.88**	**9.74**
Mail and telecommunications	*0.23*	*2.43*	*0.27*	*2.56*
Financial services	**1.28**	**23.52**	**1.80**	**28.10**
Business services	**3.47**	**34.41**	**4.54**	**38.38**
TOTAL	*100.00*	*13.09*	*100.00*	*12.00*

Source: Authors' calculations from the 2007 Supply and Use Table (INS 2009).

Figure 3: The five largest import and export products in Cameroon in 2007
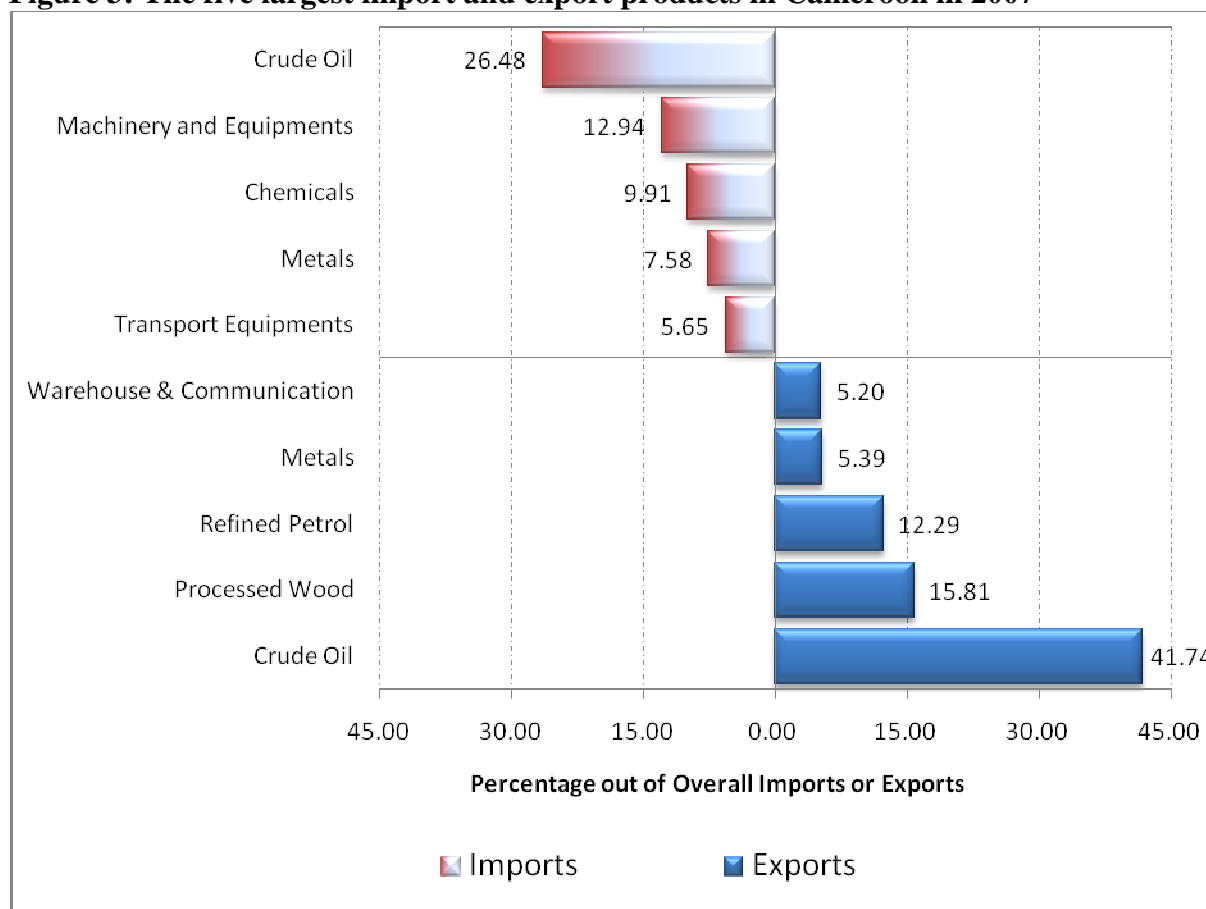
Source: Developed by the authors using 2007 Supply and Use Table for Cameroon from INS (2009).

The fall in world prices during the crisis also affects imports, leading to lower costs for inputs and imported final consumption goods. The main products imported by Cameroon (figure 3 and table 1) have very high import penetration rates. For Cameroon, this would mean greater supply of goods and services not produced domestically, rather than a fierce competition with close domestic substitutes. The simulation of the crisis carried out in this study notably makes it possible to determine the net effect of the shock on external trade.

Changes in world prices of products exported by and imported into Cameroon are given in an annex, following the categorization adopted by the national accounts, and using estimates of world prices as collected by IMF (2010a).

2.2. The channel of capital flows and foreign investment

Capital flows in general and foreign direct investments in particular have suffered a considerable drop across the world during the crisis. According to a cross referencing of information from an IMF database, UNCTAD[4] and the Columbia FDI Perspectives, the total amount of foreign direct investments (FDI) in the world declined by 17% in 2008 relative to 2007. In 2009, there was a further 44% annual reduction in this figure (table 2).

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[4] UNCTAD: United Nations Conference on Trade and Development.

The adverse effects of the crisis on investment were more severe in developed economies, especially in North America and Western Europe. They recorded an overall decline in FDI inflows of 33% in 2008 and of 52% in 2009. As shown in table 2, this strong slump in FDI inflows in developed countries in 2009 was such that these countries' share of the global total of FDI became in 2009 less than the share belonging to the rest of the world, for the first time ever.

Emerging and developing economies were relatively resilient in 2008 with an FDI growth rate of 11%, down from 2007 (33%) but still positive. However, this rate fell brutally to become strongly negative in 2009 (-35%). In 2009, the decline in FDI inflows were relatively highest in Eastern Europe (-51%) and Sub-Saharan Africa (-39%). The decline was 33% in Latin America and the Caribbean, 27% in Developing Asia and 25% in the Middle East and North Africa.

Table 2: Change in FDI inflows in the world from 2007 to 2009 *(by region of destination; values in billions of US dollars)*

	2007		2008		2009*(e)*	
	Value	*Annual change (%)*	Value	*Annual change (%)*	Value	*Annual change (%)*
World total	2092.4	*44.8*	1730.9	*−17.3*	975.2	*−43.7*
Developed economies	1355.0	*52.3*	914.7	*−32.5*	441.3	*−51.8*
Emerging and developing economies	737.4	*32.9*	816.3	*10.7*	533.9	*−34.6*
including:						
sub-Saharan Africa	38.0	*14.2*	49.7	*30.7*	30.3	*−39.1*
Middle East and North Africa	81.9	*13.6*	98.1	*19.8*	73.4	*−25.2*
Developing Asia	298.1	*38.9*	323.2	*8.4*	235.5	*−27.1*
Latin America and the Caribbean	128.1	*37.1*	140.5	*9.7*	93.8	*−33.3*
Eastern Europe	165.7	*40.8*	183.3	*10.7*	90.4	*−50.7*
Note: share in world total foreign direct investment (%)						
	2007		2008		2009	
Developed economies	64.8		52.8		45.3	
Emerging and developing economies	35.2		47.2		54.7	

Source: IMF; UNCTAD; *Economist Intelligence Unit forecast for 2009*. Information compiled by Kekic (2009).

Note: *(e)* Estimations.

For Cameroon, as per an IMF report (2009c), foreign financing of certain large projects planned for 2009 was postponed, particularly in the energy, aluminium and mining sectors. This report estimates that total foreign capital flows to Cameroon would be 86 billion CFA francs lower in 2009 than in 2008, an amount equal to 0.8% of GDP.

But this estimate was highly optimistic compared to the forecasts by the Ministry of the Economy, Planning and Regional Development (MINEPAT 2009), which indicated that total foreign capital flows would fall by 167 billion CFA francs in 2009, which is equal to 1.6% of GDP and amounts to a 40% decline from 2008 (figure 4 and table 3). However, despite the

aforementioned postponement of financing for large projects, FDI flows remained stable in 2009. In contrast, it was other capital flows (private sector bank and non-bank loans) that led to the collapse of total flows, which declined by 52% in 2009 with respect to 2008. The MINEPAT (2009) forecast does not foresee that the crisis will have negative impacts on capital flows to the public sector, but exhibits a significant decrease (10%) of foreign capital going into the non-bank private sector in 2009 and also shows that portfolio flows in the banking sector went from 95 billion CFA francs in 2008 to -79 billion in 2009, reflecting a significant repatriation of funds with unfavourable effects on the national economy.

Figure 4: Projected net foreign capital inflows in Cameroon from 2008 to 2012
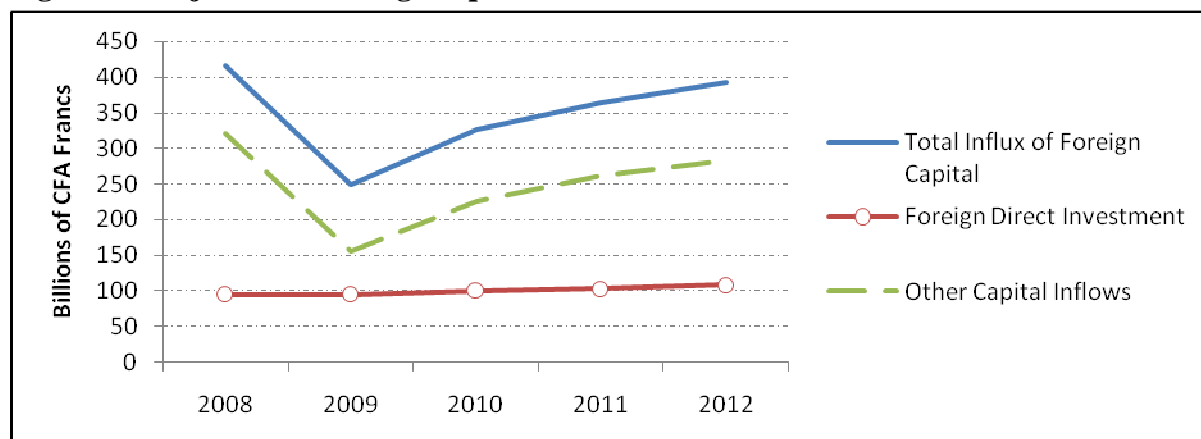
Source: Ministry of the Economy, Planning, and Regional Development (MINEPAT/DGEPIP/DAPE). Macroeconomic Forecasting Framework of the financial accounts.

Table 3: Total foreign capital flows to Cameroon as a percentage of GDP

	2008	2009	2010	2011	2012
Total foreign investment	**4.0**	**2.4**	**2.8**	**2.8**	**2.6**
Foreign Direct Investment	0.9	0.9	0.9	0.8	0.7
Other net investments	3.1	1.5	1.9	2.0	1.9

Source: MINEPAT (2009).

2.3. The channel of international remittances

Remittances from migrant workers to their country of origin are an important source of income for many developing countries. The World Bank database dedicated to these flows shows that, as of 2007, more than three quarters of international remittances are destined for developing countries (table 4). In 2007, remittances accounted for an average of 2.02% of developing countries' GDP, as opposed to 0.24% in high income countries and 0.71% for the entire world (Figure 5). In 2008, this ratio was greater than or equal to 5% in nearly 50 countries across the world. For example, it was as high as 24% for Guyana, 27% for Lesotho, 38% in Tonga and 50% in Tajikistan.

Figure 5: Private remittances received from abroad as a percentage of GDP (2007)
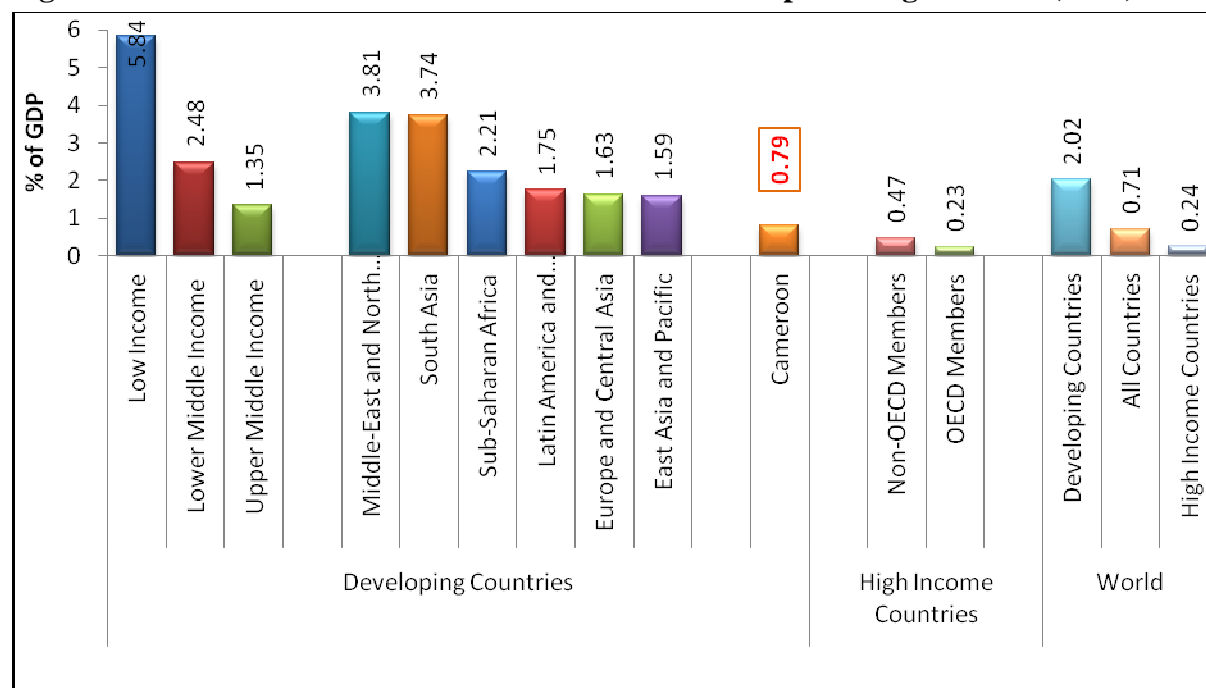
Source: World Bank (2009d); Ratha, Mohapatra and Silwal (2009).

This means that a substantial deterioration in these flows would hit income severely in most recipient countries. The World Bank estimates show precisely that global remittance flows declined during the crisis, being 5.3% lower in 2009 than in 2008. However, the revival projected for 2010 and 2011 appears rather weak (growth of 1.2% and 3.7%, respectively) when compared to the strong trend observed in the decade before the crisis (table 4).

For developing countries as a whole, the decline in the flow of funds received is 6.1%. In the group, the most prominent declines are recorded for the subgroups of countries in Europe and Central Asia (−14.7%), Latin America and the Caribbean (−9.6%) and the Middle East and North Africa (−7.2%). As for the flow of funds to sub-Saharan Africa, they decline by 2.9%.

Cameroon is among 15 African countries and 6 lower-middle income countries (among 55) whose remittances received are smallest as a percentage of GDP, based on 2008 data (World Bank 2009c). This ratio was 0.79% in 2007 and 0.72% in 2008 and remains very modest in comparison with the average in many subgroups of comparable developing countries (figure 5).

According to World Bank estimates (World Bank 2009d), flows of migrant remittances to Cameroon were 3.4% lower in 2009 than in 2008. Projections by the Ministry of Economy, however, are more prudent or even pessimistic. The macroeconomic forecasting framework they used shows that total remittance inflows saw a net decline on a year base of 25% in 2009 and a further fall of 39% in 2010, before returning to a 70% increase in 2011 (MINEPAT 2009).

Despite the relatively low level of these flows for Cameroon as a share of GDP, such a decline in 2009 and 2010 could nevertheless constitute an important shock for families receiving these funds.

Table 4: Change in inflows of international remittances from 2006 to 2011

	2006	2007	2008	2009e	2010p	2011p
	Annual growth rate (%)					
World total	15.3	21.3	15.3	−5.3	1.2	3.7
Developing countries	18.3	22.9	16.7	−6.1	1.4	3.9
of which:						
Europe and Central Asia	24.1	36.0	13.8	−14.7	2.7	5.0
Latin America and the Caribbean	18.1	6.8	2.3	−9.6	0.5	3.5
Middle East and North Africa	4.6	20.1	10.6	−7.2	1.5	3.3
Sub-Saharan Africa	34.7	47.6	13.4	−2.9	1.8	3.9
South Asia	25.3	27.1	35.6	−1.8	1.7	4.1
East Asia and the Pacific	14.1	23.8	20.8	−1.5	0.8	3.7
Low income countries	23.9	23.4	28.3	0.7	2.6	4.6
Middle income countries	17.8	22.9	15.6	−6.8	1.2	3.8
	Memorandum items: Share of world total (%)					
Developing countries	74.2	75.2	76.2	75.5	75.7	75.8
of which:						
East Asia and the Pacific	18.2	18.5	19.4	20.2	20.1	20.1
South Asia	13.4	14.0	16.5	17.1	17.2	17.3
Latin America and the Caribbean	18.7	16.4	14.6	13.9	13.8	13.8
Europe and Central Asia	11.8	13.2	13.0	11.7	11.9	12.1
Middle East and North Africa	8.2	8.2	7.8	7.7	7.7	7.7
Sub-Saharan Africa	4.0	4.8	4.8	4.9	4.9	4.9
Low income countries	6.3	6.4	7.1	7.6	7.7	7.7
Middle income countries	67.9	68.8	69.0	67.9	68.0	68.1
	Note: values in billions of US dollars					
World total	317.3	384.8	443.5	420.1	425.0	441.0

Source: World Bank (2009d). Ratha, Mohapatra and Silwal (2009).

Note: *e* = estimations; p = projections.

2.4. The channel of official development assistance

In 2008, when the effects of the crisis on the real economy across the world were becoming apparent, total net flows of official development assistance (ODA) from member countries of the OECD's Development Assistance Committee (DAC) grew by 11.7% in real terms with respect to 2007, to US $121.483 billion, the highest figure ever (OECD 2010).[5]

However, some authors, such as te Velde (2008), question whether the world financial and economic crisis may lead to a contraction of ODA. The principal ODA donor countries, already struggling with debt problems and/or fragile budgetary positions, have been increasingly solicited to finance recovery plans and to inject liquidity into distressed banks since the beginning of the crisis, with the goal of restoring stability to their financial systems and to stimulate their own troubled economies. In such a circumstance of slower growth in

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[5] In 2008, ODA support provided by DAC members was 93% of total ODA.

2008 and projected economic downturn in 2009, including in donor countries, lower volumes of ODA might be expected.

A contraction in ODA would have direct and immediate adverse effects on public finances in recipient countries, and therefore on investments in public infrastructure, education, health care, housing and access to natural resources in these countries, given the variety of areas of intervention targeted with this aid.

However, on the basis of the commitments of DAC member donors, continuing the upward trend of ODA is not entirely out of the question for 2009 and 2010. Indeed, following an appeal by the Secretary General of the OECD and the President of the DAC on October 28, 2008, the donors of the committee signed a "Declaration on aid policy" proposed by the OECD and reaffirmed commitments relating to aid taken at Gleneagles and elsewhere, agreeing to maintain their support at levels consistent with previous commitments despite the crisis.

In the case of Cameroon, as mentioned above, the data from the financial accounts of the macroeconomic forecasting framework produced by MINEPAT (2009) does not suggest a decline in the amount of subsidized loans drawn in the public sector in 2009. However, the forecasts for the balance of payments by MINEPAT (2009) show that non-counterparty current transfers received by the public sector, one form of ODA, would grow by 19% in 2009, but then would fall by 17% in 2010 and 12% in 2011. This is not so much a result of the crisis as it is an indication of a shift towards promoting project-aid rather than budget support aid.

3. METHODOLOGICAL APPROACH

This section includes a general overview of the methodological approach, as well as the specifics of the approach in terms of modelling the macro-micro links and the transmission channels of the global crises to a national economy.[6]

3.1. General principle of the analysis

The methodological approach brings together a dynamic computable general equilibrium (CGE) model and a microeconometric behaviour module. The CGE model is used to simulate the various scenarios of the economic crisis and policies responding to the crisis, taking into account the various transmission channels of the world crisis to the Cameroonian economy. This model includes a specification of the structure of production, segmentation of the labour market, and transactions and behaviour of various categories of agents who interact in the economy.

The results of the simulations produced by the CGE model – most importantly the changes in prices, variations in households' consumption and income – are then passed on to the micro-econometric module to evaluate the potential impacts of the shocks and the policy responses on households in general and on children in particular.

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[6] For more details, see Bibi et al. (2010) and Cockburn et al. (2010).

3.2. The dimensions considered for the analysis of child poverty

3.2.1. Monetary poverty among children

A child is considered to be monetarily poor if s/he belongs to a household which is poor in monetary terms. We have defined a household as being poor if its consumption per adult equivalent,[7] deflated by appropriate temporal and spatial price indices, is under the official absolute poverty line.[8] In order to measure and analyze monetary poverty among children, we use a Foster Greer and Thorbecke (1984) poverty index applied to the group of children from 0 to 14 years of age. In the present study, the poverty headcount ratio (FGT0) therefore measures the percentage of monetarily poor children in this age group.

3.2.2. Caloric poverty among children

The analysis of caloric poverty among children focuses on the nature of food needed to satisfy their caloric needs. A child is in a state of caloric poverty if his/her caloric adequacy ratio is less than the caloric adequacy threshold, which corresponds to a nutritional intake of 2450 kcal per day. The rate of caloric poverty is obtained from the FGT0 index where caloric adequacy ratio is used as the welfare aggregate, while the caloric adequacy threshold is used as the caloric poverty line.

3.2.3. School and labour participation rates among children

This amounts to measuring the effects of variation in children's real consumption (variation due to the crisis and implementation of policy responses) on the probability that a child is in one of the four following situations: (1) goes to school and does not work; (2) goes to school and works; (3) does not go to school and works; (4) does not go to school and does not work. The first and second categories together give the total number of children attending school, while the second and third categories together are the total number of children working.

In this study, children are considered as workers if they do at least 28 hours a week of domestic work or at least 1 hour a week of economic work (or, at least 14 hours a week of this second type of labour for children aged 12 or more), even if they are still attending school.[9]

The impacts on children's school and labour participation are determined using bivariate probit regressions carried out in the microsimulation module.

3.2.4. Children's access to health care services

The variables of analysis for children's access to health care services are the rate at which sick children consult health facilities and, in the case of consultation, the type of health facilities consulted.

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[7] Equivalence scales were used to account for caloric needs by age and sex.
[8] See INS (2008a) for regional poverty lines.
[9] This is the definition of child labour reported by www.childinfo.org; for further information see the child protection sub-section included there.

The study distinguishes between four types of health facilities, classed in decreasing order of the quality of medical care they deliver:

- First class hospitals and provincial hospitals;
- District hospitals, district medical centres, integrated health centres; House visits by a doctor or health worker;
- Consultations in a pharmacy, in a medical office, at a school hospital, at the workplace, with common interest groups (CIG) and health NGOs;
- Traditional healers, informal vendors of modern medication.

The evaluation of the impacts of sick children's access to health care services is done using probit multinomial and logit regressions for global and specific consultations respectively. These show whether variation in real household consumption has effects on the probability that children seek care when they fall ill and, in the case of consultation, if the variations in household consumption lead households to demand a different quality of care for their children.

3.3. Modelling the transmission channels of the global crisis

Of the four principal transmission channels identified, only trade and foreign direct investment require specific modelling; foreign aid and net foreign remittances received by households were modelled using standard CGE procedures, i.e., as simple exogenous variables. Activation of these two channels therefore consists of simulating the variations observed or estimated for said international transfers.

3.3.1. Trade

In the literature, some studies (for example, Griffith-Jones and Ocampo 2009) emphasize that exporters of manufactured goods and services are most likely to face lower demand for exports in addition to the decline in world prices, while exporters of primary materials, agricultural products, and mineral and energy resources would mostly just be affected by lower international prices. For the first group, we can speak of exports constrained by external demand (type 1), while the second group represents exports largely constrained by internal supply (type 2).

To model this state of affairs for type 1 exports, we introduced a foreign export demand function with finite elasticity, which implies that the market power and notably the quantity of local products exported on the international market largely flows from demand conditions abroad. The variation in export demand in relation to its initial level is therefore conditioned by the ratio of the world prices for these exported products and their free on board (FOB) export prices, as well as the elasticity of export demand among foreign trade partners.

However, for exported goods which are largely constrained by supply, we use the classical assumption that exporters face infinite elasticity of export demand. As such, their FOB prices are equal to exogenous world prices.

Two types of simulations can be carried out for exports in the first group: an exogenous variation (a reduction in this case) of export volumes based on the available information and a variation in world prices according to the estimate of the change in prices. For type 2 exports, only the simulation of the change in world prices can be introduced as an exogenous shock due to the crisis.

Accounting for the channel of world import prices does not require any special modelling. The shock is simply transmitted by simulating observed or estimated variation in the world prices of the imports in question.

3.3.2. Foreign direct investment (FDI)

FDI is modelled as a part of total investment, but also, implicitly, as part of the current account balance. Of course, FDI and other international capital transactions are registered in the capital account (Capital balance) of the Balance of Payments and not directly in the Current balance. But, given that the shortfall of this figure corresponds with the excess from the capital balance (i.e., savings available from abroad to finance the economy including FDI), we can then model foreign direct investment as an exogenous component of the current account balance, *mutatis mutandis*.

3.4. Modelling macro-micro links

Essama-Nssah et al. (2007) identify three types of effects that need to be passed between the macroeconomic module and the microeconomic module in the context of a macro-micro analysis: price effects (price changes of production factors and of goods and services); reallocation effects (changes in the use of factors) and factor endowment effects (changes in the availability of factors).

The macro-micro analytical framework used in this study is a "top-down" sequential approach following Robillard, Bourguignon and Robinson (2008). As such, it only focuses on price effects and reallocation effects. The study does not include factor endowment effects due to its short time horizon.

The links between the macro and micro modules include product price variation, wage rates, the employment rate for various categories of work and changes in other income. These elements are determined by simulations using the CGE model and are then used as inputs for the micro module.

3.5. The study period

The study period goes from 2007 to 2011, both years inclusively, and 2007 is the base year for the empirical data in the study. The 2008-2011 sub-period includes the years where the effects of the crisis are actually simulated.

The base year directly precedes this sub-period and is therefore an appropriate basis for economic projections in the absence of a crisis; these projections are necessary in order to carry out the constructed analysis of the crisis and the policy responses.

In the sub-period, 2008 is the year in which the first obvious manifestations of the world economic crisis are felt and 2009 is the year during which, according to numerous concordant analyses, the effects of the crisis are the most drastic across the world. The year 2010 is presented as the year of gradual recovery. We include 2011 in the analysis to foresee the extent to which this recovery will be reinforced.

3.6. The simulated scenarios

Six scenarios were simulated in the present study, including a baseline reference scenario of the economic trend (also called *business as usual* – BaU), another representing the economic crisis, and the remaining four as scenarios of the policy responses to the crisis.

The choice of policy responses has been guided by the desire to find measures with beneficial effects on children which are as immediate and direct as possible; hence the priority given to policies which can improve children's food consumption in the short term, or more generally, the purchasing power of households with poor children. Indeed, since the precarious situation that many children could find themselves in due to the crisis carries a certain urgency, much as 0in the case of some catastrophes, the research objective of the present study is thus not so much the recovery of the economy *per se*, but especially to know which socioeconomic policy would provide a short term safety net for children in the face of the crisis.

3.6.1. The reference scenario or the "no crisis" scenario

The assessment of the impacts of the economic crisis and policy responses on the various performance indicators is done using an analysis of both the direction and magnitude of the changes or discrepancies of these indicators from their respective values in the reference situation.

The reference scenario is intended to represent the prospective trend that the economy would have followed in the "business as usual" (BAU) case, that is, the case where the economy continued to evolve according to historical or predetermined trends of its fundamental variables, without the occurrence of the crisis and without implementation of the subsequent policy responses to the crisis.

The variables used in this study to monitor, assess and establish the economic trend in the reference scenario include the real GDP growth rate, growth rates of population and employment, of exports volumes, the rate of monetary poverty, the ratio of investments with respect to GDP and the fiscal balance of the state.

3.6.2. The economic crisis scenario

This scenario includes the various shocks experienced by the economy due to the economic crisis via the six main variables through which the world crisis is transmitted to the Cameroonian economy: the world price of Cameroonian exports, the world price of Cameroonian imports, the volume of exports from Cameroon, as well as inflows of remittances, official development assistance and foreign direct investment. For reference, the related shocks for each of these variables are presented in table 5.

Table 5: Growth rates of transmission variables of the crisis to the Cameroonian economy, relative to their values in the reference scenario *(in % points)*

Variables	2008	2009	2010	2011
World export prices	−24.5	−12.1	8.7	7.1
World import prices	−22.5	−8.3	9.5	7.6
Export volumes	−1.2	−4.9	−1.2	−1.6
Private remittances received from abroad	0.0	−25.3	−39.2	69.9
Official development aid flows	0.0	0.0	0.0	0.0
Foreign direct investment flows	−5.9	−5.9	−0.6	−3.1

Source: Authors' calculations from IMF data (2010a) for world import and export prices; *a posteriori* estimations via the CGE model for export volumes; MINEPAT (2009) for private remittances and flows of official development assistance and foreign direct investment.

3.6.3. The crisis scenario + VAT subsidy for food products

This scenario includes a subsidy which consists of reducing the VAT levied on the sale of food products with a total value equivalent to 1% of Cameroon's before-crisis GDP. To avoid negative effects on public finances, we make the assumption that the loss of tax receipts caused by this subsidy are entirely compensated for by external development aid given to the government. We also suppose that all measures accompanying the policy would allow the VAT reduction to be passed on to retail prices for all relevant food products.

3.6.4. The crisis scenario + elimination of customs tariffs levied on food imports

It is assumed that poor children would be among the beneficiaries of lower prices for imported food products, supposing, as in the case of the VAT subsidy, that the benefits of removing customs tariffs would be passed down the distribution chain with an equivalent decline in prices. The loss of customs receipts resulting from this measure is estimated at 0.4% of GDP and is offset by drawing on the government's foreign reserves.

3.6.5. The crisis scenario + school canteen subsidy

This policy offers free access to school canteens for all school going children if they live in a district where the level of monetary poverty among children is greater than the national average (50.2%). A criterion of geographic targeting is thus used to identify the most vulnerable children. The programme has a cost of 0.19% of GDP and is financed in the short term by external aid. Meals provided at school include rice (150g), vegetables (30g) and vegetable oil (10g), providing 400 kilocalories per meal served. This is a typical meal given by the World Food Programme.

3.6.6. The crisis scenario + cash transfers to households with poor children

In this scenario, foreign aid equal to 1% of Cameroon's before-crisis GDP is given to the government and is entirely distributed as a cash transfer from the state to household whose children are predicted to be poor. The prediction of the state of poverty for children is estimated using a *proxy means* approach with a quintile-based regression model, which estimates consumption on a limited number of easily observable socio-demographic characteristics (table a2). The targeting carried out in this manner is robust (table 6). Finally, the annual individual amount is 20 479 FCFA.

Table 6: Results of targeting poor children with the *proxy-means* test (in percentage)

Real status of the child	Predicted status of the child					
	At the national level		In urban areas		In rural areas	
	Non-poor	**Poor**	**Non-poor**	**Poor**	**Non-poor**	**Poor**
Non-poor	63.3	36.7	73.8	26.2	51.4	48.6
Poor	10.7	89.3	21.4	78.6	9.7	90.3

Source: Compiled by the authors using results from the simulations and ECAM3.

Note: the model correctly predicts the real status of children when the actual and predicted statuses are the same ("non-poor/non-poor"; "poor/poor"). On the contrary, it fails when the statuses do not coincide, resulting in either leakage (actual status is "non-poor" and predicted status is "poor") or undercoverage (actual status is "poor" and predicted status is "non-poor").

For all four policies described above, the administrative costs for their implementation are not taken into account.

3.7. Principal sources of data

The main source of data used to develop the Social Accountability Matrix (SAM) underlying the CGE model is the Supply and Use Table (SUT) constructed by the National Institute of Statistics of Cameroon for 2007 (INS 2009). The SAM and consequently the CGE model both incorporate all 42 products/sectors involved in the SUT nomenclature.

The micro-econometric module which deals specifically with all the dimensions of child poverty used in this study is mostly comprised of data from the third National Household Survey in Cameroon (ECAM3) carried out in 2007 (INS 2008a).

4. SIMULATION OF THE REFERENCE SCENARIO ("NO CRISIS" SCENARIO)

4.1. Structure and general trends of the economy in the reference scenario

According to the assumptions of the before-crisis macroeconomic forecasts, the real GDP growth rate in Cameroon should be around 4% in 2008 and over the following years. The BaU scenario simulation gives numbers that cohere with this framework (table 7). In the absence of the crisis, household consumption would increase at an annual average rate of 7-8%. The total investment to GDP ratio would increase from 15% to 17% over this period, with an improvement in the surplus of the current account as well as the government's budget surplus over the same period.

In 2007, VAT receipts were the most important source of government revenue (22.7%), followed by oil royalties (21.6%), taxes levied on firms' income (16.3%), taxes on households' income (12.7%) and customs import tariffs (10.7%). Non counterparty transfers received by the government from abroad only amount to 1% (table 8).

Table 7: Change in macroeconomic aggregates in the no crisis scenario

	2007	2008	2009	2010	2011
Annual growth rate (%)					
Real GDP	-	4.2	4.2	4.3	4.4
Household consumption	-	2.8	2.9	3.0	3.1
Investment	-	7.3	7.6	7.9	8.2
As a percentage of GDP (%)					
Total investment	14.7	15.3	15.8	16.4	17.0
Budget balance	4.4	4.6	4.8	5.0	5.4
Firms' savings	8.8	9.1	9.5	9.8	10.2
Households' savings	3.9	3.8	3.8	3.8	3.7
Exports	24.0	24.1	24.1	24.2	24.4
Imports	23.0	23.0	23.1	23.2	23.3

Source: Authors' calculations using the results of the simulations.

Table 8: Structure of government revenue in the BaU scenario (%)

	2007	2008	2009	2010	2011
Value added tax	22.7	22.9	23.2	23.5	23.8
Petroleum royalties	21.6	21.7	21.7	21.7	21.7
Taxes on businesses' income	16.3	16.2	16.2	16.1	16.1
Taxes on households' income	12.7	12.6	12.5	12.3	12.2
Customs tariffs on imports	10.7	10.7	10.6	10.6	10.5
Excise taxes	8.0	8.1	8.2	8.4	8.6
Production taxes	2.5	2.5	2.5	2.5	2.5
Transfers received from abroad	1.0	1.0	0.9	0.9	0.9
Taxes on exports	0.3	0.3	0.3	0.3	0.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: Authors' calculations using the results of the simulations.

The structure of government revenues remains largely the same over the period of analysis. The contribution of VAT, however, has a significant upward trend, with an increase of one percentage point over the four years. This indicates a gradual increase in the tax base for the VAT, notably due to the increasing size of the formal sector relative to the informal sector.

The structure of household income also remains more or less constant. For households as a whole, income from informal labour is the primary source of revenue, followed by formal labour, primary capital income, dividends, transfers from the state and remittances received from abroad. As in the case of the government, these last only represent about 1% of total household revenue (table 9).

The change in the income of households is also the result of a progressive increase in formal activities and a slowdown in growth in the informal sector. The growth rate of employment in the formal sector is higher than in the informal sector, going from 3.1% in 2008 to 3.4% in 2011, whereas it slips from 1.8% to 1.5% in the informal sector over the same period. The relative share of labour income in the informal sector, however, remains constant due to the gradual rarefaction of labour in the sector. This increase in the wage rate, combined with employment growth in the informal sector, together explain the 3% growth rate in the total mass of labour income in this sector.

Table 9: Structure and change of household income in the reference scenario

		2007	2008	2009	2010	2011
	Share of total revenue (%)					
Principal components of household income	Income from informal labour	33.8	33.9	33.9	33.9	33.9
	Income from formal labour	26.6	26.7	26.7	26.8	26.9
	Income from capital	21.4	21.6	21.9	22.3	22.6
	Dividends	12.7	12.3	12.1	11.6	11.3
	Transfers from the state	4.5	4.5	4.5	4.5	4.4
	Transfers from the rest of the world	1.0	1.0	0.9	0.9	0.9
	Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
	Annual growth rate (%)					
a. Factors of production (volume)	Labour in the formal sector	-	3.1	3.2	3.3	3.4
	Labour in the informal sector	-	1.8	1.7	1.6	1.5
	Households' capital	-	6.3	6.2	6.2	6.1
b. Factor remuneration rate	Wage rate in the formal sector	-	0.0	0.0	0.0	0.0
	Wage rate in the informal sector	-	1.2	1.3	1.4	1.6
	Capital remuneration rate	-	−2.4	−2.1	−1.9	−1.7
c. Factor income (c=a×b)	Income from formal labour	-	3.1	3.2	3.3	3.4
	Income from informal labour	-	3.0	3.0	3.0	3.1
	Income from households' capital	-	4.1	4.3	4.5	4.7

Source: Authors' calculations using the results of the simulations.

While the salary rate is an adjustment variable in the informal sector and can therefore increase or decrease endogenously according to the relative availability of informal labour, it is presumed to be fixed in the short term in the formal sector. The growth rate of the total mass of labour income in the formal sector (3.1% to 3.4%) thus only reflects employment growth in this sector.

The capital remuneration rate is determined *a posteriori* here, as a residual. The change in its value is strongly linked to the relative scarcity of the volume of capital. In this case where the capital growth rate (6.3%-6.1%) is higher than those for formal and informal labour, the volume of capital becomes more and more abundant with respect to these other production factors. This brings about a relative reduction (-2.4% to -1.7%) in the capital remuneration rate, with this effect weakening so long as growth in the volume of capital settles down. The growth in total capital income, however, is larger than income growth for the other factors, growing from 4.1% to 4.5% per year, due to the high accumulation of the volume of capital, combined with a remuneration rate which remains positive.

4.2. Status and trends in child poverty in the reference scenario

4.2.1. Monetary poverty

The official poverty rate for the overall population in Cameroon has remained relatively constant at about 40% between 2001 and 2007 (INS 2008a).[10] This stability in the poverty rate, however, implies an increase in the number of poor due to demographic growth. With an estimated population of 15.5 million inhabitants in 2001, 6.2 million were considered as poor. In 2007, the population of the country was estimated at about 17.9 million including 7.1 million poor. The number of poor people thus increases at a rate similar to the population growth rate.

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[10] More precisely, 40.2% in 2001 and 39.9%% in 2007.

Our simulations show that 50.2% of children were poor in Cameroon in 2007; about one in two children. The monetary poverty rate among children remains nearly constant over the period of analysis in the reference scenario, being respectively 50.16%, 50.04%, 50.06% and 50.11% in 2008, 2009, 2010 and 2011. This conforms to the stagnation in the poverty rate at the national level, as observed empirically between 2001 and 2007.

Spatially (table 10) monetary poverty among children follows the same pattern of prevalence among the 12 regional strata of Cameroon where poverty was measured at the household level.[11] The three northern regions of Cameroon (Adamaoua, North and Far North) recorded the highest levels of monetary poverty among children while the lowest were observed in Cameroon's two main cities, Yaoundé and Douala. In 2007, 68.3% of children were poor in Adamaoua, 74.8% in North and 75.2% in Far North. These three regions considered together therefore contain more than 55% of the poor children in Cameroon, while these regions have just 37.5% of children in the country.

Two other regions have poverty rates above the national average; East (67.7%) and Northwest (64.9%). As for the northern regions, these regions' relative contributions to national child poverty are also greater than their weight within the national population of children.

In contrast, all the strata with child poverty rates below the national average also have lower contributions to child poverty at the national level than their respective weights in the national population of children. We can particularly note the case of Yaoundé and Douala: while 8.2% of children live in Yaoundé only 0.9% of the total number of monetarily poor children in Cameroon lives in the capital city, thanks to a very low poverty rate (5.4%). Similarly, with a total of 7.6% of the nation's population of children, Douala only contributes 1% to the total number of children who are poor in monetary terms, with only 6.3% of children living in a state of monetary poverty in this city.

Generally speaking, for geographic distribution of monetary poverty, the rate of child poverty increases as one moves from the Atlantic coast to the interior of the country and from the south towards the northern regions.[12]

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[11] The 12 strata include the 10 administrative regions of Cameroon (see table 10). In addition to these regions, the cities of Yaoundé and Douala, respectively situated in the Centre and Littoral regions, are regarded as strata in the household survey due to their importance, particularly in terms of population and socioeconomic characteristics. To do this, in the calculations and analysis carried out in this document (unless otherwise specified) the Centre region should be understood as "the Centre region excluding Yaoundé" and the Littoral region as the "Littoral region excluding Douala."

[12] As is also the case for the general poverty rate across the entire Cameroonian population.

Table 10: Child monetary poverty rate in 2007 by region, sex of household head, number of children in the household and urban/rural areas

		Share (in %) of the population of children	FGT0 poverty rate (%)	Absolute contribution (%) to poverty rate	Relative contribution (%) to poverty rate
Regional strata	Douala	7.6	6.3	0.5	1.0
	Yaoundé	8.2	5.4	0.4	0.9
	Adamaoua	5.7	68.3	3.9	7.7
	Centre	6.8	45.8	3.1	6.2
	East	5.0	67.7	3.4	6.7
	Far North	20.8	75.2	15.7	31.2
	Littoral	2.9	31.1	0.9	1.8
	North	11.0	74.8	8.2	16.4
	North West	10.3	64.9	6.7	13.3
	West	11.4	28.9	3.3	6.6
	South	3.5	35.4	1.2	2.5
	South West	6.8	42.2	2.9	5.7
Households led by a woman		20.6	42.4	8.7	17.4
Households led by a man		79.4	52.2	41.5	82.6
Number of children in the household	1	9.4	27.6	2.6	5.2
	2	16.7	34.8	5.8	11.6
	3	21.2	41.2	8.8	17.4
	4	19.9	51.8	10.3	20.6
	5	13.2	64.6	8.5	17.0
	6	7.3	69.5	5.1	10.1
	7 or more	12.3	74.4	9.1	18.1
Rural areas		69.3	66.3	45.9	91.5
Urban areas		30.7	13.9	4.3	8.5
Cameroon		**100.0**	**50.2**	**50.2**	**100.0**

Source: Authors' calculations using estimations from ECAM 3.

Child poverty is more a rural phenomenon: 66.3% of children living in rural areas are poor according to monetary criteria, while this rate is 13.9% in urban areas. Accounting for the relative weights of rural and urban areas in the national population of children, it can be seen that 91.5% of poor children are rural compared to 8.5% who live in urban areas.[13]

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[13] The distinction between urban areas and rural areas used in the National Household Survey in Cameroon (ECAM) and in the analyses of poverty which refer to these two areas is different to the distinction in the general census in Cameroon. In the ECAM survey, urban areas include cities with at least 50 000 inhabitants; all other localities are considered as rural. According to this logic, 36.24% of Cameroonians were urban in 2007 across the entire population, while this figure was 30.7% for children aged 0 to 14. In the general census, however, any town with over 5000 inhabitants and all towns which were the administrative centre for a county were considered as a city. According to this understanding, Cameroon has been more than 50% urbanized since 2002 (INS 2008b).

The prevalence of monetary poverty among children is stronger in households led by a man (52.2% in 2007) than in those led by a woman (42.4% in 2007). It also seems clear that the rate of poverty increases with the number of children in a household. Indeed, the child poverty rate ranges gradually from 27.6% in households with one child to 74.4% in households with 7 or more children. Nearly two-thirds of poor children (65.8%) live in households with four or more children, whereas their weight in the population of children is just 52.7%.

4.2.2. Caloric poverty

Our estimations show that 35.8% of children were in caloric poverty in 2007, indicating much lower prevalence than monetary poverty. If the evolution of the economy continued according to the reference scenario, without any crisis, this rate would have been expected to ring in at 35.9% in 2008, 35.7% in 2009 and 2010, and 35.3% in 2011.

In terms of the spatial distribution in 2007 (table 11), the correlation between caloric and monetary poverty is moderate on average, with a correlation coefficient between these two poverty types being R = 0.5. This is the result of regions where the caloric poverty rate is above the national average but the monetary poverty rate is under the national average, as is the case in the Adamaoua, East and North West regions. This last region has a relatively low rate of caloric poverty (11.54%) even though it is among the five hardest hit regions in terms of monetary poverty among children (with a monetary poverty rate of 64.5%). Conversely, the South region has a caloric poverty rate above the national average, as opposed to the case for monetary poverty in that region. We observe a profound gap between the two types of poverty in several regions, notably in the cities of Yaoundé and Douala, where the caloric poverty rate among children is respectively 18.86% and 24.57%, while the corresponding levels of monetary poverty are just 5.4% and 6.3%. Cameroon's two most northerly regions (the North and Far North regions) are far and away the regions which experience the greatest levels of caloric poverty. Nearly 3 in 5 children living in these two regions are in a state of caloric poverty.

Table 11: Child hunger rate in 2007 by regions and urban/rural areas

		Share (in %) of the population of children	FGT0 poverty rate (%)	Absolute contribution (%) to poverty rate	Relative contribution (%) to poverty rate
Regional strata	Douala	7.6	24.57	1.87	5.24
	Yaoundé	8.2	18.86	1.54	4.31
	Adamaoua	5.7	32.27	1.87	5.22
	Centre	6.8	20.47	1.40	3.91
	East	5.0	26.25	1.31	3.66
	Far North	20.8	61.69	12.84	35.93
	Littoral	2.9	29.37	0.86	2.39
	North	11.0	67.66	7.43	20.77
	North West	10.3	11.54	1.19	3.32
	West	11.4	15.91	1.81	5.06
	South	3.5	43.98	1.52	4.25
	South West	6.8	31.30	2.12	5.94
Rural areas		69.3	41.29	28.61	80.03
Urban areas		30.7	23.26	7.14	19.97
Cameroon		**100.0**	**35.75**	**35.75**	**100.00**

Source: Authors' calculations using estimations from ECAM 3.

We observe that caloric poverty is lower than monetary poverty in rural areas. The total of the first group is equal to 62% of the second. However, in urban areas, there are more children in caloric poverty than in monetary poverty: the number of children who are deemed poor according to monetary criteria are 60% as numerous as those living in caloric poverty in urban areas. Furthermore, if we cross-reference the two dimensions of child poverty, we find that 55% of rural children who live under the monetary poverty line are also poor in caloric terms (67% in urban areas), while 14% of children who suffer from hunger are also poor in monetary terms (16% in urban areas).

4.2.3. Children's participation in school and labour

The national school participation rate (measured by attendance) in 2007 was 82% for 6 to 10 years old and 85% for those aged 11 to 14 (table 12). These numbers do not vary substantially over the period of analysis in the no crisis scenario. They highlight the extent of under-enrolment and even cases of non-enrolment across the country, even though official guidelines relating to education require that all children should be in school as of the age of 6.

Table 12: School and labour participation rates for children in 2007 by age group, by region and rural/urban areas (%)

Age group of child / region or urban vs. rural area		Share (%) of the population of children	Child's activity					
			Goes to school and does not work	Goes to school and works	Does not go to school and works	Does not go to school and does not work	Goes to school	Works
6 to 10 years old	Douala	7.4	93.6	4.3	0.0	2.1	97.9	4.3
	Yaoundé	8.0	95.5	3.6	0.3	0.7	99.1	3.8
	Adamaoua	5.5	31.6	35.1	23.8	9.5	66.7	58.9
	Centre	6.6	68.3	29.4	1.0	1.3	97.7	30.4
	East	4.4	36.7	42.2	11.0	10.1	78.9	53.2
	Far North	21.4	36.7	17.3	17.7	28.3	54.0	35.0
	Littoral	3.0	69.6	28.8	0.7	0.9	98.4	29.5
	North	11.1	33.5	32.6	13.8	20.1	66.1	46.4
	North West	10.9	65.8	27.4	2.8	4.0	93.2	30.2
	West	11.5	54.7	43.2	0.2	1.9	97.9	43.4
	South	3.8	79.8	15.6	2.1	2.6	95.4	17.7
	South West	6.4	80.9	16.0	0.4	2.7	96.9	16.4
	Rural areas	70.4	45.8	30.5	10.5	13.2	76.3	41.0
	Urban areas	29.6	86.1	8.9	0.8	4.1	95.0	9.7
	Cameroon	**100.0**	**57.7**	**24.1**	**7.6**	**10.5**	**81.9**	**31.8**
11 to 14 years old	Douala	7.2	93.5	1.4	2.1	3.0	94.9	3.5
	Yaoundé	6.9	89.7	4.3	1.8	4.3	94.0	6.1
	Adamaoua	5.8	49.3	22.1	20.0	8.6	71.4	42.1
	Centre	7.3	82.8	11.3	2.6	3.2	94.1	13.9
	East	5.0	64.0	17.4	13.8	4.8	81.4	31.2
	Far North	19.1	29.2	35.9	24.9	10.0	65.1	60.8
	Littoral	3.3	81.4	15.0	0.2	3.5	96.4	15.2
	North	9.3	43.8	35.3	15.8	5.1	79.1	51.1
	North West	11.4	66.8	23.0	6.5	3.8	89.8	29.5
	West	12.8	73.8	22.2	2.0	2.0	96.0	24.2
	South	3.8	82.0	11.6	2.2	4.2	93.6	13.8
	South West	8.0	80.7	11.5	4.4	3.4	92.2	15.9
	Rural areas	68.5	54.6	26.7	13.2	5.5	81.3	39.9
	Urban areas	31.5	84.7	8.0	3.0	4.3	92.7	11.0
	Cameroon	**100.0**	**64.1**	**20.8**	**10.0**	**5.1**	**84.9**	**30.8**

Source: Authors' calculations using estimations from ECAM 3.

There is a strong and inverse relation between children's participation in school and the monetary poverty rate across the country, with a negative and strongly significant correlation coefficient for both age groups considered in this study. This implies that areas with lower levels of school participation are also those where the monetary poverty rates are highest, and the inverse is true when the levels of school participation are highest. This is illustrated in figure 6, with a spatial analysis at the regional level showing that the five regional strata with the highest levels of monetary poverty also have the weakest levels of school participation, for both age groups. These are, namely, the three northern regions, the East and the North West. We can also see that the proportion of children in school is lower in rural areas (76% for 6 to 10 years old, and 81% for 11 to 14 years old) than in urban areas (95% for 6 to 10 years old, and 93% for 11 to 14 years old), while we already know that the first of these has a greater prevalence of poverty. However, this does not necessarily indicate simply an insufficient demand for education in these areas, but also an insufficient supply of education.

Figure 6: Child monetary poverty and school participation rates across region in 2007
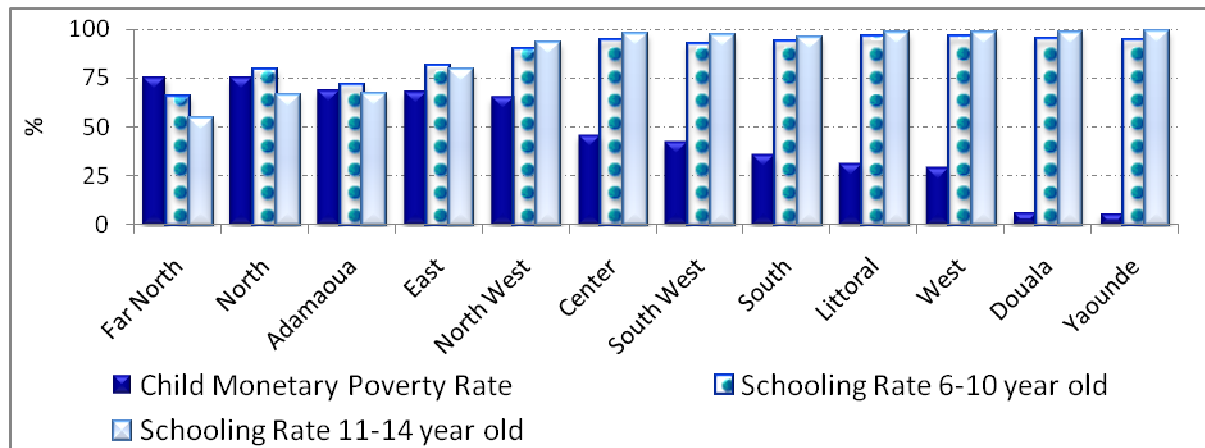
Source: Compiled by the authors using results from the ECAM3.

Note: Correlation coefficient between the child monetary poverty and school participation is -0.8, thus witnessing a negative relationship between the two indicators.

Children's labour participation rate is stable over the period of analysis, at 31% for those aged 6 to 10 and 32% among those aged 11 to 14. Labour among children in Cameroon is largely a rural phenomenon. In the 6 to 10 years old category, 41% of children living in rural areas participate in labour, as opposed to 10% in urban areas. Among children aged 11 to 14 years old, 40% of rural children work as opposed to 11% of urban children. Indeed, a very high proportion of children in rural areas work at the same time as they are registered at school and a substantial proportion are involved in labour only.

The regions where children's labour participation rate is greater than the national average are, except for an exceptional case, those where the school participation rate is below average. These are, namely, the Far North, the North, Adamaoua and the East (figures 7 and 8).

Figure 7: School participation *(average = 81.9%)* **and labour participation rates among children** *(average = 31.8%)* **in 2007, 6 to 10 years old**
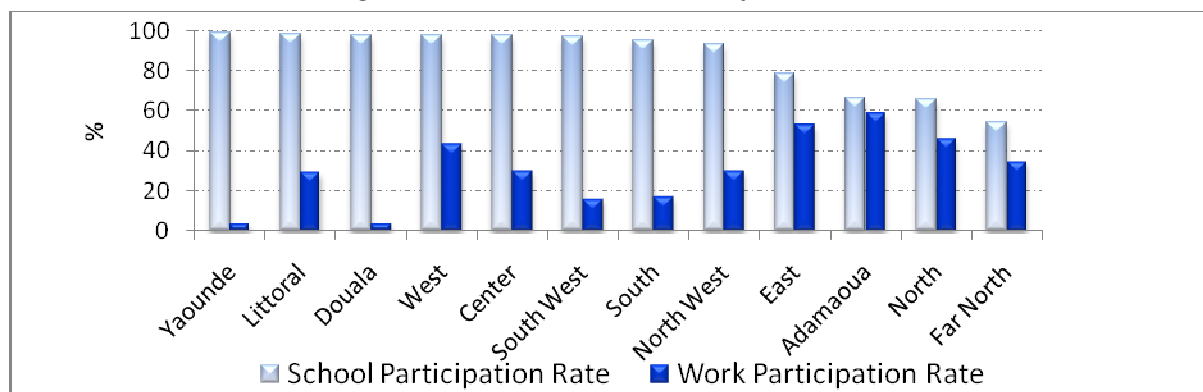
Source: Authors' calculations using estimations from ECAM 3.

Figure 8: School participation *(average = 84.9%)* **and labour participation rates among children** *(average = 30.8%)* **in 2007, 11 to 14 years old**
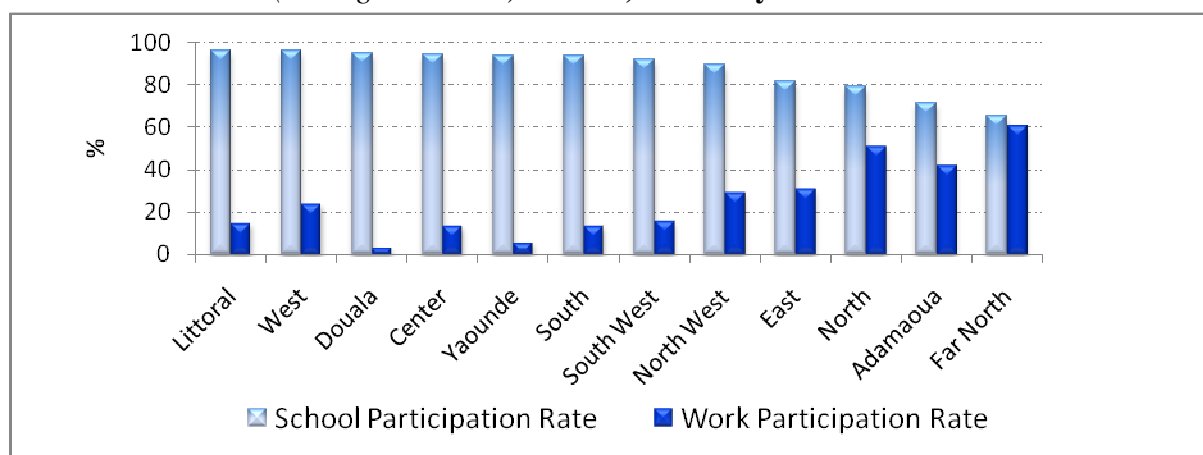
Source: Authors' calculations using estimations from ECAM 3.

4.2.4. Access to health care services

In 2007, 54.7% of ill children solicited health care services from some sort of health care facility (table 13). This is a relatively low level. This weakness can not only be explained by factors inhibiting demand, but also by an insufficient supply of health services across the country. Moreover, even where these health facilities reach households, parents sometimes use their own judgment of the severity of the illness to make the decision of whether or not to visit a health facility. The consultation rate among children is higher in rural areas (56.2%) than in cities (51.6%); notably Adamaoua (88.9%), the North (58.2%), the Far North (58.1%) and the East (54.8%). As analyzed below, it should be pointed out that there are large differences in the type of health facility consulted between regions and rural versus urban areas.

Table 13:   Health consultation rate, global and by type of facility, for children in 2007

Regions/urban-rural areas	Overall consultation rate among sick children (%)	Percentage of children consulting each type of facility				
		1	2	3	4	Total
Douala	50.2	8.0	62.9	8.0	21.0	100.0
Yaoundé	47.0	22.8	53.1	16.2	7.9	100.0
Adamaoua	88.9	2.2	23.7	1.2	72.9	100.0
Centre	37.1	2.2	84.7	0.3	12.9	100.0
East	54.8	10.5	65.1	3.6	20.8	100.0
Extreme North	58.1	1.3	72.4	0.6	25.8	100.0
Littoral	46.7	3.9	60.6	12.3	23.1	100.0
North	58.2	3.8	56.2	1.0	39.0	100.0
North West	47.0	4.4	74.1	1.8	19.8	100.0
West	53.5	1.9	52.0	5.4	40.8	100.0
South	42.5	4.7	71.7	5.0	18.6	100.0
South West	50.4	6.6	78.8	2.2	12.4	100.0
Rural areas	56.2	0.9	59.5	1.6	37.9	100.0
Urban areas	51.6	13.6	57.7	8.5	20.2	100.0
Cameroon	**54.7**	**4.9**	**59.0**	**3.8**	**32.4**	**100.0**

Source: Authors' calculations using estimations from ECAM 3.

Note: 1 =   First class hospitals; Provincial hospitals
2 =   District hospitals and medical centres; Integrated health centres/health centres; House visits by a doctor or health worker
3 =   Pharmacy; Clinic / medical office; School infirmary; at the workplace; Health CIG/NGO
4 =   Traditional healer; Informal vendor of modern medicines; Other.

Using data available from the ECAM3 survey, we classified the health facilities consulted into four categories, in decreasing order of the quality of care they administer. The first category includes first class hospitals and provincial hospitals. The second includes district hospitals and medical centres, integrated health centres and home visits by doctors and health care workers. In the third, there are consultations in pharmacies, clinics and medical offices, school infirmaries, medical facilities at the workplace or health CIGs/NGOs. The last category includes traditional healers and informal vendors of modern medicines.

The results of this survey show that the second and fourth categories are the two main options used for children: at the national level, 59% of children who consulted health care facilities use the second category, 32.4% use the fourth, and the two other groups only add up to 9%.

The use of traditional healers or informal vendors of modern medicines is most common in the three northern regions and the West region. In Adamaoua for instance, nearly three in four children use their services. In rural areas, nearly 40% of sick children who consult some sort of health facility resorted to traditional healers or informal vendors, while the corresponding figure in urban areas is closer to one in five sick children. We also observe that the use of higher quality health services is more common in urban areas. But urban children living in a household without enough money to use such facilities prefer self medication (partially indicated by use of category 3). This preference for category 3 when they do not have the means to access the first category can largely be explained by the fact that facilities in categories 2 or 4 are relatively less developed in cities than in rural areas.

The situation of access to health care described above does not change significantly over the period of analysis in the no crisis scenario.

5. SIMULATION RESULTS OF THE CRISIS SCENARIO

5.1. Macroeconomic impacts of the crisis

The crisis is predicted to cause a reduction in the real GDP growth rate with respect to the reference scenario (BaU). This reduction is 0.4 percentage points in 2008, 1.3 in 2009, 0.9 in 2010 and 0.8 in 2011. The crisis negatively impacts the economy over the entire period of analysis; but it is in 2009 that the greatest decline in relation to the no crisis scenario is observed, if we take real GDP growth as the performance indicator, or a number of other macroeconomic indicators such as economic agents' income, the budget balance or the volume of exports (table 14). A strong decline in the budget balance and in the volume of investments also arises in 2008.

Table 14: Impact of the crisis on macroeconomic aggregates

		2008	2009	2010	2011
		Annual growth rate (%)			
Real GDP	No crisis scenario	4.2	4.2	4.3	4.4
	Crisis	3.8	2.9	3.4	3.6
	Change	*−0.4*	*−1.3*	*−0.9*	*−0.8*
Budget balance	No crisis scenario	8.3	9.1	9.8	10.5
	Crisis	−16.4	−18.7	9.3	9.7
	Change	*−24.7*	*−27.8*	*−0.5*	*−0.8*
Government revenue	No crisis scenario	3.8	4.0	4.2	4.5
	Crisis	−1.5	−1.1	3.4	3.4
	Change	*−5.3*	*−5.1*	*−0.8*	*−1.1*
Firms' income	No crisis scenario	3.5	3.7	3.8	4.0
	Crisis	0.0	−1.8	3.5	3.1
	Change	*−3.5*	*−5.5*	*−0.3*	*−0.9*
Households' income/consumption	No crisis scenario	2.8	2.9	3.0	3.1
	Crisis	1.3	−1.7	1.7	2.7
	Change	*−1.5*	*−4.6*	*−1.3*	*−0.4*
Investment	No crisis scenario	7.3	7.6	7.9	8.2
	Crisis	1.7	3.3	5.5	5.7
	Change	*−5.6*	*−4.3*	*−2.4*	*−2.5*
Export volume	No crisis scenario	5.4	5.0	4.6	4.7
	Crisis	4.2	0.1	3.4	3.1
	Change	*−1.2*	*−4.9*	*−1.2*	*−1.6*
		In percentage of GDP			
Investment	No crisis scenario	15.3	15.8	16.4	17.0
	Crisis	14.7	15.2	15.5	15.9
	Change	*−0.6*	*−0.6*	*−0.9*	*−1.1*
Exports	No crisis scenario	24.1	24.1	24.2	24.4
	Crisis	22.4	21.3	22.0	22.1
	Change	*−1.7*	*−2.8*	*−2.2*	*−2.3*
Imports	No crisis scenario	23.0	23.1	23.2	23.3
	Crisis	21.8	21.8	22.0	22.2
	Change	*−1.2*	*−1.3*	*−1.2*	*−1.1*

Source: Authors' calculations using the results of the simulations.

Among sources of government revenue, oil royalties suffer the strongest decline (about −17% in 2008 and 2009), due to the collapse of international oil prices which began in mid-2008. The decline in customs receipts with respect to the no crisis scenario is also remarkable (−8% in 2008 and −11% in 2009) and can largely be explained by a broad decline in world prices of imports. Taxes levied on firms' and households' income also decline due to lower revenue among these agents (table 15).

Table 15: Impact of the crisis on government income

		2008	2009	2010	2011
		Annual growth rate			
Oil royalties	No crisis scenario	4.0	4.1	4.3	4.5
	Crisis	−13.2	−12.7	8.0	5.1
	Change	*−17.2*	*−16.8*	*3.7*	*0.6*
Customs tariffs	No crisis scenario	3.3	3.4	3.5	3.7
	Crisis	−4.6	−7.2	1.0	2.1
	Change	*−7.9*	*−10.6*	*−2.5*	*−1.6*
Taxes on businesses	No crisis scenario	3.5	3.7	3.8	4.0
	Crisis	0.0	−1.8	3.5	3.1
	Change	*−3.5*	*−5.5*	*−0.3*	*−0.9*
Taxes on households	No crisis scenario	2.8	2.9	3.0	3.1
	Crisis	1.3	−1.7	1.7	2.7
	Change	*−1.5*	*−4.6*	*−1.3*	*−0.4*

Source: Authors' calculations using the results of the simulations.

Incomes from production factors held by households dwindle under the effects of the crisis (table 16). The decline in household labour income is stronger in the informal sector than in the formal sector. Yet, the crisis leads to increased employment in the first category at the cost of the second. But the effect of the decline in the wage rate in the informal sector is much greater than the effect of growth in the volume of labour in this sector. The decline in the total amount of wages earned in the formal sector is essentially due to a loss of employment in the sector, given that wages are fixed according to the assumption of short term downward rigidity in wages. As for income from household capital, its decline with respect to the no crisis scenario results from the declines in the capital remuneration and accumulation rates.

At the height of the crisis in 2009, informal labour income deteriorates more among qualified urban workers (−7.93%) than non qualified urban (−6.73%) and rural residents (−5.73%). Table 17 shows that the loss of labour income in the formal sector that year is stronger among non qualified urban workers (−4.44%) than among qualified urban (−2.65%) and rural (−2.35%) residents.

Table 16: Impact of the crisis on household income by different factors

			2008	2009	2010	2011
a. Production factors	Labour in the formal sector	No crisis scenario	3.1	3.2	3.3	3.4
		Crisis	2.7	0.1	2.2	2.4
		Change	*−0.4*	*−3.1*	*−1.1*	*−1.0*
	Work in the informal sector	No crisis scenario	1.8	1.7	1.6	1.5
		Crisis	2.1	4.3	2.6	2.4
		Change	*0.3*	*2.6*	*1.0*	*0.9*
	Household capital	No crisis scenario	6.3	6.2	6.2	6.1
		Crisis	6.3	5.1	4.3	4.2
		Change	*0.0*	*−1.1*	*−1.9*	*−1.9*
b. Factor remuneration rate	Wage rate in the formal sector	No crisis scenario	0.0	0.0	0.0	0.0
		Crisis	0.0	0.0	0.0	0.0
		Change	*0.0*	*0.0*	*0.0*	*0.0*
	Wage rate in the informal sector	No crisis scenario	1.2	1.3	1.4	1.6
		Crisis	−1.1	−7.3	−0.7	0.4
		Change	*−2.3*	*−8.6*	*−2.1*	*−1.2*
	Capital remuneration rate	No crisis scenario	−2.4	−2.1	−1.9	−1.7
		Crisis	−6.0	−7.0	−0.9	−0.9
		Change	*−3.6*	*−4.9*	*1.0*	*0.8*
Income from factors (a×b)	Income from formal labour	No crisis scenario	3.1	3.2	3.3	3.4
		Crisis	2.7	0.1	2.2	2.4
		Change	*−0.4*	*−3.1*	*−1.1*	*−1.0*
	Income from informal labour	No crisis scenario	3.0	3.0	3.0	3.1
		Crisis	1.0	−3.6	1.7	2.7
		Change	*−2.0*	*−6.6*	*−1.3*	*−0.4*
	Income from household capital	No crisis scenario	4.1	4.3	4.5	4.7
		Crisis	0.7	−1.9	3.4	3.6
		Change	*−3.4*	*−6.2*	*−1.1*	*−1.1*

Source: Authors' calculations using the results of the simulations.

Table 17: Impact of the crisis on labour income by qualification, urban/rural areas and sector (*change in percentage points with respect to the no crisis scenario*)

			2008	2009	2010	2011
a. Labour factor	Formal sector	Rural	−1.61	−2.35	−0.18	0.24
		Urban qualified	−0.29	−2.65	−1.17	−1.07
		Urban non qualified	−0.55	−4.44	−1.04	−1.00
	Informal sector	Rural	0.05	0.07	0.01	−0.01
		Urban qualified	0.49	4.52	1.95	1.81
		Urban non qualified	0.75	6.12	1.45	1.46
b. Wage rate	Formal sector	Rural	0.00	0.00	0.00	0.00
		Urban qualified	0.00	0.00	0.00	0.00
		Urban non qualified	0.00	0.00	0.00	0.00
	Informal sector	Rural	−2.59	−5.71	−0.74	0.42
		Urban qualified	−2.03	−11.76	−4.02	−3.15
		Urban non qualified	−1.56	−12.03	−2.82	−2.50
Labour income (a×b)	Formal sector	Rural	−1.61	−2.35	−0.18	0.24
		Urban qualified	−0.29	−2.65	−1.17	−1.07
		Urban non qualified	−0.55	−4.44	−1.04	−1.00
	Informal sector	Rural	−2.54	−5.64	−0.73	0.41
		Urban qualified	−1.54	−7.24	−2.07	−1.34
		Urban non qualified	−0.81	−5.91	−1.37	−1.04

Source: Authors' calculations using the results of the simulations.

5.2. Impact of the crisis on child poverty

5.2.1. Impact of the crisis on monetary poverty

The crisis is forecast to aggravate monetary poverty among children. Relative to the reference scenario, the child monetary poverty rate increases by 0.52 percentage points in 2008, 2.02 points in 2009, 2.17 in 2010 and 2.09 in 2011 (table 18). This represents a 1.05% increase in the number of poor children in 2008, 4.04% in 2009, 4.34% in 2010, and 4.18% in 2011, all with respect to the no crisis situation.

Table 18: Impact of the crisis on child monetary poverty

	2007	2008	2009	2010	2011
a. No crisis scenario (%)	50.20	50.16	50.04	50.06	50.11
b. Crisis (%)		50.68	52.06	52.23	52.20
c. Impact = b − a *(percentage points)*		**0.52**	**2.02**	**2.17**	**2.09**

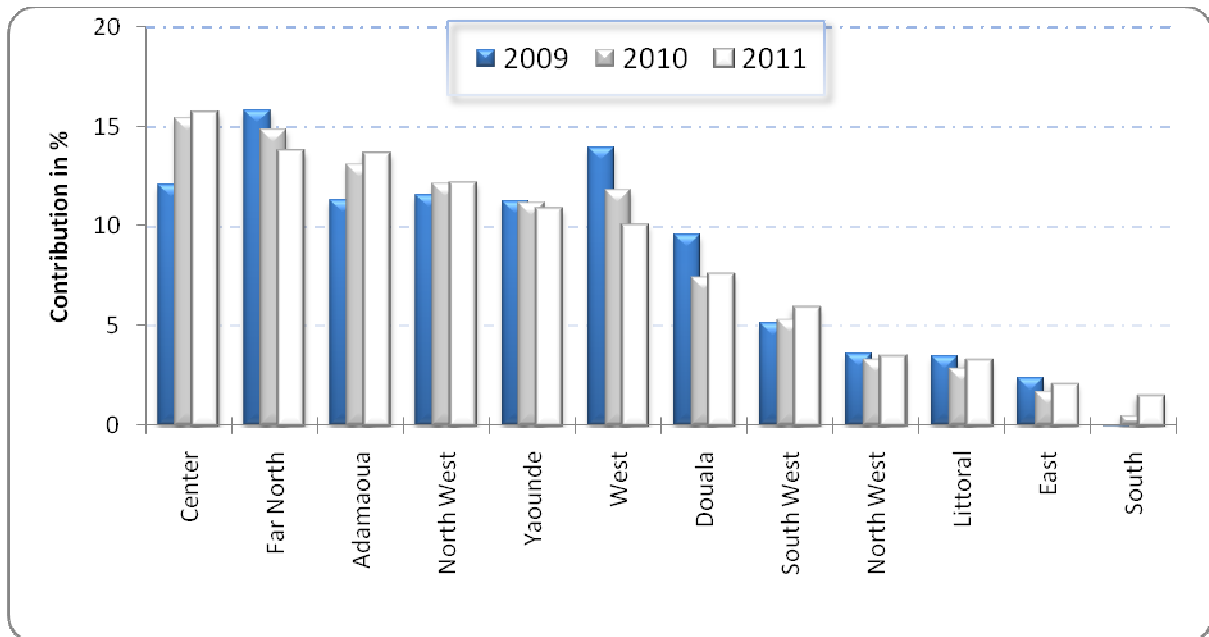*Source*: Authors' calculations using the results of the simulations.

The majority of children who become poor due to the crisis live in rural areas (62% in 2008, 58% in 2009, 60% in 2010, and 61% in 2011). However, in urban areas, the growth rate of child poverty is very high (4.67% in 2008, 20.36% in 2009, 20.82% in 2010, and 19.24% in 2011). This growth rate is relatively low in rural areas, which initially have a large number of poor children (0.71% in 2008, 2.55% in 2009, 2.81% in 2010, and 2.78% in 2011).

Due to the crisis, poverty gets worse in all twelve regions of the country, but the change is not uniform either in terms of the contribution to nation-wide growth of the number of poor children (figure 9; tables 19 and a3), or in terms of the growth of poverty within each region (figure 10; table a4). Indeed, if we look at the additional number of children in monetary poverty (engendered by the crisis), we can see that the greatest contribution to this growth in poverty comes from 6 regions (Centre, Far North, Adamaoua, North West, Yaoundé and West), the other regions having contributions below average. It can also be noted that the contribution of the regions to growth in poverty brought about by the crisis are not strongly correlated to these regions' pre-crisis contribution to monetary poverty at the national level:[14] for example, regions which make a strong contribution to growth in poverty caused by the crisis may have an above average contribution to national poverty (Far North, North West), while other regions have a less than average contribution (Centre, Adamaoua, Yaoundé, West).

It is the cities of Yaoundé and Douala where the growth rate of monetary poverty is highest (figure 10 and table a4). In Yaoundé, the crisis causes more than a 50% increase in the number of children in monetary poverty in 2009-2011 relative to the no crisis situation, while this increase is about 4% at the national level. In Douala, this increase was 45% in 2009 and about 35% in 2010 and 2011. Four other regions have above average growth rates in the number of poor children over the 2009-2011 period: the Centre (8-11%), Littoral (7-8%), Adamaoua (6-7%) and West (6-9%) regions.

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[14] Correlation coefficient equal to 0.40, 0.37 and 0.33 respectively in 2009, 2010 and 2011.

Figure 9: Contribution of each region (in %) to the change in the total number of children in monetary poverty under the crisis scenario

Source: Authors' calculations using the results of the simulations.

Figure 10: Change due to the crisis, in each region, of the number of children in monetary poverty (in %)
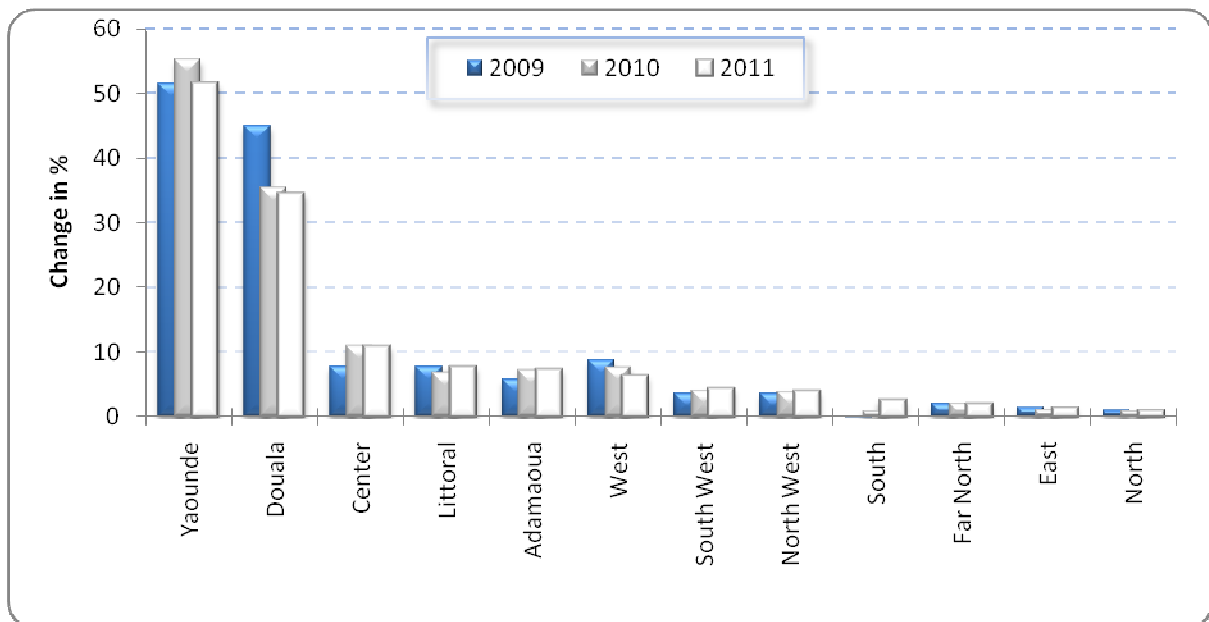
Source: Authors' calculations using the results of the simulations.

Note: The changes (growth rate) are expressed with respect to the no crisis scenario.

Table 19: Impact of the crisis on the absolute contribution of each region and rural/urban areas to child monetary poverty

Region/urban-rural areas	Absolute contribution (%) to poverty rate in the *reference situation* (2007)	Change of the absolute contribution to poverty rate with respect to the reference situation *(in percentage points)*			
		2008	**2009**	**2010**	**2011**
Douala	0.5	0.05	0.19	0.16	0.16
Yaoundé	0.4	0.03	0.23	0.24	0.23
Adamaoua	3.9	0.03	0.23	0.29	0.29
Centre	3.1	0.03	0.24	0.34	0.33
East	3.4	0.02	0.05	0.04	0.04
Far North	15.7	0.14	0.32	0.32	0.29
Littoral	0.9	0.03	0.07	0.06	0.07
North	8.2	0.04	0.07	0.07	0.07
North West	6.7	0.06	0.23	0.26	0.26
West	3.3	0.07	0.28	0.26	0.21
South	1.2	0.02	0.00	0.01	0.03
South West	2.9	0.01	0.10	0.12	0.12
Rural	45.9	0.32	1.17	1.29	1.28
Urban	4.3	0.20	0.85	0.88	0.81
National	50.2	0.52	2.02	2.17	2.09

Source: Authors' calculations using the results of the simulations.

5.2.2. Impact of the crisis on caloric poverty

The simulated impact of the crisis on caloric poverty is mixed, but is generally quite unfavourable from 2009 to 2011. In 2008, the crisis actually induces a reduction in caloric poverty due to the drop in prices of primary food products without a significant reduction in income compared to the no crisis scenario: at the national level, the caloric poverty rate among children is 0.47 percentage points lower in 2008 than in the no crisis scenario (table 20), amounting to 1.32% fewer poor children in caloric terms. This slight decline benefits all areas to varying degrees except for the Centre, where caloric poverty remains nearly unchanged (tables a5 and a6).

In 2009, 2010 and 2011, the crisis causes an increase in the rate of caloric poverty among children, respectively by 0.20, 0.38 and 0.56 percentage points compared to the reference scenario. This respectively amounts to increases of 0.56%, 1.08% and 1.60% in the number of poor children across the country.

Table 20: Impact of the crisis on child caloric poverty rate

	2007	2008	2009	2010	2011
a. No crisis scenario (%)	35.75	35.83	35.59	35.36	35.04
b. Crisis (%)		35.36	35.79	35.74	35.60
c. Impact = b − a *(% points)*		−0.47	0.20	0.38	0.56

Source: Authors' calculations using the results of the simulations.

Of the 12 regions, caloric poverty increases in seven of them and declines in the other five over 2009-2011 (figures 11 and 12; tables a5 and a6). It is Yaoundé and Douala which record the strongest deterioration. In Douala, the number of children in caloric poverty increases by 7.7% in 2009, 11.3% in 2010, and 16.3% in 2011due to the crisis. In Yaoundé, this number

increases by 5.9% in 2009, and by 9.7% in 2010 and 2011. The contribution of the Far North and the North to growth of caloric poverty is also substantial.

Among the regions where the crisis leads to a pullback in caloric poverty, the North West and Centre are especially notable, where the decline continues over the three years of the 2009-2011 sub-period. In the North West, the number of poor children declines by 12.3% in 2009, 8.8% in 2010 and 8.0% in 2011. In the Centre, this number is reduced by 5.5% in 2009, 2.8% in 2010, and 2.2% in 2011.

Figure 11: Change, due to the crisis, of the absolute contribution of each region to caloric poverty among children *(in percentage points)*
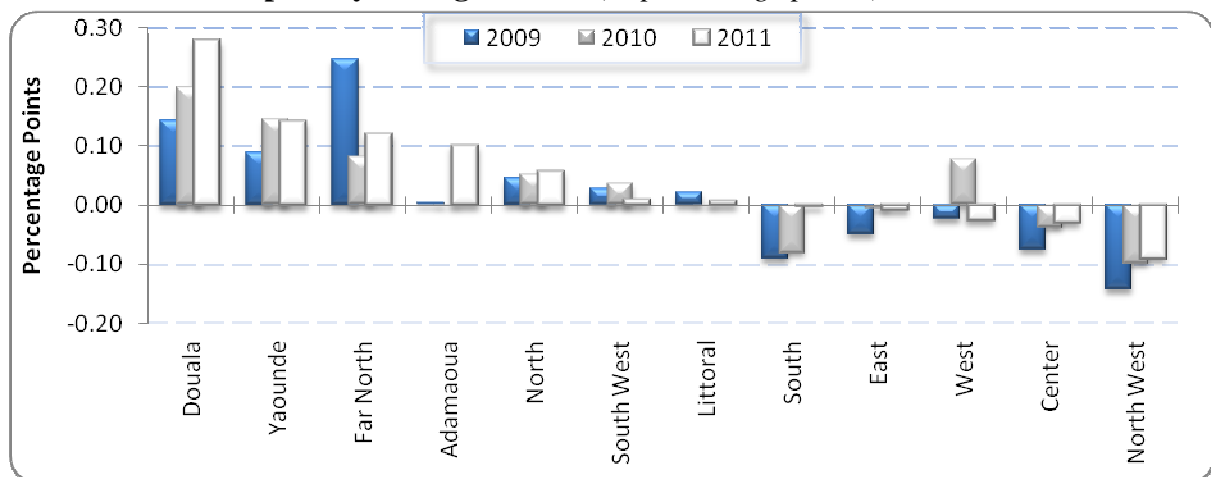
Source: Authors' calculations using the results of the simulations.
Note: The changes are expressed with respect to the no crisis scenario.

Figure 12: Change, due to the crisis, in the total number of children in caloric poverty in each region *(in %)*
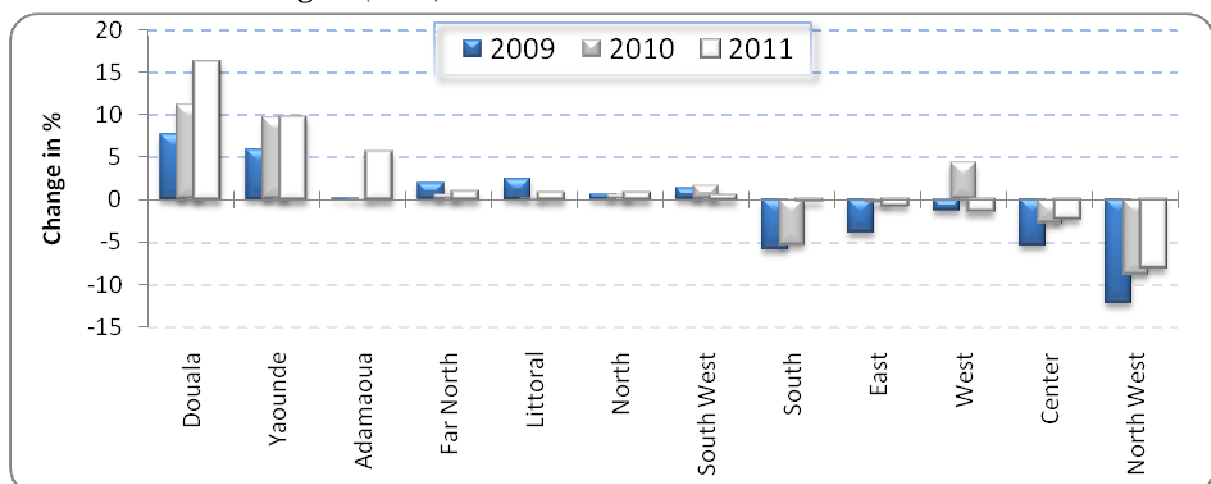
Source: Authors' calculations using the results of the simulations.
Note: The changes are expressed with respect to the no crisis scenario.

5.2.3. Impact of the crisis on children's school and labour participation rates

The crisis would not significantly influence children's school and labour participation rates. The changes in these rates, due to the crisis, are less than one percentage point from 2008 to 2011, in both the 6 to 10 year old and 11 to 14 year old age groups (table 21).

However, despite the small change in these indicators, the direction of change shows that the crisis tends to discourage school attendance and to induce child labour.

Table 21: Impact of the crisis on children's school and labour participation rates *(Change in percentage points with respect to the no crisis scenario)*

Age group / Year		Occupation status of children					
		Student / non worker	Student / worker	Non student / worker	Non student / non worker	Student	Worker
Age 6 -10	Reference rate (%)	57.744	24.111	7.638	10.505	81.856	31.749
	2008	−0.010	−0.004	0.004	0.010	−0.014	0.000
	2009	−0.037	−0.012	0.013	0.035	−0.048	0.001
	2010	−0.039	−0.012	0.014	0.037	−0.051	0.002
	2011	−0.038	−0.012	0.013	0.036	−0.049	0.002
Age 11-14	Reference rate (%)	64.072	20.825	9.988	5.114	84.897	30.813
	2008	−0.002	−0.001	0.001	0.002	−0.003	0.000
	2009	−0.007	−0.004	0.004	0.007	−0.011	0.000
	2010	−0.007	−0.005	0.004	0.007	−0.012	0.000
	2011	−0.007	−0.004	0.004	0.007	−0.011	0.000

Source: Authors' calculations using the results of the simulations.

5.2.4. Impact of the crisis on access to health care services

The impact of the crisis on children's access to health care services is predicted to be weak, but is clearly noticeable and is distressing (table 22). The overall rate of consultation declines by about 1% with respect to the reference scenario in each of the years from 2009-2011, which means that the crisis prevents 1 in every 100 children who would have consulted a health facility from consulting the relevant services.

Table 22: Impact of the crisis on the health consultation rate, global and by type of facility, by children *(difference in % points)*

Year	Change (%) in the overall consultation rate for sick children	Change (%) in the number of children consulting each type of medical facility compared to the no crisis scenario					
		1	2	3	4	Modern facilities (1+2+3)	Traditional or informal facilities (4)
2008	−0.20	−0.81	0.02	−0.36	0.23	−0.10	0.23
2009	−0.74	−2.89	0.11	−1.24	0.74	−0.30	0.74
2010	−0.80	−3.28	0.10	−1.41	0.89	−0.37	0.89
2011	−0.77	−3.19	0.08	−1.42	0.90	−0.37	0.90

Source: Authors' calculations using the results of the simulations.
Note: 1 =   First class hospitals; Provincial hospitals
         2 =   District hospitals and medical centres; Integrated health centres/health centres; House visits by a doctor or health worker
         3 =   Pharmacy; Clinic/medical office; School infirmary; at the workplace; Health CIG/NGO
         4 =   Traditional healer; Informal vendor of modern medicine; Other.

The number of children using facilities where care is presumed to be of highest quality (the first class hospitals and the provincial hospitals) declines under the influence of the crisis, by about 1% in 2008 and 3% in 2009, 2010 and 2011, with respect to the reference scenario. Visits to medical clinics, pharmacies and use of other facilities in this category also decline,

by more than 1% in 2009, 2010 and 2011. Some parents who do not take their children to these two categories of facilities refer to medical facilities in the second category and others refer to facilities in the fourth category.[15]

Overall, under the effect of the crisis, the number of children using modern facilities (categories 1, 2 and 3) declines, while the number using traditional or informal facilities (category 4), where care is reputed to be of inferior quality, increases.

6. EFFECTS OF POLICIES RESPONDING TO THE CRISIS

6.1. Macroeconomic impacts of the policy responses

All the simulated policy responses have a positive effect on GDP growth. However, the stimulus that these policies provide are very small at the macroeconomic level, and are far from fully counteracting the crisis' negative effects on real GDP growth (figure 13). The policy of cash transfers appears to be the least effective in this sense, although its results are not enormously different from those produced by the VAT reduction policy or elimination of customs tariffs on food products.

The impact of these policies on other variables (economic agents' income, investment, export volumes) does not show signs of any significant reversal from the trend (table 23). These results are consistent with expectations at the macroeconomic level; indeed, if the simulated policies can provide a rapid response to the socioeconomic harm of the crisis, their effects are only transitory and, as a consequence, are not sustained enough to address alone concerns about economic recovery. To effectively boost growth, specific policies would have to be implemented to encourage accumulation and efficient use of production factors, along with improved productivity. However, measures which flow from such policies are not generally applied immediately and cannot be seen as rapid responses in cases of exogenous shocks.

Figure 13: Impact of policy responses on the real GDP growth rate
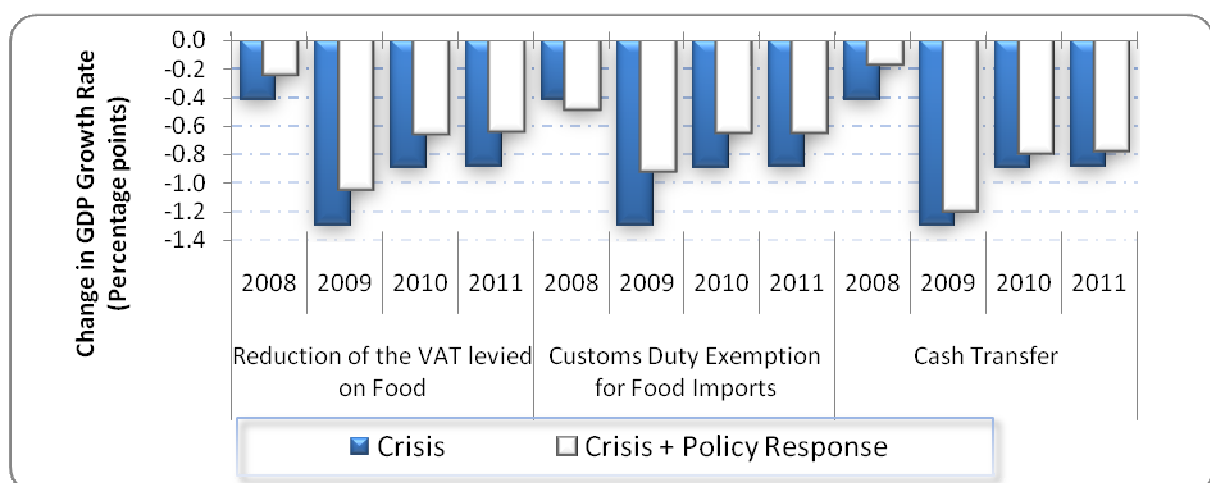
Source: Authors' calculations using the results of the simulations.
Note: The changes are expressed with respect to the no crisis scenario.

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[15] See definition of categories at table 22.

Table 23: Impacts of policy responses on macroeconomic aggregates

		2008	2009	2010	2011
	Changes in the growth rate (% points) with respect to the no crisis scenario				
Real GDP	*Crisis*	*−0.4*	*−1.3*	*−0.9*	*−0.8*
	VAT food subsidy	−0.2	−1.0	−0.7	−0.6
	Food customs tariff subsidy	−0.5	−0.9	−0.7	−0.7
	Cash transfer	−0.2	−1.2	−0.8	−0.8
Budget balance	*Crisis*	*−24.7*	*−27.8*	*−0.5*	*−0.8*
	VAT food subsidy	−3.8	−22.7	−1.8	−1.9
	Food customs tariff subsidy	−13.7	−31.3	0.1	−0.1
	Cash transfer	−24.1	−27.4	0.2	−0.2
Government revenue	*Crisis*	*−5.3*	*−5.1*	*−0.8*	*−1.1*
	VAT food subsidy	−0.5	−4.7	−0.7	−1.0
	Food customs tariff subsidy	−2.8	−6.2	−0.6	−0.8
	Cash transfer	−5.4	−5.0	−0.6	−0.9
Firms' income	*Crisis*	*−3.5*	*−5.5*	*−0.3*	*−0.9*
	VAT food subsidy	−4.0	−5.0	0.0	−0.6
	Food customs tariff subsidy	−2.4	−6.1	0.0	−0.6
	Cash transfer	−3.4	−5.3	−0.1	−0.7
Households' income	*Crisis*	*−1.5*	*−4.6*	*−1.3*	*−0.4*
	VAT food subsidy	−1.4	−4.3	−1.1	−0.3
	Food customs tariff subsidy	−1.0	−4.7	−1.1	−0.3
	Cash transfer	0.5	−4.4	−1.2	−0.4
Investment	*Crisis*	*−5.6*	*−4.3*	*−2.4*	*−2.5*
	VAT food subsidy	1.0	−3.7	−2.1	−2.1
	Food customs tariff subsidy	3.8	−5.6	−2.4	−2.4
	Cash transfer	−4.2	−4.4	−2.0	−2.1
Export volume	*Crisis*	*−1.2*	*−4.9*	*−1.2*	*−1.6*
	VAT food subsidy	−2.2	−4.7	−1.0	−1.4
	Food customs tariff subsidy	−2.2	−4.0	−0.9	−1.4
	Cash transfer	−2.9	−4.7	−1.1	−1.5

Source: Authors' calculations using the results of the simulations.

6.2. Impact of policy responses on child poverty

### 6.2.1. Impact of policy responses on monetary poverty

Of all the simulated policy responses, only the one consisting of cash transfers completely offsets the adverse effect of the crisis on monetary poverty among children, at least at the national level (figure 14). Following implementation of this policy, the rates of monetary poverty are lower than in the reference scenario: 48.52%, 49.62%, 49.77% and 49.80%, respectively for the years 2008, 2009, 2010 and 2011, corresponding respectively to 3.38%, 0.86%, 0.56% and 0.62% reductions in the number of children experiencing monetary poverty across the country.

The three other policy responses, namely the reduction of VAT on food goods, elimination of customs tariffs applied on food products and the school canteen subsidy, limit the increase in monetary poverty brought about by the crisis, but do not entirely eliminate it over the study period.[16] The least ineffective of the three is subsidizing school canteens, which however has the smallest budget. It eliminates the growth in poverty in 2008 and reduces this poverty growth by about a quarter in 2009, 2010 and 2011. The elimination of customs tariffs on food products does not change the crisis' adverse impact on monetary poverty in 2008. In 2009, 2010 and 2011, it reduces this impact respectively by 13%, 20%, and 25%. Finally, the

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[16] It is important to keep in mind that the transfer policies and the VAT reduction on food goods are perfectly comparable, in the sense that they involve the same total budget (1% of GDP).

subsidy for the VAT levied on food products turns out to be the most ineffective policy response in terms of reducing monetary poverty. It holds down the growth in poverty caused by the crisis by 8% in 2009 and just 10% in 2010 and 2011 (no effects in 2008).

Figure 14: Changes in child monetary poverty rate, by alternative policy responses compared to the crisis
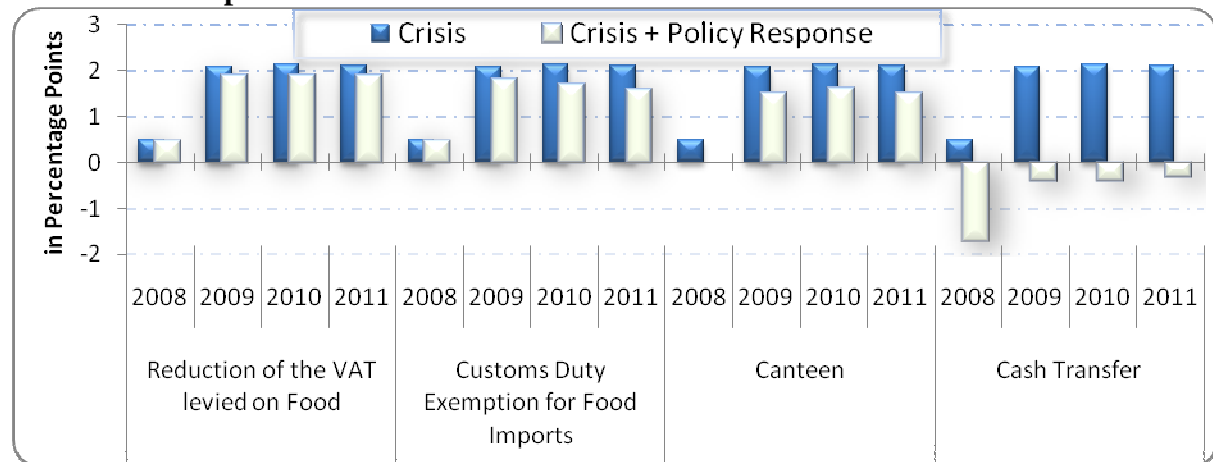
Source: Authors' calculations using the results of the simulations.
*Note*: The changes are expressed with respect to the no crisis scenario.

The extent to which poor children are targeted by the policies is one of the principal factors explaining the relative efficacy of each policy response. Given the robustness of the results of proxy-means targeting, the cash transfer policy carries the most benefits for poor children because these transfers are made to predicted poor households. The impact of the school canteen policy is also noteworthy for its low cost (0.19% of GDP), but also because this policy only benefits children who attend school in districts where the level of monetary poverty is higher than the national average. However, the policies of subsidizing food products via either a VAT reduction or eliminating customs tariffs are applied universally, and do not specifically target poor households. Moreover, nothing guarantees that the products consumed by poor households are those affected by these policies. On the contrary, as shown by Emini, Cockburn and Decaluwé (2005), few of the food products targeted by VAT in Cameroon are consumed by the poor. Most food products, which occupy by far the largest share on consumption expenditures among the poor, are not covered by the VAT because they are produced in the informal sector (VAT, naturally, is only applied on outputs from formal activities).[17] Emini, Cockburn and Decaluwé (2005) note that, in 2001, 61% of expenditures of the poor in Cameroon were spent on consumption of agricultural products, while the VAT levied on these products only represented 0.43% of total VAT receipts. It thus appears likely that a very large majority, if not all, of the poor would not actually be affected by a policy consisting of reducing or even eliminating the VAT on food products, because almost all the food products they consume are already exempted from VAT. Similar reasoning suggests that eliminating customs tariffs on food products does not substantially affect the consumption basket of the poor.

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[17] In 2001, for example, 96% of agricultural goods were produced by the informal sector.

Returning to the impact of the cash transfer policy, breaking down the results by rural/urban areas of residence for children shows that the impact of this policy differs substantially between rural and urban areas (figures 15 and 16). The full potential of the beneficial effects of this policy are seen in rural areas: it not only completely counters the increase in poverty caused by the crisis, but even reduces the number of children in monetary poverty to lower than it would have been if the crisis had never happened, by 3.32% in 2008, 1.69% in 2009, 1.42% in 2010, and 1.45% in 2011. In urban areas (where the negative effects of the crisis on child poverty are strongest over 2009-2011), however, the transfer policy reduces monetary poverty among children, but does not completely eliminate the additional number of children who are poor due to the crisis. It reduces this number by about 60% in 2009, 2010 and 2011.

This differentiated impact of the policy response between rural and urban areas can be explained by at least two factors: 1) the negative effects of the crisis are stronger in urban areas than in rural areas, in terms of poverty worsening; 2) the cost of living is higher in urban areas than in rural areas. In addition to this remark, it should also be pointed out that the amount of the transfer in relation to the average consumption of poor households is higher in rural areas than in urban areas, regardless of whether or not the cost of living is taken into account. The policy is therefore more effective at lowering the number of children living in monetary poverty in rural areas. This finding suggests that instead of distributing the same nominal amount of transfer to every recipient, it is important to find an optimal allocation of the national transfer budget.

Figure 15: Impact of targeted cash transfers, national and by urban/rural areas *(changes in the absolute contribution to child poverty with respect to the no crisis scenario, in percentage points)*
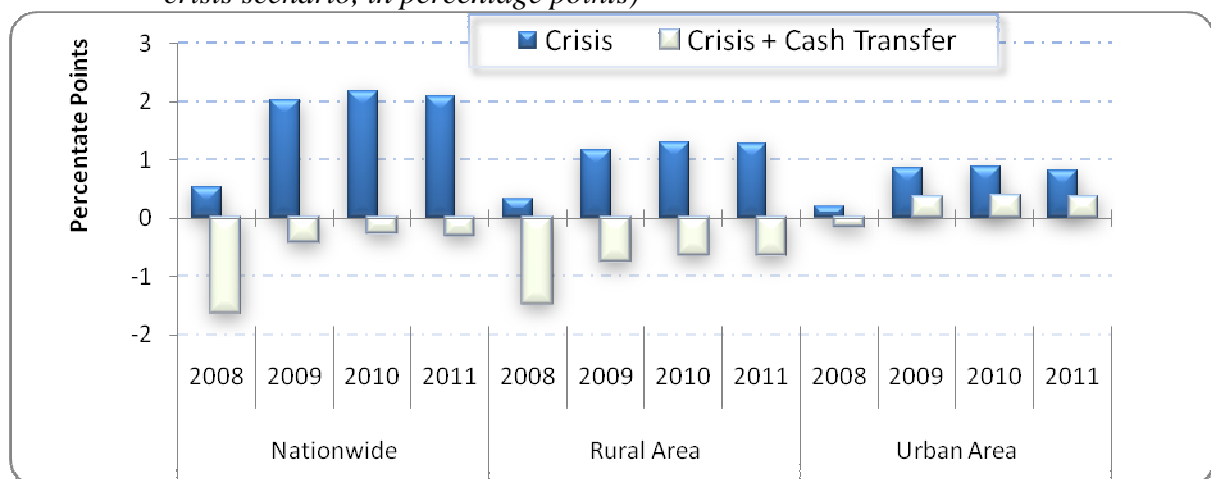
Source: Authors' calculations using the results of the simulations.

Figure 16: Impact of targeted cash transfer policy, national and by urban/rural areas
(relative changes in the number of poor children in each area, with respect to the no crisis scenario, in percentage points)
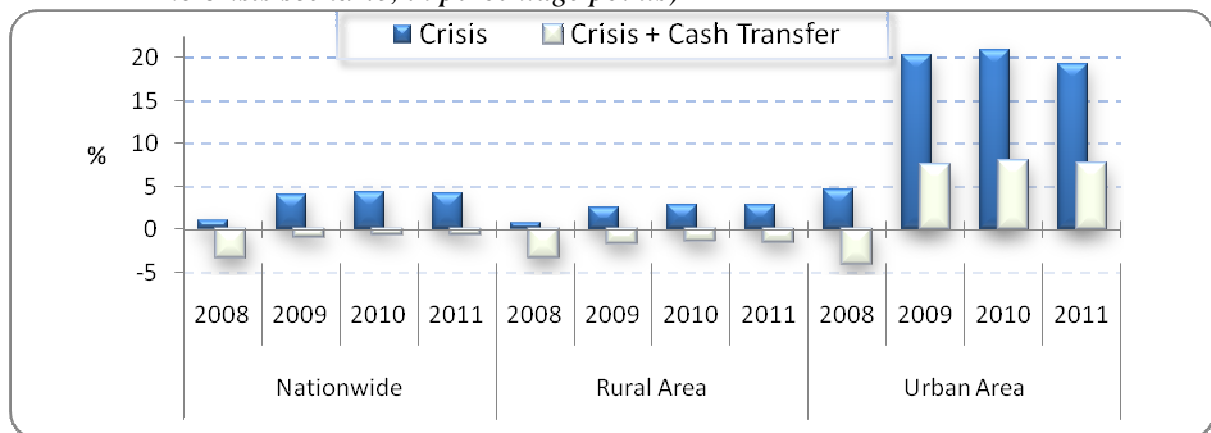
Source: Authors' calculations using the results of the simulations.

Beyond the differentiation between rural and urban areas, it would be ideal for the impacts of the policy response to be harmonized spatially across regions or other territorial and administrative subdivisions of the country. Indeed, the disparity in the effects of the crisis and policy responses is also seen at the regional level (figures 17 and 18; tables a7 and a8).

The cash transfer policy applied across-the-board completely counters the increase in monetary poverty generated by the crisis in 9 of the 12 regions, even leading to a slight decline in poverty compared to the reference scenario. In the other three regions, the transfer is not enough to completely counteract the effects of the crisis on monetary poverty. These transfers reduce the additional number of poor children resulting from the crisis by 60% in the Centre region, but this reduction rate is less than 20% in Yaoundé and Douala.

Figure 17: Change in the absolute contribution of regions to monetary poverty among children with respect to the no crisis scenario in 2011
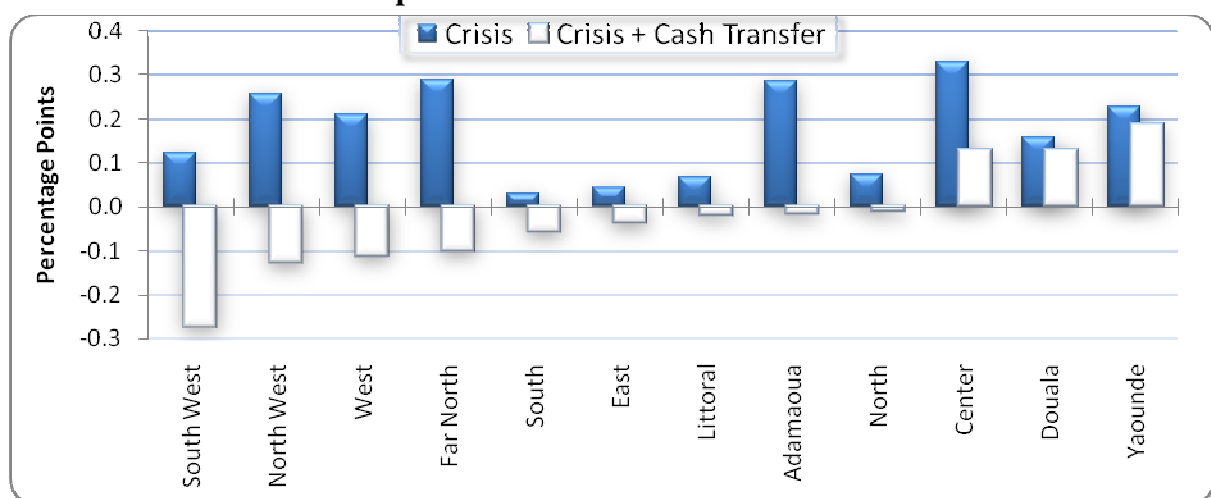
Source: Authors' calculations using the results of the simulations.

Figure 18: **Change in the number of poor children in each region with respect to the no crisis scenario in 2011**
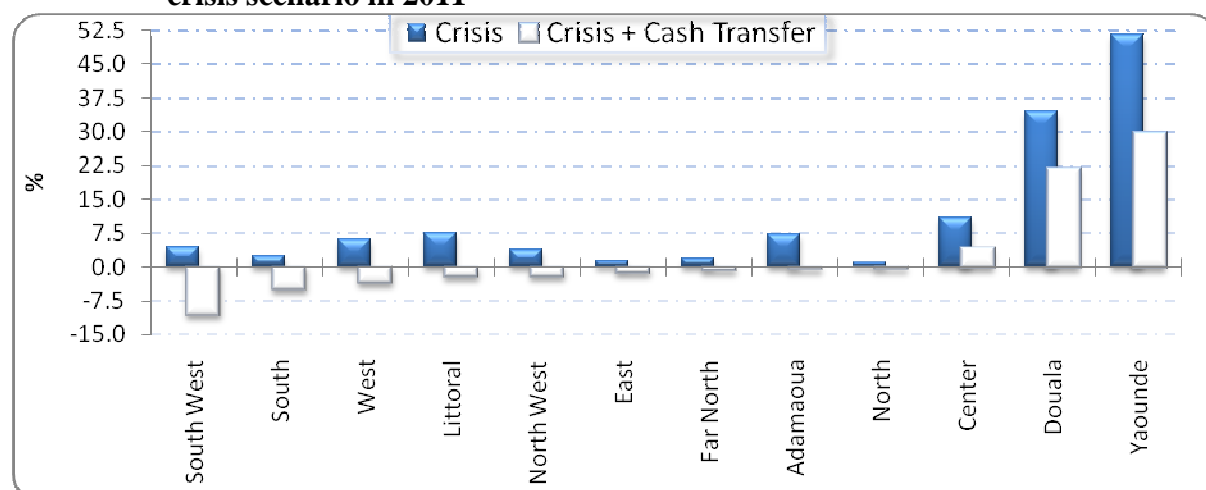
Source: Authors' calculations using the results of the simulations.

If the principle of equalizing the positive impacts of the transfers in order to bring the same number of children out of poverty[18] was adopted, the size of the transfers would have to be reduced in the South West, North West, West, Far North, South and East, in order to increase the grants allocated to poor households in the Centre, Douala and Yaoundé (figure 17; table a7). However, if the beneficial effects of the transfers were levelled to achieve the same reduction in monetary poverty rate (with respect to the no crisis scenario) in each region, the South West, South and West are the regions which would have to be tapped to increase funds distributed to Centre, Douala and Yaoundé (figure 18; table a8).

In fact, several alternative criteria for harmonization can be used depending on the prioritization of goals within the general poverty reduction strategy. For example, the "depth of poverty" can be used as a criterion for harmonizing the effects of the policy response, if the priority is to reduce the existing gap between average expenditures among poor children and the minimum amount necessary to exit poverty (corresponding to the poverty line). Similarly, the impact on the "severity of poverty" can act as a criterion to harmonize the spatial effects of the policy, if equity among poor children is considered as an effective performance indicator.

Currently, Cameroon does not have an institutional mechanism or a logistical system dedicated to implementing short term transfer policies to benefit a given type of household, as suggested above. Even if the principle of cash transfers is maintained, simply putting these prerequisite institutions into place would require time and considerable financial resources. An alternative to the targeted transfer policy, at least in the short term, would be a universal transfer, which is relatively less complex to put into action, and has a higher cost-effectiveness.

In this study, along with the scenario of the targeted transfers, we also simulate a variant of the universal transfer consisting of distributing the same amount to all children from 0 to 5 years old, regardless of whether or not they are poor. The total budget for the distribution

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[18] A uniform decline in the absolute contribution.

programme is the same as the targeted transfer described above, where only (predicted) poor children from 0 to 14 years old and their families are intended to be the beneficiaries. In Cameroon, the universal transfer policy in these conditions amounts to distributing about 29300 CFA francs (in 2007 terms) per year to each child aged 0 to 5, with a total budget equivalent to 1% of before-crisis GDP. As for the targeted transfer programme, it is also assumed that the transfer is given to the household head, who ensures an equitable distribution among household members.

Table 24 shows that the simulated universal transfer scenario is also very efficient for reducing child poverty, and results in very similar poverty rates to the targeted transfer scenario considered in the study. The poverty rates are only slightly higher in the universal transfer scenario if we consider children aged 0 to 14 (a difference of 0.2 to 0.5 percentage points); but is slightly lower in that scenario within the 0 to 5 year age group (a difference of 0.4 to 0.5 percentage points).

Table 24: Child monetary poverty rate under a universal cash transfer vs a targeted cash transfer, by different age groups

Age group/base poverty rate	Year	Crisis scenario	Crisis + targeted transfer to (predicted) poor children aged 0 to 14	Crisis + universal transfer to benefit all children aged 0 to 5
Children from 0 to 14 years. Poverty rate in the base year: 50.2%	2009	52.1	49.6	50.1
	2010	52.2	49.8	50.2
	2011	52.2	49.8	50.0
Children from 0 to 5 years. Poverty rate in the base year: 47.4%	2009	49.4	46.9	46.5
	2010	49.5	47.0	46.6
	2011	49.5	47.1	46.5

Source: Authors' calculations.

6.2.2. Impact of policy responses on caloric poverty

The simulations show that the effects of the school feeding policy and especially that of the cash transfers are highly effective at reducing caloric poverty and go beyond the simple goal of curbing additional caloric poverty associated with the crisis (figure 19).

In the case of the transfers, the rate of caloric poverty among children declines to 31.19% in 2008, 31.54% in 2009, 31.53% in 2010, and 31.34% in 2011. With respect to the no crisis scenario, this amounts to a reduction of 4.64 percentage points in 2008, 4.05 in 2009, 3.84 in 2010, and 3.70 in 2011; the total decline of the number of children in caloric poverty at the national level is 12.95% in 2008, 11.37% in 2009, 10.85% in 2010, and 10.57% in 2011.

As mentioned above, the school feeding programme also has satisfactory results, although the impact is relatively small compared to those induced by the transfers. Indeed, with respect to the reference scenario, this policy response lowers the national rate of child caloric poverty by 2.93 percentage points in 2008, 2.39 points in 2009, 2.26 in 2010, and 2.04 in 2011 (figure 19), for an 8.3% reduction in the number of children in a state of caloric poverty in 2008, 6.7% in 2009, 6.3% in 2010, and 5.7% in 2011.[19]

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[19] See table a4 for specific details on the districts which benefit from the programme.

Figure 19: Change in child caloric poverty rate, by alternative policy responses compared to the crisis
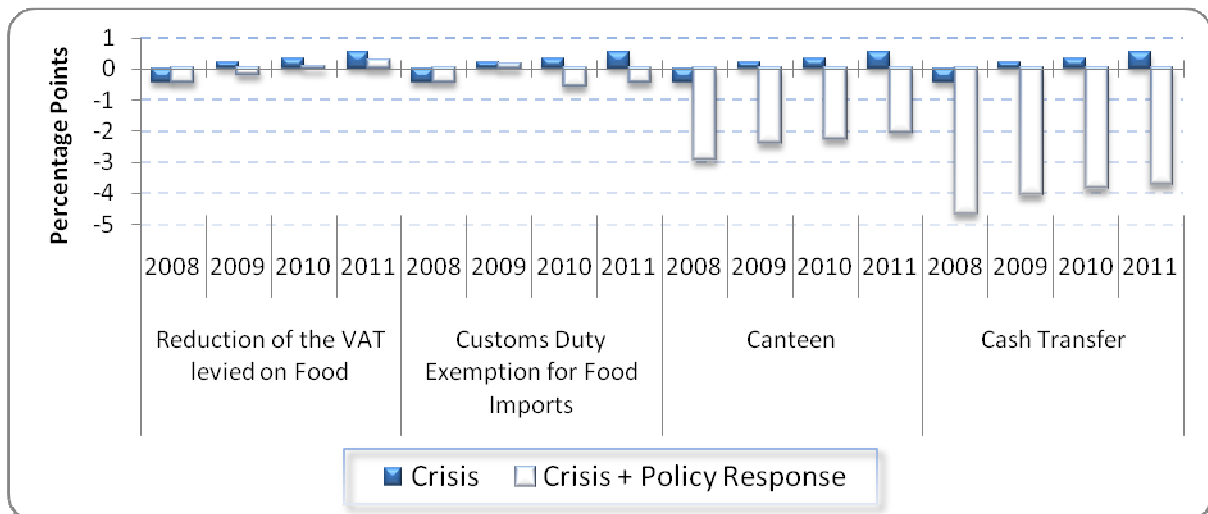
Source: Authors' calculations using the results of the simulations.
Note: The changes are expressed with respect to the no crisis scenario.

The effectiveness of the two other policies (VAT subsidy; elimination of customs tariffs on food products) is qualified, in that these last two do not bring a substantial reduction in caloric poverty and they only counter the effects of the crisis on caloric poverty for some of the years in the period being studied. The VAT food subsidy appears to be the most ineffective of these two policies *vis-à-vis* the goal of reducing caloric poverty. The likely reasons for the inefficiency of the two policy responses on the reduction in monetary poverty, as mentioned above, remain valid to explain the inefficiency of these policies in reducing caloric poverty.

Spatially, we find that the improvement at the national level induced by the transfer policies does not benefit every region equally, and does not bring benefits to four of the twelve regions (figures 20 and 21; tables a9 and a10). This policy is found to be ineffective at completely eliminating the increase in child caloric poverty generated by the crisis in Yaoundé and Douala. The level of caloric poverty in the Littoral and South regions remains unchanged, not only following the crisis but also after the distribution of transfers. Since the transfers are distributed equally, the eight other regions see a decline in the rate of poverty, not only below the rate in the crisis scenario, but even lower than the level seen in the case where there had not been a crisis. The reduction in the number of children in caloric poverty in these eight regions is estimated as ranging from 8.5% in Adamaoua to 43.4% in the East region.

This spatial disparity of the effects of the transfers on caloric poverty draws attention to the need, as seen above, to calibrate the size of the transfers distributed to poor households according to factors which are pertinent for both urban and rural children, but also according to the priorities defined by the general policy of reducing poverty at the national level.

Figure 20: Change in child caloric poverty in each region with respect to the crisis scenario in 2011
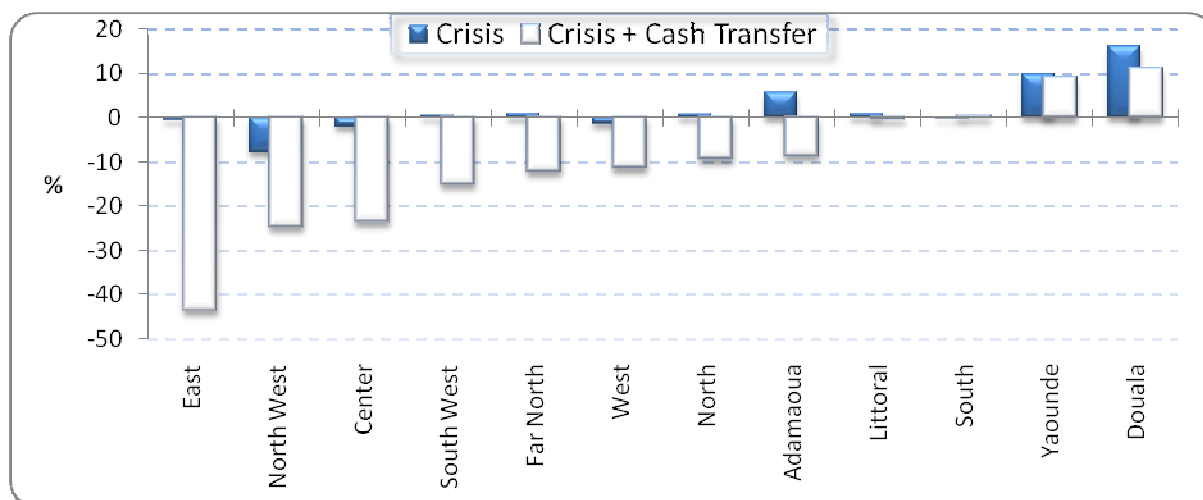
Figure 21: Change in the absolute contribution of the regions to child caloric poverty with respect to the no crisis scenario in 2011
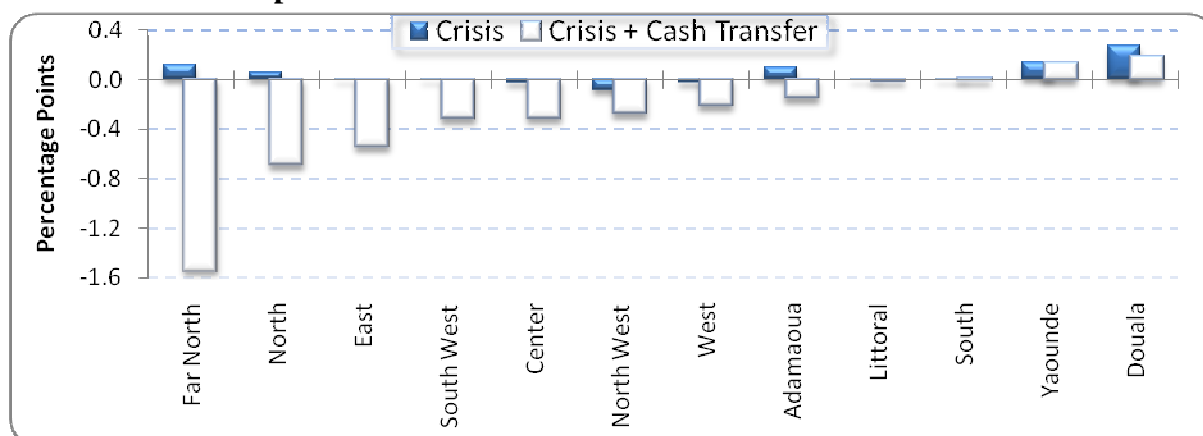
6.2.3. Impact of policy responses on children's school and labour participation rates

Much like the crisis itself, the simulated policy responses do not have a notable effect on the school participation rate or on children's rate of participation in labour (table 25). While the magnitude of the changes of these indicators is almost zero, the simulation results still show the direction of policy-induced change for these indicators compared to the effects of the crisis.

Thus, while six out of ten thousand children (in the 6-10 age group) quit school due to the crisis each year between 2009 and 2011, the transfer policy leads to an increase in the number of school children by 7-8 children for each ten thousand who were already in school from 2008 to 2011 (thus corresponding to an improvement of 10-13 children in ten thousand each year thanks to the transfers in comparison to the crisis scenario without any policy). The other policies do not have more significant impacts.

Table 25: Impact of policy responses on children's participation in school and labour
(difference in % points with respect to the no crisis scenario)

Age group / Year		Crisis		Crisis + VAT food subsidy		Crisis + Elimination of food customs tariffs		Crisis + Transfers	
		Student	Labourer	Student	Labourer	Student	Labourer	Student	Labourer
Age 6-10	2008	−0.02	0.00	0.00	0.00	−0.08	0.01	0.08	−0.01
	2009	−0.06	0.00	0.01	0.00	−0.08	0.01	0.07	−0.01
	2010	−0.06	0.00	0.01	0.00	−0.07	0.01	0.07	−0.01
	2011	−0.06	0.00	0.01	0.00	−0.07	0.01	0.07	−0.01
Age 11-14	2008	0.00	0.00	0.00	0.00	−0.01	0.00	0.01	0.00
	2009	−0.01	0.00	0.00	0.00	−0.01	0.00	0.01	0.00
	2010	−0.02	0.00	0.00	0.00	−0.01	0.00	0.01	0.00
	2011	−0.02	0.00	0.00	0.00	−0.01	0.00	0.01	0.00

Source: Authors' calculations using the results of the simulations.

Table 26: Impact of the policy responses on children's access to medical care *(difference in % points with respect to the no crisis scenario)*

Scenario	Year	Change in children's overall consultation rate	Variation of the share of children consulting each type of medical facility					
			1	2	3	4	Modern facility (1+2+3)	Traditional or informal facility (4)
Crisis	2008	−0.20	−0.81	0.02	−0.36	0.23	−0.10	0.23
	2009	−0.74	−2.89	0.11	−1.24	0.74	−0.30	0.74
	2010	−0.80	−3.28	0.10	−1.41	0.89	−0.37	0.89
	2011	−0.77	−3.19	0.08	−1.42	0.90	−0.37	0.90
Crisis + food VAT reduction	2008	−0.20	−0.81	0.02	−0.36	0.23	−0.10	0.23
	2009	−0.65	−2.48	0.12	−1.06	0.58	−0.24	0.58
	2010	−0.70	−2.84	0.10	−1.21	0.74	−0.31	0.74
	2011	−0.66	−2.72	0.08	−1.20	0.76	−0.31	0.76
Crisis + elimination of food customs tariffs	2008	−0.20	−0.81	0.02	−0.36	0.23	−0.10	0.23
	2009	−0.75	−2.90	0.12	−1.24	0.71	−0.29	0.71
	2010	−0.65	−2.59	0.11	−1.10	0.64	−0.26	0.64
	2011	−0.61	−2.44	0.09	−1.09	0.65	−0.27	0.65
Crisis + cash transfers	2008	0.67	−0.01	−0.29	−0.37	0.63	−0.26	0.63
	2009	0.22	−1.86	−0.22	−1.16	1.12	−0.46	1.12
	2010	0.17	−2.24	−0.24	−1.33	1.28	−0.53	1.28
	2011	0.19	−2.14	−0.26	−1.35	1.31	−0.54	1.31

Source: Authors' calculations using the results of the simulations.

Note: 1 =   First class hospitals; Provincial hospitals
2 =   District hospitals and medical centres; Integrated health centres/health centres; House visits by a doctor or health worker
3 =   Pharmacy; Clinic / medical office; School infirmary; at the workplace; Health CIG/NGO
4 =   Traditional healer; Informal vendor of modern medicine; Other.

6.2.4. Impact of policy responses on children's access to medical care

The transfer policy is the only one which completely counters the small decline in the consultation rate brought about by the crisis (table 26). But, none of the simulated policies

decreases the use of traditional and informal services, nor leads to an increase in the use of modern facilities which are expected to deliver higher quality medical care.

However, the transfer policies which carry relatively better impacts in terms of the increase in the consultation rate and attenuation of the declining use of first class hospitals, leads to a larger increase in consultation of medical facilities which are deemed to be of inferior quality (traditional healers and informal vendors of modern medicine). This can be explained by the fact that many of the households among the transfer recipients are accustomed to consulting this type of medical service for various reasons. Presumably other policies tend to reduce the share of medical consultations among traditional and informal medical facilities because they are more focused on households whose demand for medical care is more oriented towards modern facilities, or they live in areas where there is a greater supply of formal and modern medical care.

7. CONCLUSION

The results of this study show that the simulated effects of the world economic crisis are real and pernicious in Cameroon, both in terms of deteriorating macroeconomic indicators as well as aggravating child poverty. Under the effects of the crisis, the real GDP growth rate would lose 0.4 percentage points in 2008, 1.3 in 2009, 0.9 in 2010, and 0.8 in 2011. Growth in the child monetary poverty rate, due to the crisis, is predicted to be 0.52 percentage points in 2008, 2.02 points in 2009, 2.17 in 2010, and 2.09 in 2011 in comparison to the reference scenario. This represents, according to monetary criteria for poverty, an increase in the number of poor children of 1.05% in 2008, 4.04% in 2009, 4.34% in 2010 and 4.18% in 2011, compared to the no crisis situation. The number of poor children in caloric terms would increase by 0.56% in 2009, 1.08% in 2010, and 1.60% in 2011 with respect to the no crisis scenario.

In the search for possible options to curb the crisis' harmful effects on children, four policy scenarios are simulated in the study: the first scenario involves foreign aid given to the government, equivalent to 1% of Cameroon's initial GDP, which is entirely used to subsidize an equivalent reduction in the VAT levied on food goods. The second is an elimination of customs tariffs applied to imports of food products and compensation for lost revenue – equal to 0.4% of base year GDP – using the government's foreign reserves. The third is to allow children under the age of 15 to have free access to school canteens in districts where the monetary poverty rate is higher than the national average, using a government subsidy covered by foreign aid equivalent to 0.19% of initial GDP. The final policy response scenario consists of distributing cash transfers to households with poor children; the total amount of the transfer is equal to 1% of Cameroon's before-crisis GDP and is supported by international aid.

The results of the simulations show that, in terms of reducing poverty, the cash transfer to poor households is the most effective of the four simulated policy responses, while it is the least effective at improving the real GDP growth rate. At the national level, the transfer policy fully counters the increase in monetary and caloric poverty resulting from the crisis

over the entire study period. Moreover, it leads to a sizeable fall in these two dimensions of poverty compared to their levels in the absence of the crisis. Following this policy, the number of children in monetary poverty at the national level is 3.38% lower than in the reference scenario in 2008. This reduction is 0.86% in 2009, 0.56% in 2010, and 0.62% in 2011. The beneficial effects of the transfers are also larger in terms of caloric poverty: with respect to the reference scenario, the total number of children in caloric poverty falls by 12.95% in 2008, 11.37% in 2009, 10.85% in 2010, and 10.57% in 2011. While the impacts of the crisis and policy responses on children's participation in school and work are very small, it still appears that the results of the transfer policy are somewhat better than those of the other policies. Furthermore, this policy is the only one that completely counters the small decline in the rate of medical consultation engendered by the crisis, although it leads to a larger increase in the rate of consultation of medical facilities which are deemed to be of inferior quality (traditional healers and informal vendors of modern medicine).

Despite its regional character, after the cash transfer policy, the school canteen subsidy comes in second place in terms of its effects on reducing child poverty. This policy response especially restrains caloric poverty, reducing the number of children who were in a state of caloric poverty in the reference scenario by 8.3% in 2008, by 6.7% in 2009, 6.3% in 2010, and by 5.7% in 2011. But it only reduces the number of children brought into monetary poverty by the crisis by a quarter. It is also important to note that the school canteen subsidy policy is highly cost-effective as it costs only 0.19% of before-crisis GDP.

A spatial analysis can highlight the disparity of the effects of the crisis and the policy responses according to regions or for rural versus urban areas. It also shows that the improvements induced by the transfer policy (and to some extent, by the school canteen subsidy) across the country do not carry the same benefits for every area, and some of the 12 regions do not see any benefits (at least in terms of headcount poverty ratios). This suggests that it is necessary to find an optimal distribution of the total transfer budget which takes into account relevant characteristics of poor children's living environments, in order to ensure that the impacts of the policy are harmonized across the country, according to the priorities defined by the national policy of poverty reduction.

It is also important to note that Cameroon does not presently have the logistical and administrative framework that would be required to implement a transfer policy targeted to benefit specific households. The study shows that as an alternative to a targeted transfer policy, universal transfers are relatively less complex to implement and could be used effectively, at least on a purely transitory basis.

Ultimately, by highlighting the preeminence of the cash transfer policy as a policy response to counter the immediate and direct effects on vulnerable target populations such as poor children, this study also recommends the establishment of a system to ensure effective and timely delivery, when needed, of such a policy across the national territory.

REFERENCES

BAD (Banque Africaine de Développement) (2006) *Rapport sur le Développement en Afrique 2006*. Banque Africaine du Développement, Economica, Paris.

Barrel, R., D. Holland and D.W. Te Velde (2009) *A Fiscal Stimulus to address the Effects of the Global Financial Crisis on Sub-Sahara Africa*, Overseas Development Institute (ODI), London.

Bibi, S., J. Cockburn, I. Fofana and L. Tiberti (2010), "Impacts of the Global Crisis and Policy Responses on Child Well-Being: A Macro-Micro Simulation Framework", *Innocenti Working Paper,* No. 2010-06, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Bibi, S., J. Cockburn, M. Coulibaly and L. Tiberti (2009) 'The impact of the increase in food prices on child poverty and the policy responses in Mali', *Innocenti Working Paper*, No. 2009-02, UNICEF Innocenti Research Centre, Florence.

CEA (Commission Economique des Nations-Unies pour l'Afrique) (2007) *Rapport Économique sur l'Afrique*, Commission Economique des Nations-Unies pour l'Afrique, Addis Abeba.

Cockburn, J., I. Fofana and L. Tiberti (2010) 'Simulating the Impact of the Global Economic Crisis and Policy Responses on Children in West and Central Africa', *Innocenti Working Paper,* No. 2010-01, UNICEF Regional Office for West and Central Africa, Dakar, and UNICEF Innocenti Research Centre, Florence.

Emini, C.A., J. Cockburn and B. Decaluwé (2005) "The Poverty Impacts of the Doha Round in Cameroon: The Role of Tax Policy", chapter 12 in T. Hertel and A. Winters (eds.) (2005), *Poverty and the WTO: Impacts of the Doha Development Agenda*, Palgrave Macmillan and The World Bank.

Essama-Nssah, B., D. Go, M. Kearney, V. Korman, S. Robinson, K. Thierfelder (2007) "Economy-wide and Distributional Impacts of an Oil Price Shock on the South African Economy", *Policy Research Working Paper* 4354, The World Bank, Washington DC

Foster, J., J. Greer, and E. Thorbecke (1984) "A Class of Decomposable Poverty Measures," *Econometrica*, 52: 761-766.

Griffith-Jones, S. and J.A. Ocampo (2009) "The Financial Crisis and its Impact on Developing Countries", *Working Paper,* No. 53, International Centre for Inclusive Growth, Brasilia.

Harper, C., N. Jones, A. McKay and J. Espey (2009) "Children in times of economic crisis: Past lessons, future policies", *ODI Background Note*, Overseas Development Institute (ODI), London.

International Monetary Fund (2009a) *World Economic Outlook 2009: Crisis and Recovery*, April, World Economic and Financial Surveys, International Monetary Fund, Washington, D.C.

International Monetary Fund (2009b) *Regional Economic Outlook: Sub-Saharan Africa,* October, World Economic and Financial Survey, International Monetary Fund, Washington D.C.

International Monetary Fund (2009c) *Country Report* No 09/318, International Monetary Fund, Washington D.C.

International Monetary Fund (2010a) Word prices indexes, International Monetary Fund, Washington, D.C. (see website "Index Mundi": http://www.indexmundi.com/)

International Monetary Fund (2010b) *World Economic Outlook Update*, January, World Economic and Financial Surveys, International Monetary Fund, Washington, D.C.

Institut National de la Statistique (2008a) *Troisième enquête camerounaise auprès des ménages (ECAM3). Tendances, profil et déterminants de la pauvreté au Cameroun entre 2001-2007*, Institut National de la Statistique, Yaoundé.

Institut National de la Statistique (2008b) *Annuaire statistique du Cameroun 2008*, Institut National de la Statistique, Yaoundé.

Institut National de la Statistique (2009) *Tableau Ressources-Emplois 2007 du Cameroun*, Institut National de la Statistique, Yaoundé.

Kekic, L. (2009) "The global economic crisis and FDI flows to emerging markets", Columbia FDI Perspectives, No. 15, October 8, 2009, *Perspectives on topical foreign direct investment issues*, reprinted with permission from the Vale Columbia Center on Sustainable International Investment (www.vcc.columbia.edu).

MINEPAT (Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire) (2009) *Cadrage macroéconomique dynamique du Compte d'opérations financières*, Ministère de l'Economie, de la Planification et de l'Aménagement du Territoire, République du Cameroun, Yaoundé.

OECD (2010) Statistical Annex of the *2010 Development Co-operation Report,* Tables updated on 8 December 2009. See: http://www.oecd.org/document/9/0,3343,en_2649_34447_1893129_1_1_1_1,00.html.

Pongou, R., J.A. Salomon and M. Ezzati (2006) "Health Impacts of Macroeconomic Crises and Policies: Determinants of Variation in Childhood Malnutrition Trends in Cameroon", *International Journal of Epidemiology*, 35: 648-656.

Ratha, D., S. Mohapatra and A. Silwal (2009) "Migration and Remittance Trends 2009. A better-than-expected outcome so far, but significant risks ahead", *Migration and Development Brief*, No. 11, November 2009, Migration and Remittances Team Development Prospects Group, The World Bank, Washington, D.C.

Robilliard, A.S., F. Bourguignon and S. Robinson (2008) "Examining the Social Impact of the Indonesian Financial Crisis Using a Macro-Micro Model", in Bourguignon, F., M. Bussolo, and L. A. Pereira da Silva (*eds.*) (2008) *The Impact of Macroeconomic Policies on Poverty and Income Distribution: Macro-Micro Evaluation Techniques and Tools*, Macmillan Publishers.

Te Velde, D.W. (2008) "The Global Financial Crisis and Developing Countries. Which countries are at risk and what can be done?", *Background Note*, Overseas Development Institute (ODI), London.

United Nations Development Programme (2009) *Consolidated Reply/Impact of the Financial Crisis and Responses by Developing Countries*, paper prepared by UNDP Bureau for Development Policy, Poverty Group/Poverty Reduction Network, New York.

World Bank (2009a) "Swimming Against the Tide: How Developing Countries Are Coping with the Global Crisis", *Background Paper* prepared by World Bank Staff for the G20 Finance Ministers and Central Bank Governors Meeting, Horsham, United Kingdom on March 13-14, 2009 The World Bank, Washington, D.C.

World Bank (2009b) "Crisis Hitting Poor Hard in Developing World", *World Bank News Release* No: 2009/220/EXC, The World Bank, Washington, D.C.

World Bank (2009c) *World Development Indicators Database*. The World Bank, Washington, D.C.

World Bank (2009d) "World Bank staff estimates of Workers' remittances, compensation of employees, and migrant transfers, based on the International Monetary Fund's Balance of Payments Statistics Yearbook 2008",.The World Bank, Washington, D. C.

ANNEXES

Figure a1: Monthly change of the world oil price index from January 2005 to September 2009
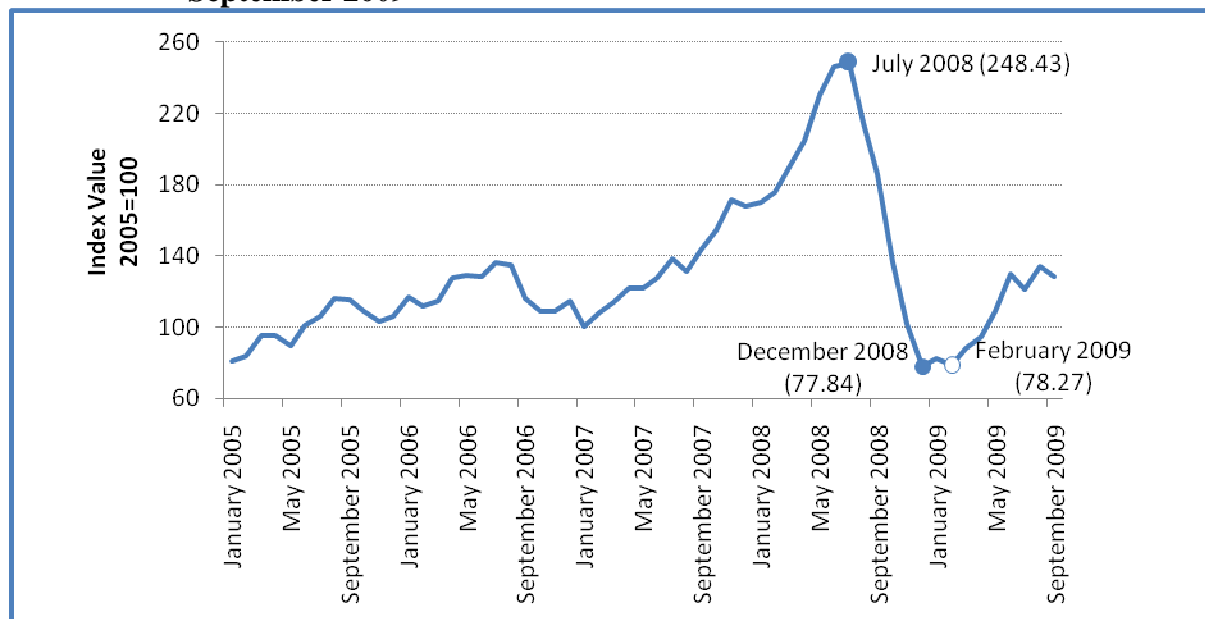
Source: IMF (2010a).

Figure a2: Monthly change of the world non-oil products price index from January 2005 to September 2009
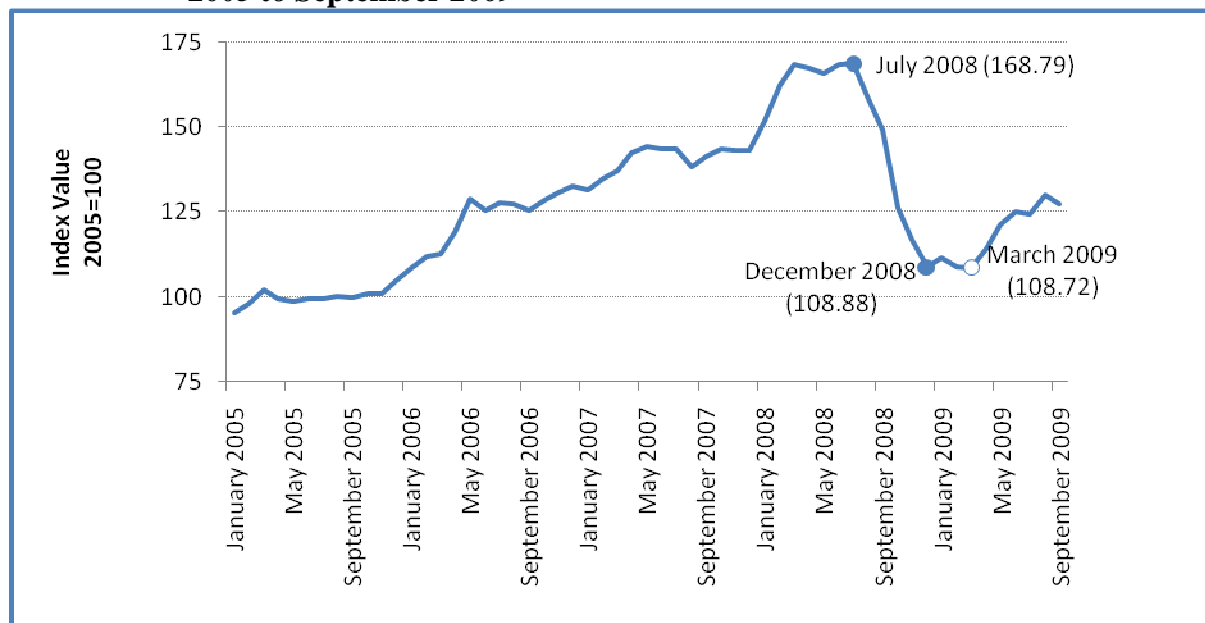
Source: IMF (2010a).

Figure a3: Monthly change of the world primary agricultural materials price index from January 2005 to September 2009
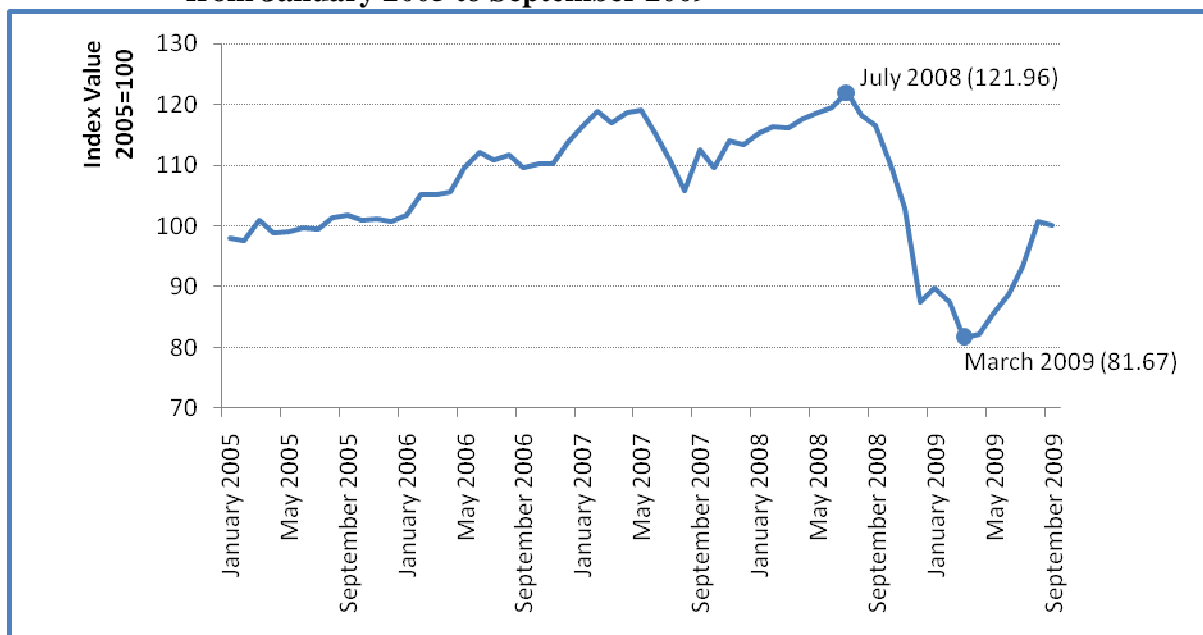
Note: These primary materials include cotton, wool, wood and rubber.

Figure a4: Monthly change in the world food price index from January 2005 to September 2009

Note: The food goods included are cereals, vegetable oils, meat and fish, sugar, bananas and oranges.
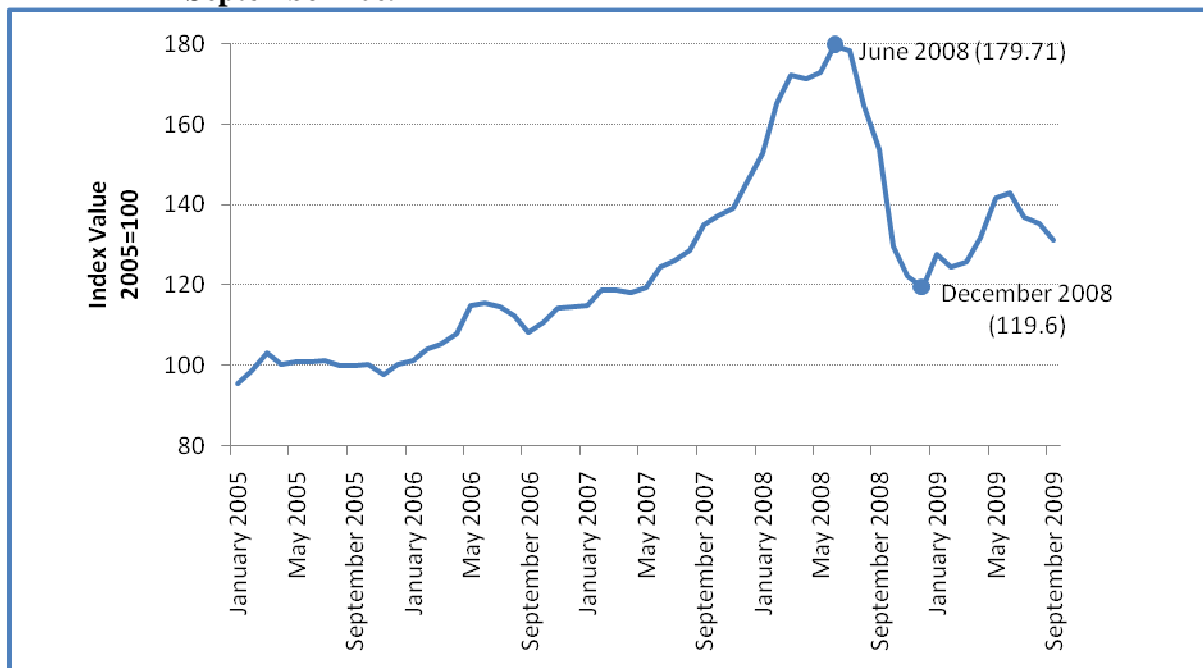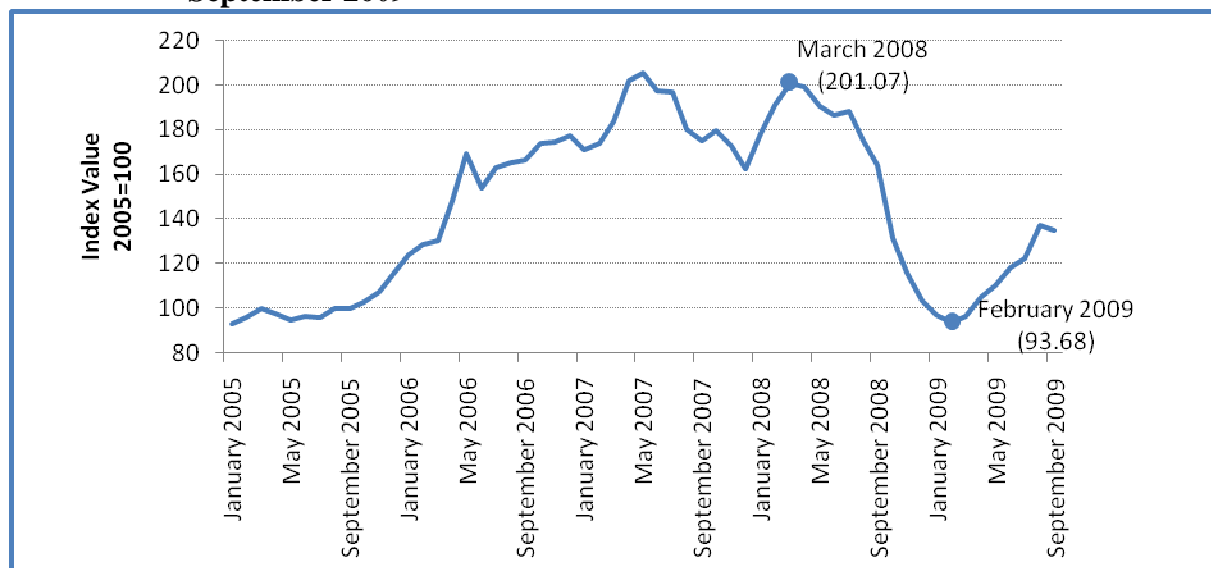
Figure a5: Monthly change in the world metals price index from January 2005 to September 2009

Source: IMF (2010a).

Note: The metals included are aluminium, copper, iron, lead, zinc, nickel and uranium.

Table a1: Estimation of changes (%) of world prices in the crisis scenario

Products	Share in 2007 of total		Correspondence with products in the IMF database, on the change in world prices of goods	Changes in world prices (*)						
	exports	imports		2nd half 2008	1st half 2009	2nd half 2009	1st half 2010	2nd half 2010	1st half 2011	2nd half 2011
Foodstuffs agriculture	1.37	0.37	Maize (corn), rice, barley, wheat, peanuts, orange	−30.5	−28.9	−6.4	3.5	4.6	4.4	4.2
Cash crops agriculture	4.81	0.00	Cotton, cocoa, coffee arabica, coffee robusta, plam oil, banana	−24.3	−0.6	5.7	3.8	2.7	2.7	2.6
Livestock and hunting	0.02	0.00	Lamb, chicken, beef, pork	−5.8	−9.7	4.3	1.4	1.9	1.9	1.9
Forestry and sylviculture	2.18	0.10	Hides, logs	4.8	−7.4	−3.6	1.1	1.1	1.1	1.1
Fisheries and aquaculture	0.00	0.00	Seafood	−11.5	7.0	−10.4	−0.7	−0.6	−0.6	−0.6
Hydrocarbons	41.74	26.48	Crude oil	−33.6	−39.7	38.2	6.2	4.5	4.3	4.1
Other extraction products	0.01	1.93	Metal price	−23.1	−27.2	39.7	8.1	5.7	5.4	5.1
Meat and Fish	0.23	2.20	Meat and sea foods	−7.0	−8.8	4.6	1.3	1.7	1.7	1.6
Grains and starches	0.00	4.80	Cereals	−23.8	−14.7	−3.8	1.2	2.4	2.4	2.3
Cocoa, coffee, tea and processed sugar	0.89	1.07	Beverages, sugar	−12.0	−8.1	12.1	3.4	2.9	2.8	2.8
Oilseeds and animal feed	0.02	0.50	Vegetable oil	−22.9	−29.5	7.1	4.5	3.5	3.3	3.2
Cereal products	0.02	0.16	Cereals	−23.8	−14.7	−3.8	1.2	2.4	2.4	2.3
Milk, fruit or vegetable-based products	0.34	1.92	Food-price-index-120	−22.8	−10.8	6.0	3.0	2.7	2.6	2.6
Drinks	0.31	1.46	Food-price-index-120	−22.8	−10.8	6.0	3.0	2.7	2.6	2.6
Tobacco	0.04	0.38	Agriculture raw material	−8.3	−22.5	17.7	2.4	1.1	1.1	1.1
Textiles and clothing	0.49	2.73	Commodity Industrial Inputs Price Index	−15.9	−26.6	26.6	5.8	4.1	3.9	3.8
Leather and footwear	0.00	0.16	Commodity Industrial Inputs Price Index	−15.9	−26.6	26.6	5.8	4.1	3.9	3.8
Wood industries excluding furniture	15.81	0.03	Wood	−4.5	−5.8	−8.5	1.9	2.1	2.1	2.0
Paper and paper articles	0.02	2.37	Wood, hides, logs	−4.5	−5.8	−8.5	1.9	2.1	2.1	2.0
Refined oil, coking	12.29	1.82	Petroleum	−33.6	−39.7	38.1	6.2	4.5	4.3	4.1
Chemical products	0.37	9.91	Non-fuel-price-index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Rubber and plastic products	2.21	1.02	Rubber	−27.1	−32.8	30.1	8.3	5.5	5.2	4.9
Non metal mineral products	0.61	1.70	Commodity Industrial Inputs Price Index	−15.9	−26.6	26.6	5.8	4.1	3.9	3.8
Base metal products	5.39	7.58	Metals	−23.1	−27.2	39.7	8.1	5.7	5.4	5.1
Electrical machinery	0.09	12.94	Commodity Industrial Inputs Price Index	−15.9	−26.6	26.6	5.8	4.1	3.9	3.8
Audio visual equipment	0.03	1.30	Commodity Industrial Inputs Price Index	−15.9	−26.6	26.6	5.8	4.1	3.9	3.8
Transport equipment	0.05	5.65	Metals	−23.1	−27.2	39.7	8.1	5.7	5.4	5.1
Furniture, products from various industries	0.02	0.43	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Construction	0.00	0.02	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Restaurants and hotels	0.46	0.47	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Transport, storage and communication	5.20	3.88	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Post and telecommunications	0.23	0.27	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Financial services	1.28	1.80	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
Business services	3.47	4.54	Commodity prices index	−17.0	−16.7	14.1	4.0	3.0	2.9	2.9
SHARE OF EXPORTS	**100.00**	**-**		**−24.5**	**−27.5**	**24.2**	**5.1**	**3.8**	**3.7**	**3.5**
SHARE OF IMPORTS	**-**	**100.00**		**−22.5**	**−26.1**	**25.2**	**5.3**	**4.0**	**3.8**	**3.7**

Source: IMF (2010a).

Note: (*) Empirical datas for 2008 to 2009; our forecasts for 2010 to 2011.

Table a2: Results of the *"proxy-means"* regression to identify the poor in Cameroon, by urban and rural areas

	Urban		Rural	
Regions				
Douala	0.000		0.000	
Yaoundé	0.054	***	0.000	
Adamaoua	−0.170	***	−0.177	***
Centre	−0.166	***	−0.121	***
East	−0.102	***	−0.178	***
Far North	−0.088	***	−0.326	***
Littoral	−0.347	***	−0.053	***
North	−0.143	***	−0.263	***
North West	−0.359	***	−0.348	***
West	−0.116	***	0.015	
South	−0.049	***	0.000	
South-West	−0.140	***	−0.079	***
hh_ageabove14	−0.058	***	−0.053	***
hh_agebelow15	−0.097	***	−0.052	***
Toilet	0.120	***	0.106	***
Floor	0.094	***	0.117	***
Wall	0.122	***	0.080	***
Roof	0.110	***	0.170	***
Electricity	0.273	***	0.156	***
Water	0.250	***	0.297	***
n_rooms	0.017	***	0.092	***
Automobile	0.551	***	0.660	***
Motorcycle	0.188	***	0.306	***
Distance	0.025	**	0.034	***
Constant	12.501	***	12.500	***
"cut-off point"	12.504		12.504	

Source: Authors' calculations using data from ECAM 3.

Note:

- Dependent variable: logarithm of total household expenditure (per adult equivalent) divided by the relevant regional price deflator
- Econometric model: quantile regressions set at 0.11 for urban areas and at 0.42 for rural areas
- Coefficients significant at 1% (***), 5% (**), 10% (*) level
- Pseudo R^2 for "urban" 0.26; for "rural" 0.26
- The "cut-off point" is expressed in logarithmic form and corresponds to 269443 (FCFA), the poverty line for 2007
- To identify the individuals who are poor, all that is required is to multiply the variables for each household by their respective coefficients. If the total sum is less than 12.504 the household is considered as poor, otherwise it is considered as non poor.

Key:

Regions = binary variables for each region with labels "Douala" (the comparison category) to "South West"

hh_ageabove14 = number of household members aged 15 and over

hh_agebelow15 = number of household members aged 14 and under

toilet = binary variable equal to 1 if household as a private flush toilet/improved latrine; 0 otherwise

floor= binary variable equal to 1 if household lives in a house with a cement or tiled floor; 0 otherwise

wall = binary variable equal to 1 if household lives in a house with cement or brick walls; 0 otherwise

roof = binary variable equal to 1 if household lives in a house with a cement or sheet metal roof; 0 otherwise

electricity = binary equal to 1 if household lives in a house with electricity; 0 otherwise

water = binary equal to 1 if household has access to own tap (snec) for drinkable water; 0 otherwise

n_rooms = number of rooms per household member

automobile = binary equal to 1 if household has an automobile; 0 otherwise

motorcycle= binary equal to 1 if household has a motorcycle; 0 otherwise

distance = binary equal to 1 if household lives less than 3 km from the paved road if urban or less than 6 km if rural; 0 otherwise.

Table a3: Relative contribution of regions and urban/rural areas to changes in child monetary poverty engendered by the crisis

Region / Urban vs rural	Relative contribution (%) to poverty rate in the reference situation (2007)	Relative contribution to poverty rate in the growth in the number of children in a state of monetary poverty with respect to the no crisis scenario (%)			
		2008	**2009**	**2010**	**2011**
Douala	1.00	8.81	9.60	7.44	7.57
Yaoundé	0.80	5.79	11.25	11.22	10.87
Adamaoua	7.77	5.33	11.30	13.15	13.65
Centre	6.18	4.83	12.06	15.44	15.71
East	6.77	4.34	2.36	1.73	2.06
Far North	31.27	27.60	15.77	14.89	13.77
Littoral	1.79	6.52	3.47	2.94	3.28
North	16.33	7.52	3.58	3.33	3.46
North West	13.35	10.54	11.55	12.16	12.19
West	6.57	12.61	13.96	11.84	10.06
South	2.39	4.26	0.00	0.54	1.47
South West	5.78	1.84	5.10	5.33	5.92
Rural	91.43	61.92	57.88	59.65	61.09
Urban	8.57	38.08	42.12	40.35	38.91
National	100.00	100.00	100.00	100.00	100.00

Source: Authors' calculations using results from the simulations.

Table a4: Changes engendered by the crisis of the number of poor children in each region and in rural/urban areas, compared to the no crisis scenario

Region / Urban vs rural	Contribution relative (%) to poverty rate in the reference situation (2007)	Change in the number of poor children (%) by region and urban vs rural areas, compared to the no crisis scenario			
		2008	**2009**	**2010**	**2011**
Douala	1.00	9.63	44.96	35.39	34.48
Yaoundé	0.80	6.86	51.48	55.18	51.48
Adamaoua	7.77	0.71	5.82	7.26	7.26
Centre	6.18	0.81	7.79	11.06	10.85
East	6.77	0.67	1.41	1.11	1.28
Far North	31.27	0.92	2.04	2.07	1.84
Littoral	1.79	3.77	7.74	6.94	7.59
North	16.33	0.48	0.89	0.89	0.89
North West	13.35	0.83	3.51	3.97	3.83
West	6.57	2.01	8.64	7.68	6.20
South	2.39	1.83	0.00	0.95	2.47
South West	5.78	0.34	3.60	4.04	4.33
Rural	91.43	0.71	2.55	2.81	2.78
Urban	8.57	4.67	20.36	20.82	19.24
National	100.00	1.05	4.04	4.34	4.18

Source: Authors' calculations using results from the simulations.

Table a5: Impact of the crisis on the absolute contribution to child caloric poverty, by region

Region	Absolute contribution (% points) to caloric poverty rate in the reference situation (2007)	Change in the absolute contribution to caloric poverty rate with respect to the no crisis scenario (in % points)			
		2008	**2009**	**2010**	**2011**
Douala	1.87	−0.01	0.14	0.20	0.28
Yaoundé	1.54	−0.01	0.09	0.15	0.14
Adamaoua	1.87	−0.02	0.00	0.00	0.10
Centre	1.40	0.00	−0.07	−0.04	−0.03
East	1.31	−0.05	−0.05	−0.01	−0.01
Far North	12.84	−0.16	0.25	0.08	0.12
Littoral	0.86	0.00	0.02	0.00	0.01
North	7.43	−0.02	0.05	0.05	0.06
North West	1.19	−0.08	−0.14	−0.10	−0.09
West	1.81	−0.02	−0.02	0.08	−0.03
South	1.52	−0.03	−0.09	−0.08	0.00
South West	2.12	−0.08	0.03	0.04	0.01
National	35.75	−0.47	0.20	0.38	0.56

Source: Authors' calculations using results from the simulations.

Table a6: Relative contribution of each region and urban/rural areas to changes in caloric poverty due to the crisis

Region	Relative contribution (%) to caloric poverty rate in the reference situation (2007)	Change in % of the number of children in a state of caloric poverty in each region compared to the no crisis scenario			
		2008	**2009**	**2010**	**2011**
Douala	5.24	−0.38	7.71	11.29	16.25
Yaoundé	4.31	−0.47	5.94	9.74	9.71
Adamaoua	5.22	−0.81	0.21	0.07	5.62
Centre	3.91	0.05	−5.45	−2.79	−2.18
East	3.66	−3.46	−3.89	−0.41	−0.62
Far North	35.93	−1.26	1.93	0.65	0.94
Littoral	2.39	−0.25	2.48	0.24	0.85
North	20.77	−0.31	0.61	0.71	0.77
North West	3.32	−6.71	−12.28	−8.78	−7.99
West	5.06	−1.32	−1.28	4.44	−1.36
South	4.25	−2.04	−5.91	−5.30	−0.06
South West	5.94	−3.57	1.32	1.74	0.45
National	100.00	−1.32	0.56	1.08	1.60

Source: Authors' calculations using results from the simulations.

Table a7: Change in the absolute contribution to child monetary poverty after crisis+transfer, with respect to the crisis scenario

Region / Urban vs rural	Absolute contribution (% points) to poverty rate in the reference situation (2007)	Change in the absolute contribution to poverty rate after crisis+transfer, with respect to the no crisis scenario (in % points)			
		2008	**2009**	**2010**	**2011**
Douala	0.5	0.02	0.17	0.13	0.13
Yaoundé	0.4	0.03	0.19	0.20	0.19
Adamaoua	3.9	−0.14	−0.01	−0.02	−0.02
Centre	3.1	−0.22	0.00	0.14	0.13
East	3.4	−0.08	−0.05	−0.04	−0.04
Far North	15.7	−0.31	−0.12	−0.06	−0.10
Littoral	0.9	−0.04	−0.02	−0.03	−0.02
North	8.2	−0.08	−0.02	−0.01	−0.01
North West	6.7	−0.24	−0.15	−0.13	−0.13
West	3.3	−0.23	−0.03	−0.11	−0.11
South	1.2	−0.04	−0.09	−0.05	−0.06
South West	2.9	−0.30	−0.30	−0.30	−0.27
Rural	45.9	−1.47	−0.76	−0.64	−0.66
Urban	4.3	−0.17	0.34	0.36	0.35
National	50.2	−1.64	−0.43	−0.28	−0.31

Source: Authors' calculations using results from the simulations.

Table a8: Growth rate in the number of monetary poor children in each region after crisis+transfer, with respect to the no crisis scenario

Region / Urban vs rural	Relative contribution (%) to poverty rate in the reference situation (2007)	Change in the number of poor children (%) by region and urban vs rural areas after crisis+transfer, compared to the no crisis scenario			
		2008	**2009**	**2010**	**2011**
Douala	1.00	3.94	28.08	22.42	21.90
Yaoundé	0.80	6.34	29.72	31.43	29.72
Adamaoua	7.77	−3.73	−0.19	−0.42	−0.42
Centre	6.18	−7.43	−0.05	4.41	4.05
East	6.77	−2.38	−1.45	−1.31	−1.14
Far North	31.27	−1.99	−0.78	−0.41	−0.65
Littoral	1.79	−5.09	−2.50	−3.39	−2.03
North	16.33	−1.03	−0.25	−0.14	−0.14
North West	13.35	−3.76	−2.25	−2.04	−1.96
West	6.57	−7.67	−0.80	−3.42	−3.39
South	2.39	−3.51	−7.54	−3.83	−4.85
South West	5.78	−11.74	−11.75	−11.69	−10.49
Rural	91.43	−3.32	−1.69	−1.42	−1.45
Urban	8.57	−4.01	7.44	7.90	7.58
National	100.00	−3.38	−0.86	−0.56	−0.62

Source: Authors' calculations using results from the simulations.

Table a9: Change in the absolute contribution to child caloric poverty following crisis+transfer, with respect to the no crisis scenario

Region	Absolute contribution (% points) to caloric poverty rate in the reference situation (2007)	Change in the absolute contribution to caloric poverty rate after crisis+transfer, with respect to the no crisis scenario (in % points)			
		2008	**2009**	**2010**	**2011**
Douala	1.87	−0.10	0.03	0.14	0.19
Yaoundé	1.54	−0.01	0.09	0.15	0.13
Adamaoua	1.87	−0.20	−0.25	−0.24	−0.15
Centre	1.40	−0.28	−0.31	−0.31	−0.31
East	1.31	−0.44	−0.58	−0.54	−0.54
Far North	12.84	−1.81	−1.51	−1.58	−1.54
Littoral	0.86	−0.03	0.00	−0.01	0.00
North	7.43	−0.69	−0.59	−0.64	−0.69
North West	1.19	−0.32	−0.33	−0.27	−0.27
West	1.81	−0.30	−0.20	−0.16	−0.21
South	1.52	−0.09	−0.08	−0.07	0.00
South West	2.12	−0.37	−0.32	−0.30	−0.32
National	35.75	−4.64	−4.05	−3.84	−3.70

Source: Authors' calculations using results from the simulations.

Table a10: Change in the number of monetary poor children in each region after crisis+transfer, with respect to the no crisis scenario

Region	Relative contribution (%) to caloric poverty rate in the reference situation (2007)	Change in the number of poor children (%) in each region after crisis+transfer, relative to the no crisis scenario			
		2008	**2009**	**2010**	**2011**
Douala	5.24	−5.18	1.75	7.61	10.99
Yaoundé	4.31	−0.51	6.05	9.99	9.10
Adamaoua	5.22	−10.88	−13.23	−13.08	−8.51
Centre	3.91	−20.80	−22.97	−23.51	−23.43
East	3.66	−33.81	−45.24	−42.77	−43.38
Far North	35.93	−13.99	−11.76	−12.31	−12.04
Littoral	2.39	−3.66	−0.12	−0.94	0.01
North	20.77	−9.27	−8.03	−8.66	−9.30
North West	3.32	−26.92	−28.11	−24.45	−24.56
West	5.06	−16.45	−10.87	−8.76	−11.32
South	4.25	−5.74	−5.18	−4.78	0.29
South West	5.94	−17.24	−14.94	−14.07	−14.95
National	100.00	−12.95	−11.37	−10.85	−10.57

Source: Authors' calculations using results from the simulations.

Table a11: Percentage of districts covered by the (simulated) school feeding programme

Region	a. Total number of districts	b. Number of districts where the level of monetary poverty is higher than the national average	(b/a). Percentage of children benefitting from the school feeding programme
Douala	5	0	0.0
Yaoundé	6	0	0.0
Adamaoua	11	9	81.8
Centre	27	10	37.0
East	14	10	71.4
Far North	34	31	91.2
Littoral	15	2	13.3
North	14	13	92.9
North West	29	26	89.7
West	29	5	17.2
South	11	3	27.3
South West	20	11	55.0
National	**215**	**120**	**55.8**

Source: Calculated by the authors from ECAM3.
Note: The district coincides with the arrondissement identified in ECAM3.