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A Review of Ex-ante Poverty Impact Assessments of Macroeconomic Policies in Cameroon and Ghana

Nicholas Adamtey, Vitus Azeem and Samuel Fambon *

Abstract

This paper summarizes two extensive case studies of experiences with ex-ante poverty impact assessments of macroeconomic policies in Cameroon and Ghana during the last ten years. The paper provides a short description and critique of the studies and models that have been used in one way or the other for such assessments. It shows that much more needs to be done to provide policy makers with critical information to reduce poverty more effectively. The paper also reviews briefly the key institutional issues that constrain the more extensive analysis of the impact of macroeconomic policies on poverty, which are related to data constraints, capacity constraints, and power structures. The paper closes with a variety of recommendations, covering methodological, political, and data issues as well as suggestions for more evidence-based policy-making.

Résumé

Ce papier est le résumé de deux études approfondies concernant les évaluations ex-ante des impacts des politiques macroéconomiques sur la pauvreté au Cameroun et au Ghana sur les dernières dix années. Le papier fournit une brève description et une critique des études et des modèles qui ont été utilisés d'une façon ou d'une autre pour de telles évaluations. Il montre que beaucoup plus de choses doivent être faites pour fournir aux décideurs l'information essentielle visant à réduire plus efficacement la pauvreté. Le papier examine aussi de façon concise les questions institutionnelles essentielles qui contraignent l'analyse plus approfondie de l'impact des politiques macroéconomiques sur la pauvreté, en rapport avec les contraintes liées aux données et à la capacité, et les structures du pouvoir. Le papier se termine par plusieurs recommandations couvrant aussi bien des questions méthodologiques, politiques, et de données que des suggestions pour élaborer davantage de décisions fondées sur les évidences.

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1. Introduction

Cameroon and Ghana went through a series of stabilization and structural adjustment programs in the 1980s and 1990s that implied considerable changes to a broad range of macroeconomic policies. However, in terms of poverty reduction, little has been achieved, except more recently in Ghana. While some claim that macroeconomic stabilization has gone too far, others maintain that changes in macroeconomic policies have not gone far enough. Even though it is clear today that the developmental challenges facing most developing countries are cross-cutting and need a comprehensive set of macroeconomic, sectoral and social policies, macroeconomic policies continue to be at the center of the debate.

One reason for the disagreement on what poverty-reducing macroeconomic policies are is that too little has been done in terms of evaluating the impact of macroeconomic policies on poverty. The impacts of macroeconomic policies are often ignored. Even when they are considered these are often afterthoughts and/or addressed in an isolated way. This is not satisfactory, especially in an era of international commitments to achieve the Millennium Development Goals (MDGs) and the emergence of a new development paradigm in which policy interventions are supposed to be based on country-owned poverty reduction strategies. It is important to be able to assess the impacts of macroeconomic policies on the poor early enough so as to change the design of the policy or to put in place compensatory policies to alleviate any adverse effects that may have resulted.

The substantial disagreements on the impact of macroeconomic policies on poverty have led to some accord on the need for ex-ante impact assessments of macroeconomic policies. A variety of researchers have developed a series of tools, models, networks, etc. for such impact assessments. This paper summarizes the experience with ex-ante assessments of macroeconomic policies in Cameroon and Ghana during the last ten years, including lessons that could be useful for other developing countries.

Many studies analyze macroeconomic policies without making any explicit linkage to poverty. Similarly, there are many poverty studies that do not make any explicit link to macroeconomic policies. In the cases of Cameroon or Ghana, there are fewer than 20 studies that can be considered to contain some elements of an ex-ante poverty impact assessment of macroeconomic policies. Together, they only scratch the surface of an increasingly sophisticated topic that is central to reducing poverty and meeting the MDGs.¹

¹ See Gunter, Cohen and Lofgren (2005) for an overview of analyzing macro-poverty linkages and Robinson and Lofgren (2005) for a review of the main tools for such an analysis, consisting mainly of economy-wide, multi-sectoral models. Kraev and Akolgo (2005) provide a set of desirable properties of an adequate model for assessing distributional impacts of macroeconomic policy packages, and use these as criteria to evaluate four model types commonly used for such assessments, namely, fixed ratio, econometric, computable general equilibrium (CGE) and micro-simulation models, of which CGE models perform the best on most criteria, in spite of their substantial flaws of non-verifiability and lack of short-term analysis. Finally, Savard (2005) compares two of the most recent approaches used for ex-ante poverty

The findings of this paper are expected to encourage policy makers to review macroeconomic policies by promoting a more pro-poor policy environment based on credible analysis of available options. It also intends to contribute towards overcoming the various constraints to conducting ex-ante poverty impact assessments of macroeconomic policies.

The paper is organized into six sections. Following this introduction, Section 2 looks at studies that are of a macroeconomic nature (mostly macroeconomic forecasting models). Section 3 reviews some specific studies that constitute ex-ante poverty impact assessments of macroeconomic policies in Cameroon or Ghana. The most comprehensive models that have been developed and applied for the ex-ante poverty impact assessment of macroeconomic policies in at least one country are then presented in Section 4. Section 5 provides some discussion on the institutional environment of ex-ante poverty impact assessments in Cameroon and Ghana, before the last Section (Section 6) provides the conclusion and some recommendations.

2. Macroeconomic-Focused Models

Like most African countries, Cameroon and Ghana have made considerable progress in pursuing macroeconomic stabilization, usually under the tutelage of the International Monetary Fund (IMF). Policy targets for the IMF-supported programs are universally derived from some variation of the IMF's standard financial programming methodology, the so-called Financial Programming Model. The World Bank also has a similar model, the RMSM-X model, which is nowadays mainly used to ensure macroeconomic consistency within the forecasting exercise the World Bank continues to undertake. While Cameroon had made use of two macro-econometric forecasting models (the SIPAE model and the Jumbo model), Ghana relied mainly on the dated IMF and World Bank models. More recently, Bamou, Bamou-Tankou and Tchanou (2006) have also developed a growth-elasticity-determinant forecast model for the Cameroonian economy. While the following sections summarize these macroeconomic-focused models, none of these models are sufficiently developed to provide a credible foundation for analyzing the impacts of macroeconomic policies on the poor, neither ex-ante nor ex-post.

2.1 RMSM-X and Financial Programming Model

Economic growth and relative prices are exogenous in both, the World Bank's Extended Revised Minimum Standard Model (RMSM-X) and the IMF's Financial Programming Model. Hence, two very critical determinants of poverty—growth and income distribution—are outside these models. Both of them concentrate on aggregate figures such as total GDP and the overall balance of payments, and are thus structurally unable to capture the differential impact of a policy or an external shock on different parts of the populations. For further details on these two models, see Tripathi (2003).

impact assessments of macroeconomic policies: the traditional representative agent and the micro-simulation approach.

2.2 Ghana's Forecasting Models

In 1999, the Government of Ghana and the United Kingdom's Department for International Development (DFID) engaged consultants to develop a variety of social accounting matrices (SAMs) for the production of forecasting models for seven government institutions participating in the macroeconomic group of Ghana's Ministry of Finance. Essentially, the consultants were to assist in the development of computable general equilibrium (CGE) models based on the 1993 Ghana social accounting matrix (SAM), though more adapted for the particular interest of each of the seven government institutions as it was recognized that most of the existing economic models have generally resulted from academic exercises, taking little account of operational government policy making and using concepts which differ from those used by government policy advisers. The exercise was believed to involve much effort aimed at producing models which are convenient operational tools for policy advisers. There is some indication that at the end of the program staff of the Research Division of the Ministry of Finance had produced a CGE model with which they were able to estimate the effects of changes to government financial policy and the key outside influences on the economy. However, the model or its description has not been made available to the public and it is not clear how much this model has actually been used for policy advice.

2.3 Cameroon's SIPAE Model

The SIPAE model (see N'Cho-Oguie, 2004) is Cameroon's macro-econometric framing model, constructed with the aim to acquire a projection tool based on short- and medium-term econometric forecasting that can help in policy decision-making. It integrates the four major macroeconomic accounts with additional modules that then allow to analyze issues related to indebtedness, the impact of public spending, and poverty. The assumptions of this model may be broken down into three categories: (1) assumptions relating to the international economic environment (the prices of oil, cocoa, coffee, wood, bananas and aluminum; world inflation and world economic growth, broken down into some major sub-regions); (2) assumptions related to domestic productive capacity in terms of human and physical capital; (3) assumptions connected with sectoral policies and strategies. While this model is quite user-friendly, the poverty analysis of macroeconomic policies has remained very limited.

2.4 Cameroon's Jumbo Forecasting Model

The Jumbo model (see Latreille, 2005) is a multi-sector model based on the input-output table. It is mainly applied in the Communauté Financière Africaine (CFA) franc countries with the main purposes of forecasting macroeconomic performances in CFA franc countries, the entire CFA franc zone and their two sub-unions: the Union Economique et Monétaire de l'Ouest Africain (UEMOA) and the Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC). This macroeconomic and financial forecasting model was designed by the Agence Française de Développement (AFD) with the view of providing a macroeconomic monitoring instrument. The model also aimed at helping the AFD with participating in economic policy debates in CFA franc countries. It is a simple Keynesian-type model, which comprises a few behavioral

relations with, for instance, an econometric estimation of each national consumption function. Jumbo forecasting results are revised twice a year. They are presented in two reports, one report on the economic outlook in April, and the other on structural studies in September before the Franc Zone Finance Ministries' meeting. The latter report presents and makes comments on short-term economic growth forecasts, two years down the line. One advantage of the Jumbo model is that it utilizes a long-term macroeconomic database (more than ten years, or more than 20 years for some variables), which makes it possible to conduct comparative analysis between countries.²

2.5 Cameroon's Growth-Elasticity-Determinant Forecast Model

Bamou, Bamou Tankou, and Tchanou (2006) analyze the links between trade liberalization, investment policy reforms, and economic growth in Cameroon within 1980-2004. After identifying trade and investment policy reforms and market access conditions, it appears that their expected results are still awaited in Cameroon. However, facts from the costs/benefits analysis tend to confirm the literature assertion that their long term beneficial effects are superior to their short term adjustment costs. The authors concluded that despite improvements in market access conditions, Cameroon did not take full advantage of that opportunity as well as those offered by trade and investment policy reforms because of the remaining trade, investment, institutional and economic bottlenecks, including poor governance and external and mostly internal supply constraints. The results of the growth-elasticity-determinant forecast model show that additional reforms in view to lift those constraints are necessary and indispensable to boost growth in Cameroon.³

3. Specific Ex-ante Poverty Impact Assessments of Macroeconomic Policies

In addition to the above models and related studies, there have been ten specific studies that analyzed some impacts of macroeconomic policies on poverty in Cameroon or Ghana during the last ten years. Out of these ten studies, seven are applied to Cameroon and three to Ghana. All of these studies developed specific CGE models, with the sophistication of these models increasing over time.

² In the case of Senegal, the Jumbo model has been linked to a household budget survey to compute poverty and inequality measures. Households are disaggregated into five categories, namely, rural sector employees, groundnut rural sector employees, formal sector employees, urban informal sector employees and public sector employees. While simplicity of this extension of the Jumbo model is an advantage, the limitation of this extension for any ex-ante poverty analysis is that its labor market module is not detailed enough.

³ These results are mainly driven by the model's neo-classical assumptions. Alternative assumptions may lead to different results. For example, see Gunter, Taylor and Yeldan (2005) for a model that makes it possible to analyse more plausible stories about the impact of both current and capital account liberalisation.

3.1 Bamou (1997)

This study uses a CGE model to analyze the impact of indirect tax and customs reforms put in place in January 1994 by the Cameroon government on (1) the supply and demand for fishing products, (2) the welfare of the population, and (3) the budget and current account balances. The SAM is disaggregated into four blocks: the block of production branches, the products block, the block of agents and the block of final uses. The specificity of this SAM stands at the level of production branches, which separate the fishing sector from the other sectors of the economy, while taking into account the sectoral specificity of the latter (the industrial sub-sector, whose output is sold in part in urban centers, and in part exported; and the small-scale production sub-sector, the output of which is sold in most of the national territory, while being also subject to international trade). This detailed breakdown of the fishing sector aims to evaluate the impact of economic incentives on the subsidized industrial supply relative to small-scale production to which no subsidy is transferred. Moreover, the concern about the welfare of the population leads at the level of the block of agents, to a distinction of the distribution and the uses of the income generated by the production process. In addition, households are classified into rural and urban locations.

Poverty issues are addressed in the model both by a distinction between the distribution and the use of the income generated by the production process, and the classification of households according regional location (rural, urban). However, no direct poverty measure is calculated in the study. The policy impacts on poverty are implicitly addressed through the evaluation of the welfare impacts of the policy in question on the different household groups in the model. Changes in the welfare of the population caused by the implementation of new measures of economic policy are calculated using Hicks' method of compensating variations and equivalent variations. This method is based notably on the comparison of the incomes and utilities of consumers.

3.2 Bakoup and Tarr (1998)

This study uses a CGE model to measure the impact of three aspects of Cameroon's regional agreement with CEMAC: the improvement of market access in the CEMAC zone, the reduction of preferential tariffs, and the reduction of its external tariffs through the implementation of CEMAC's common external tariff. The authors also estimate the impacts on Cameroon of the unilateral trade liberalization, and compare them with the case whereby Cameroon joins the CEMAC. The model used closely follows the "small open economy" model described in detail by de Melo and Tarr (1992). The economy is broken down into three sectors, namely agriculture, industry and services, and all intermediate and final goods are used. Factors of production are mobile between sectors but, the total supply of each factor is fixed. Production functions are subject to constant returns to scale. All economic agents, i.e. consumers, firms and the owners of production factors, maximize welfare, profits or returns under perfectly competitive conditions.

The model's estimation shows not only that Cameroon will benefit from the agreement, but it also indicates how Cameroon, as the biggest economy of the sub-region

dominates the sub-regional market both in term of imports and exports despite its small size in world market. Moreover, the model also finds that the best access to market by its sub-regional partners and the reduction of the external tariff largely explain all of its gain in social welfare. In the model's preferential scenario, the reduction of the external tariff explains three fourth of the social welfare gain. However, if Cameroon reduces its tariffs on regional partners' products beyond the agreed CEMAC levels, the effects on Cameroon's economy will result in a real loss in revenue and the overall impact will be negligible.

3.3 Bamou (2000)

This study uses a multi-country CGE model applied to Cameroon and Gabon to study the impact of the real coordination of fiscal policy and population movements between CEMAC countries on the macroeconomic performances and welfare of their populations. This CGE model is composed of five main blocks (production, income, savings, demand, prices and equilibrium). The analysis focuses on mostly macroeconomic aspects. Special attention is given to both fiscal aspects and to the comparison of Cameroon's simulation results with those of Gabon.

The results of these simulations show that, despite the large structural disparities between the economies considered, fiscal policy coordination is possible provided some precautions are taken into account and specific measures applied. These simulations also indicate that the free mobility of people between CEMAC countries does not constitute a handicap in itself. Combined with a better income redistribution policy it can turn out to be a vital support element for the economic development of countries with "low human capital levels" such as Gabon, and for the reduction of unemployment in countries with unlimited surplus labor such as Cameroon.

The absence of an examination of the effects of the harmonization of macroeconomic objectives on the welfare of the social groups of both countries constitutes the major limitation of this study. The model applied to both countries does not take into account the different social group and their saving and consumption behavior. Moreover, the SAMs of both countries are constructed for two different years due to the lack of a recent input-output table for Cameroon. This constitutes another significant limitation of the study.

3.4 Colatei and Round (2000)

Colatei and Round (2000) carried out some counterfactual, numerical simulation experiments using variants of a stylized SAM-based CGE model, to ascertain possible effects on poverty of a range of fiscal-neutral redistributive policies. The study used multi-sectoral CGE modeling approach to simulate the possible effects of a range of redistributive policies on poverty incidence in Ghana. Among the objectives were to examine the possible consequences of a range of poverty-alleviating income and/or consumption transfers on the economy of Ghana; and to explore the effects (sensitivity) of the results to alternative representations of closures. The analysis is based on a social accounting matrix (SAM) for Ghana compiled for the year 1993. Though the study focused on macro-meso level, such studies could serve as building blocks for more

comprehensive (incorporating the micro level) ex-ante poverty social impact assessment.

3.5 Dennis (2000)

Dennis (2000) developed a CGE model for the Ghanaian economy to consider the response of exports to trade and non-trade related determinants with the view to find out how these different policies impact on welfare levels. He observed that both trade and non-trade factors such as tariff liberalization and exchange rate depreciation and non-trade policy factors such as infrastructural development and technological improvements have favorable response on exports. The degree of responsiveness is limited for tariff liberalization but favorably high for technological improvements. The response of these various policies on resource allocation and welfare are quite different. An investigation of their comparative welfare effects indicates that infrastructure and technology, particularly the former have clearly favorable effects on household welfare. Generally, trade liberalization has a marginal improvement on household welfare, though income distribution marginally declines. The exchange rate depreciation has the worse consequences on household welfare.

3.6 Emini (2000)

This study uses a CGE model applied to Cameroon to measure the lag between the short-term and long-term effects of the implementation of the value-added (VAT) tax. The short run is assumed to be a time period in which only labor is mobile between sectors of production, while the long run is that period of time when capital becomes mobile. The model comprises 20 production sectors among which we may mention sectors with an ex-ante heavy tax burden and sectors with a light tax burden. In addition, sectors are differentiated by tax regime applicable to their productions during the first implementation phase of the VAT in Cameroon: products subject to the general VAT rate, product subject to the reduced VAT rate, product subject to excise taxes, products subject to the non-refinancing of the VAT, products subject to the special tax on petroleum and products exempted from the VAT.

Emini (2000) focuses on welfare effects and some considerations as to resource allocation. Implications on poverty are analyzed through a representation of households into rural, semi-urban and urban households. No direct poverty measure is computed. Policy impacts are evaluated indirectly through policy effects on households' income and welfare. The simulation results show that, even if an imperfect VAT were to improve social welfare in the short run, this improvement would tend to lead to the deterioration of welfare in the long run. On the other hand, if the VAT implemented is a pure VAT, the transitory improvement in welfare in the short run will increase in the long run; similarly, if there is short period of welfare deterioration, it will tend to vanish, or turn into a welfare gain in the long-term.

3.7 Njinkeu and Bamou (2000)

Njinkeu and Bamou (2000) use a CGE model to evaluate the impact of the 1994 sub-regional fiscal reform in Cameroon, with the CGE model being characterized by two main elements: it takes into account the asymmetrical impact with trade partners, and the dualism on products and factor markets by taking into account formal and informal

sectors activities. Poverty issues are expressed in the context of modelling through a detailed representation of factors of production. In fact, the SAM has two production factors (labor and capital), sub-divided into informal and formal sectors. There are four groups of participants in the market or institutions (households, firms, the government and foreign partners). Households are differentiated by residence area and sector of occupation. Thus, four household groups are obtained (informal rural households, informal urban households, formal rural households, and unemployed households). This classification is carried out in such a way as to consider the poverty profile which permits to evaluate welfare. As concerns poverty and inequality measures, no direct measures of these phenomena are calculated. Policy impacts are assessed indirectly through policy effects on household income and welfare. The different simulations show a strong economic growth and employment expansion. However, sectoral effects are different depending on how taxes are used. As a member of the CFA zone, Cameroon may realize a real depreciation individually, especially through tight fiscal and monetary policies. The simulation of this policy scenario leads to an increase in GDP at factor costs, which also imply employment increases and overall household welfare increases, though only marginally for the category of the formal sector.

3.8 Arbenser (2004)

Arbenser (2004) uses a CGE model to carry out specific counterfactual simulations for Ghana to answer the following two questions: (1) How would an increase in foreign direct investment (FDI) and a reduction in import tariff levels in isolation affect household welfare and other macroeconomic indicators? (2) How would the concurrent application of the two enhance the expected impact? The conclusions of the study were that: (1) the primary benefit of an increase in FDI inflow for a developing economy is the increase in current consumption; (2) policies which ensure increase in FDI inflow and tariff levels are complementary policies that enhance household welfare; and (3) the two policies mentioned above will have different impact on macroeconomic indicators, inter alia exchange rate, export, import and trade deficits.

3.9 Decaluwé, Savard and Thorbecke (2005)

This paper uses a CGE model to study the impact of a trade shock and a tariff reform on household poverty for an archetype developing country. Unlike other studies, it presents (1) the income distribution of each household group as a Beta statistical distribution, and (2) the poverty lines as being endogenous. With this specification, the poverty line will change following a variation in relative prices. With the new distributions and poverty line, the poverty levels of the base year are compared with the ex-post values. The paper uses the poverty measures of the Foster, Greer and Thorbecke (1984) and is based on the Cameroon household survey data of 1995–96. It considers two scenarios. The first is a 30 percent fall in the world price of the country's export crop and the second is a reduction of 50 percent in the country's import tariffs. For the first simulation, results indicate a drop in all household incomes and a decrease in the poverty line. Unilateral trade liberalization also has negative consequences on all household incomes. As in the first simulation, the poverty line decreases with a unilateral trade liberalization. In the trade liberalization simulation, the poverty line effect counters the income effect in most cases analyzed. In the other simulation, the poverty line effect

attenuates the decrease in the poverty measures.

3.10 Emini, Cockburn and Decaluwé (2005)

Emini, Cockburn and Decaluwé (2005) uses a CGE microsimulation model and the 2001 Cameroon household survey data to evaluate the potential impacts of the Doha Round trade negotiation on poverty in Cameroon. The architecture of this CGE model is based on the archetypal “EXTER” model (see Decaluwé, Martens and Savard, 2001). The model comprises ten sectors of production, and each sector uses a nested production technique. The primary production factors are combined according to a constant elasticity of substitution (CES) production function to yield value-added, which in turn combines with intermediate consumption through Leontief functions.

The results show that the Doha Round negotiations reduce poverty in Cameroon. For the country as a whole, the net estimate of the number of persons escaping poverty amounts to 22 000 following that scenario. Additional investigations show that a more ambitious world trade liberalization leads to greater poverty relief at the national level, whereas the domestic trade liberalization of Cameroon has adverse effects on poverty and inequality – despite the fact that it leads to a stronger increase in aggregate welfare. Under the Doha scenarios, a fall in Cameroon’s tariffs are very small (the average tariffs dropped from 11.79 percent in the basic scenario to only 11.06 percent), so that the liberalization effects of the rest of world on world prices more than compensate for the effects of its share of liberalization in this scenario.

If the full trade liberalization of the rest of the world (ROW) is combined with Cameroon’s own full liberalization, the adverse effects of Cameroon’s own full liberalization override the favorable results of ROW full liberalization. These simulation results suggest that of the replacement tax instrument may have a significant bias on poverty: poverty worsens in Cameroon when an imperfect VAT is used, instead of a neutral replacement tax to compensate for the fall in revenues caused by the tariff, and even become worse when a consumption tax is used. The main reasons for this result are the additional distortions which are null in the case of a neutral tax and become stronger in the case of a consumption tax. Furthermore, accompanying measures must be considered to avoid an increase in poverty in the context of the economic partnership agreements in progress in the negotiations between African, Caribbean and Pacific Group of States (ACP) and the European Union (EU), which proposes the full abolition of ACP tariffs within the few years to come.

In the final analysis, the overall conclusion which emerges from this study is that the development of the Doha Round is likely to relieve poverty in Cameroon. Indeed, the Doha scenario considered in this study results in a fall in global poverty and a decline in income inequality, and may help 22 000 persons to escape poverty in Cameroon.

4. Comprehensive Ex-ante Poverty Impact Assessments of Macroeconomic Policies

4.1 1-2-3 PRSP Model

The 1-2-3 PRSP model (see Devarajan and Go, 2002) is a relative simple computable general equilibrium (CGE) static model, built to serve as a macroeconomic framework for evaluating macroeconomic policies described in Poverty Reduction Strategy Papers (PRSPs). It is based on the previously existing 1-2-3 Model, which was named this way to reflect that the model comprises one country, two activities and three goods. The original 1-2-3 Model has become famous as it was used to assess the overvaluation of the CFA franc before 1994 (see Devarajan, 1987). The underlying model of the 1-2-3 PRSP model is based on static macroeconomic consistency model (using national accounts aggregates) which is then linked to a selected endogenous growth model. The resulting model is then calibrated with data from household expenditure and/or income surveys to provide the linkage to the impact of policies on poverty.

4.2 Integrated Macroeconomic Model for Poverty Analysis (IMMPA)

The integrated macroeconomic model for poverty analysis (IMMPA), see Agénor, Izquierdo and Fofack (2002), is an elaborate CGE model based on a framework which put emphasis on the role of labor market segmentation, the role of informal sector employment in the transmission of policies and exogenous shocks on the poor, and the adverse effect of external indebtedness on private investment incentives. It also explains the impact of the various components of public expenditures on the production process, and the formation of physical and human capital by the private sector. This model moreover, permits to link the real sector of the economy with the financial sector, and also innovates by emphasizing investment. This analytical framework is built on a series of equations linking production, employment, demand, foreign trade, sectoral and aggregated prices, income formation, the financial sector and asset allocation decisions, and the public sector. In addition, behavioral functions are specified for six categories of agents, namely, households, firms, the government, the central bank, commercial banks and the rest of the world.

Emini and Fofack (2004) have constructed an integrated financial SAM for the Cameroon economy which serves as input in the process of building an IMMPA model for Cameroon. The results derived so far from the Cameroon SAM show that Cameroon's economy is characterized by a high concentration of resources and flows in urban areas, and the formal and informal sectors. Urban formal and informal sectors together contribute for up to 80 percent of aggregate value-added, of which the share of formal output is 42 percent of value-added at the national level, and about 45 percent of total urban output. This leaves a large share of about 46 percent to the urban informal sector. Moreover, investment remains dramatically low and significantly below the levels registered during the periods preceding the advent of the economic crisis as a consequence of the extremely high levels of final consumption and external debt service payments. The significant fall in investment is partially supposed to be responsible for the persistent high rates of unemployment and poverty recorded during the 90's and beyond,

a period characterized by a dramatic fall in income. Furthermore, assuming fixed-price multipliers, policy simulations show that potential advantages could be derived from increases in public investments. In effect, given the assumption of a reduction in the debt service consistent with the HIPC initiative, in addition to debt relief re-allocated to public investment, a significantly higher growth rate of the economy could be achieved, with the benefits of growth contributing to a rapid increase in household income and financial assets, especially to the advantage of “capitalist households”.

4.3 Poverty Analysis Macroeconomic Simulator (PAMS)

The PAMS, see Pereira da Silva, Essama-Nssah and Samake (2003), is an econometric model which links a coherent macroeconomic framework with an employment/poverty module. This model possesses three main components, namely, (1) an aggregate standard macroeconomic framework for the consistent projection of various macroeconomic variables like gross domestic product (GDP); (2) a labor market model breaking down labor categories according to level of skills and economic sectors in which total output is consistent with the macroeconomic framework; and (3) a model using the results of the labor market model to simulate an increase in the income of each individual within its own group, which is assumed to equal the group’s average income.

Within the employment/poverty module, survey households are organized into representative household groups, defined according to household head employment category. For each employment category, labor demand depends on sectoral output and real wages. Wage levels by economic sector and labor categories may thus be determined. Moreover, different income tax rates and different budgetary transfer levels for different labor categories may be added to wage income. After forecasting individual incomes, the PAMS computes the incidence of poverty and inequality between groups.

The PAMS technique consists of extending the relation between macroeconomic performances such as GDP growth, consumer prices, inflation, employment and the income of various groups in the economy. Income is broken down into several socio-economic groups and economic sectors. The model’s solution, which is a distribution dynamic process between several typical socio-economic groups, uses the representative household (RH) assumption. Each household being employed in a different economic sector, it is possible to disaggregate the production side of the economy. Since the labor market reflects the composition of the workers’ skills and the dichotomy between rural and urban sectors, the sectoral output growth and real wages effects on labor demand are of crucial importance to the PAMS model.

The PAMS’ labor/poverty module stimulates the labor market linked to the coherence of the SIPAE model. The PAMS model breaks down the economy into two main areas: the rural area and the urban area. Within each area, there exist a formal sector and an informal sector. Each sector is broken down into two sub-sectors, namely, the tradable goods sub-sector and the non-tradable goods sub-sector. This procedure permits to link each sub-sector on the production side to each labor market component. Demographic elements, categories of skilled workers, and exogenous migrations affect labor supply. The demand for labor is broken down into economic sector, levels of skilled

workers, and urban/rural area, and it is a positive function of sectoral output, and a negative function of real wages. The fiscal aspects of transfers and social expenditures permits to make average transfers and the average tax of a representative household in order to estimate each representative household's disposable income. Hence, the PAMS may be used to analyze macroeconomic policy impacts and exogenous shocks (such as an exogenous rise or fall in growth, or a change in the sectoral composition of output) on individual households. Moreover, the PAMS may also help carry out past or counterfactual simulations.

4.4 PAMS-SIPAE Model

In the case of Cameroon, the PAMS model has been interfaced with the government's SIPAE model (see section 3.3 above) to simulate the impacts on income distribution and poverty of the main macroeconomic policies implemented in the context of the PRSP. The SIPAE model provides macroeconomic consistency to the PAMS-SIPAE model. The model's coefficients and relations are estimated with Cameroon's time-series data. The SIPAE model also provides accounting consistency both in real and nominal terms. It ensures the respect of the economic agents' budget constraints at the aggregate level. It also predicts changes in macro-variables such as GDP, public expenditures, taxes, private consumption, saving and investment, the balance of payments and the general price level used to carry out the projection of the poverty line.

The PAMS' labor market module, which generates income by group, is important for the estimation of poverty through a so-called household simulator. A relatively recent household survey (ECAM II) provided such data as the initial level of expenditure by economic sector of employment, skill levels, rural or urban area, and by formal or informal activity. The workers' average wage and non wage income in each representative household may consequently be calculated. Once disposable income is generated by the labor market, it becomes possible to project the income of each household or individual in the household by assuming that the income or expenditure of each individual changes in the same proportion as that of the group.

The use of the general price level and of disposable income makes it possible to carry out a projection of poverty and inequality indices. This projection is made possible by the household survey simulator, which constitutes the third block of the PAMS. The headcount ratio may be calculated on the individual level. Weighted calculations yield population on the national level. Unweighted calculations yield population at the sample level. The inequality indicator (the Gini and Theil in the present case) is calculated at the inter group level. The headcount ratio is a function of population, the labor market, disposable income, and the poverty line. The between-group Gini depends on labor demand and disposable income. The poverty line changes with the general price level.

In the context of the Cameroon PRSP, an impact analysis was carried out using the PAMS-SIPAE model. It helped to measure the impact on poverty of external shocks (such as terms of trade), changes in fiscal policy (such as public spending changes), or changes in structural reforms (e.g. physical, financial and social infrastructures). More concretely, the PRSP scenario is based on a set of key assumptions related to the

international environment, economic and social policies, and the efficient implementation of programs. Adverse external shocks (like currently high oil prices) would not only lower economic growth, hence increase poverty, but also force the government to undertake difficult adjustments in sectoral spending which could compromise the achievement of PRSP objectives. However, this PAMS-SIPAE model has at least two limitations. Firstly, it covers only a few challenges of economic policy-making and secondly, the representative household assumption adopted in the model could cause some problems insofar as behaviors across households are different.

4.5 Distributive Effects of Economic Policies (DEEP) Model

Frustrated by the absence of a domestic macroeconomic tool for forecasting economic indicators as well as measuring the impact of proposed and existing policies, the Integrated Social Development Center (ISODEC), a national non-governmental organization (NGO) initiated the building of an economic model, the Distributive Effects of Economic Policies (DEEP), see Kraev and Akolgo (2003). The aim of ISODEC is to build a computer-based dynamic economic model that will provide a clear understanding of the distributive tradeoffs imposed by the macroeconomic constraints, as well as the specific effects of particular government policies and external shocks on the income and quality of life of the poor and the marginalized in Ghana. The structure of the model is rooted in the structuralist tradition, as the structuralist approach places more emphasis on issues of income distribution and underutilization of productive capacity, both of great relevance for the present project, although mostly glossed over in neo-classically inspired models. In addition to the DEEP model, ISODEC also plans to produce a series of tools for supporting an informed discussion of macro and distributional impacts of government policies, specifically of stabilization and adjustment policy packages.

5. Institutional Issues

There are a variety of institutional issues that have limited a more thorough ex-ante poverty impact assessment of macroeconomic policies. A recent analysis of power structures and capacity aspects of macro-poverty linkages has been provided by Spence (2005). Spence draws attention to the influence of country-specific governance realities and international power structures on the role and influence of PSIAs. The importance of domestic policy priorities, processes and institutions points to the necessity of overcoming domestic capacity constraints on the use of PSIA tools.

In Cameroon, several constraints affect the conduct of ex-ante evaluation of macroeconomic policy impacts on poverty and social welfare. Given the fact that this type of evaluation does not have a precedent in the country, this in itself constraints the whole process. It is only a few years back that government agencies conducted for the first time an ex-ante evaluation of macroeconomic policy impact on poverty. Consequently, it may make it difficult for some categories of key economic agents to accept such an evaluation and even if they accept it, their participation in the process may be scanty. Other constraints are those which create and reinforce the gap between researchers and policymakers. Yet, the (formal and informal) networks, especially those

among and between researchers/research centers and decision-makers need to work as vehicles for the dissemination of scientific information to ensure a better formulation of policy objectives and their efficient implementation for poverty reduction.

In Ghana, the DEEP project was for example conceived based on the notion that macroeconomic policy issues appear arcane and abstract, yet government policies in that area have a direct impact on the well being of all Ghanaians. The development of the DEEP also hopes to address a number of problems that characterized the policy making process in the country. These problems include:

- a lack of transparency in current economic policymaking, especially regarding the underlying models and assumptions;
- an absence of a coherent framework to systematically assess social impacts of macroeconomic, especially budgetary, policies; and
- a lack of local capacity to discuss macroeconomic options and influence the final decisions.

As a result, the discussion of macroeconomic policy options has in both Cameroon and Ghana mainly taken place between the international financial institutions and the Ministry of Finance, without much information to, let alone participation of, civil society. This is particularly disappointing in the context of the PRSP process, which is supposed to be a society-wide participation effort. Until recently, the public PRSP discussions have never addressed the macroeconomic policy options and their implications for poverty reduction, but rather took the macroeconomic policy (presumably largely defined by the IMF) for granted and stopped at tweaking these around the edges.

5.1 Data Constraints

As in most developing countries, statistical services of the national governments of Cameroon and Ghana are responsible for collecting and publishing all sorts of data such as demographic and economic data, partly through conducting national censuses and household surveys.

In Cameroon, data related to poverty are both quantitative and qualitative. They essentially come from three households surveys: (1) the Enquête Budget Consommation (EBC), (2) the first Enquête Camerounaise Auprès des Ménages (ECAM-I), and the second Enquête Camerounaise Auprès des Ménages (ECAM-II), conducted respectively in 1983/84, 1996 and 2001 by the National Institute of Statistics (INS). The EBC aimed at several objectives and in particular, to give some indications on the structure of expenses and incomes of households according to the main demographic, geographical and socioeconomic characteristics of the population. The ECAM-I aimed at three main objectives: to measure the effects of crisis and adjustment measures on the level and standard of living of households; to establish the interrelations between the dimensions of the standards of living; and to analyze the tendencies and the evolutions in relation to the other sources of data. As the ECAM-I, the ECAM-II is a survey on household living conditions and its main objective was to act as a basis to the system of assessment and follow-up of Cameroon's poverty reduction program. The data of ECAM-I and ECAM-II

were the main sources of information for the formulation of, respectively, Cameroon's Interim-PRSP (of August 2000) and Cameroon's full PRSP (of April 2003).

In Ghana, the available data on poverty encompass both quantitative and qualitative sources with the latest set of quantitative poverty data being the fourth (1998-99) edition of the Ghana Living Standards Survey (GLSS). The GLSS examines poverty patterns and trends from three broad perspectives: consumption poverty, household assets, and human development. It aims to help improve understanding of living conditions in Ghana, especially among the poorer segments of the population. This report was expected to help planners and policy makers in Ghana design and implement appropriate poverty reduction strategies and was the main source of information used in the formulation of the Ghana Poverty Reduction Strategy. Other recent data stems from the 1998 Ghana Demographic and Health Survey (GDHS), the 2000 Population and Household Census and a 2003 survey on the basis of the Core Welfare Indicators Questionnaire (CWIQ). The CWIQ provides socio-economic indicators such as poverty levels, literacy levels, school enrollment rates, among others, but they do not assess the impact of specific economic policies or interventions aimed at reducing poverty. The GDHS compiles data on the demographic and health status of the country.

In addition, some qualitative data were derived from the 2000 Participatory Poverty Assessment, which was conducted in thirty-six communities through local community workshops, to better understand poverty from the perspective of poor people. This included their views on the causes and consequences of poverty as well as their priorities for action. Consultations took place at national and local levels, involving diverse groups including local authorities, NGOs, professional associations, religious bodies, research institutions and development partners. Combining qualitative surveys such as participatory poverty assessments with quantitative data such as household surveys are a powerful way to monitor progress not only from a range of aspects, but also to feed into policy design and implementation.

However, the data compiled by the Ghana Statistical Service (GSS) has sometimes been criticized for its alleged low quality. Some critics also doubt the neutrality of the GSS, as it is responsible to the Ministry of Finance and Economic Planning. There have been instances where some analysts have challenged the data produced by the GSS and there have also been instances where data produced by two state agencies (such as the GSS and the Bank of Ghana) differed substantially. Of course, like most public institutions in Ghana, the GSS has its own problems, such as inadequate human and material resources, which make it difficult for it to provide the data on a timely basis or provide comprehensive data. Particularly with the GPRS, it is important to have data disaggregated at the district level for monitoring purposes. This has been a serious handicap of the GSS data collection process, as they do not have a marked presence in the districts.

It is worth noting, however, that the existing poverty data allow a disaggregation by regions (though not by districts and lower levels) and by socio-economic groups and gender. Broadly comparable surveys have been conducted at several points in time and

give good indication of poverty trends. Unfortunately, the data on employment and labor markets, including information on the large informal sector, remain weak. Moreover, the government's excessive reliance on donor financing for the surveys conducted by the GSS can limit the timeliness of updates of key poverty statistics and can hamper the timely availability of surveys for informing policy decisions, as donors have their own schedules of disbursements. Future government budgets should provide resources to cover a greater share of the cost of such surveys.

The GSS has also constructed a poverty map for Ghana based on the Ghana Living Standards Survey (GLSS4) and the Housing & Population Census 2000. The recently developed methodology of poverty mapping permits the calculation of poverty and inequality indicators at very low levels of disaggregation, using the detailed information found in the survey and the exhaustive coverage of the Census. The current poverty covers the national level and do not cover the district and sub district structures. Work is currently proceeding to map the boundaries of metropolitan and area councils; sub-district maps are expected to become available soon.

The German Technical Cooperation Agency (GTZ) in collaboration with the Ministry of Local Government and Rural Development (MLGRD), the National Development Planning Commission (NDPC) and the National Poverty Reduction Project/ Social Investment Fund (SIF) have embarked on a project to prepare participatory poverty profiles and poverty maps in all the 110 districts as contribution towards a more effective pro-poor targeting of development initiatives. This participatory poverty profiling and poverty mapping methodology has been successfully piloted in two districts in Ghana, and is currently being implemented in 20 districts. The participatory dialogical approach is expected to bring together available quantitative data on poverty and the poor as well as qualitative information on how the poor perceive poverty, what they consider as the causes of their poverty, the coping mechanisms they employ in organizing their production, distribution and consumption of goods and services. The result of this dialogue is that the poor as well as the change agents' interest in helping to reduce poverty gain an enhanced mutual understanding of the factors and forces that keep the people poor, the minimum threshold of support that could get the poor out of the loop, and the available technical and human resource capacity on which poverty reduction support measures could be initiated. Information gathered from the poverty profiles and maps would also be useful in ex-ante poverty impact assessment

Excluding the more genuine models described in Section IV above, most CGE models that touched on poverty generally contain only very aggregate household categories, which limit their usefulness for poverty and income distribution analysis. Some modelers complain that the existing data does not assist in obtaining the relevant disaggregated data for a more comprehensive poverty analysis. For CGE models to be relevant, the linkage between macroeconomic aggregates and poverty indicators must be clearly specified and integrated. The analyses of poverty in Cameroon and Ghana are often based on household data, while most macroeconomic analyses are based on data from national accounts. Adapting CGE models to the analysis of income distribution and poverty issues so as to bring out the desired impact of macroeconomic policies using the

two sets of data mentioned above has been a major problem.

5.2 Role of IMF and World Bank in Ex-ante PSIA

It has become generally accepted by the IMF and the World Bank that ex-ante PSIA of macroeconomic policies are very important to inform the choice and design of policy as well as the sequencing of alternative policy options. The monitoring of a reform and its impacts can lead to refinement of the reform, a reconsideration of the pace/sequencing or institutional arrangements of the reform, or the introduction or strengthening of mitigation measures where there are negative impacts. An effective PSIA, if undertaken early enough to inform the design of a reform with clearly set out assumptions behind the analysis, can address the risk to policy implementation. It would also consider all stakeholders in the analysis and promote transparency about expected impacts to strengthen local ownership. In both Cameroon and Ghana, donors and other international institutions and agencies have contributed to the efforts being made at developing tools for PSIA through the funding of research and training activities.

A wide range of actors are involved either directly or indirectly in the policy-making process in Cameroon and Ghana, including government actors; non-governmental actors such as firms and associations, labour groups, non-profit and civil society organizations, academia; multilateral and bilateral donors, and joint technical groups made up of local and international experts. However, among these players, the role of international organizations like the IMF and the World Bank in directing and controlling the macroeconomic policies is quite enormous. Gomes and Lawson (2005) argues that the IMF continues to use a rigid economic model that fails to recognise the existence of different macroeconomic policy options and that unless the IMF takes more concrete steps to ensure policy flexibility and adopt PSIA, its commitment to poverty reduction will become rapidly discredited.

A basic first step towards macro-PSIA should be a clear discussion of the rationale behind a proposed quantitative macroeconomic framework. Assumptions underlying a program can then be clearly outlined and discussed. For example, in the run up to the agreement of a new Fund program or as part of an annual review, a series of debates should be held with a broad range of stakeholders prior to its agreement. At these debates the IMF should outline how they feel the quantitative framework proposed is the ideal one for optimizing progress towards the PRSP goals and/or the MDGs for that country. They should also outline what other scenarios or approaches were considered and why they have been rejected. This process would be enhanced by the incorporation of feedback and input from stakeholders. If the IMF is convinced of a certain set of targets, it is beholden on them to win this argument in the public domain, and particularly if it wants to increase the political will towards actually reaching these targets.

Some recent PRGF documents have made small attempts to address this with one-page sections in final staff reports entitled 'PSIA' which is a welcome move. However, as they are available after the program has been agreed they do little to increase ownership or options. In advance of the program, missions increasingly do meet with different stakeholders, but there is rarely a clear specification of what the new program targets are

likely to be and why. This is in spite of the IMF pressures on governments to open up their budget formulation to public debate.

The World Bank has developed a PSIA manual, a User's Guide to Poverty and Social Impact Analysis (available on the World Bank's website) to provide the conceptual framework and key elements of a good PSIA that is expected to be used by developing countries in conducting their PSIA. The Bank has also been involved in the first trial of PSIA in Ghana on undertaking PSIA in five sectors. In addition to this the Bank works with local agencies and helps build their capacity. The role of the IMF in contributing to ex-ante poverty impact assessment of macroeconomic policies however remains very limited. It is intriguing that for over two decades of policy prescriptions in Cameroon and Ghana and the embracing of the PRSP process, the IMF is not assisting either country with analyzing the impact of their macroeconomic policies on the poor. On the other hand, the African Economic Research Consortium (AERC) and World Bank Institute have been important in building capacity for analysis particularly macro analysis and poverty analysis in both Cameroon and Ghana.

6. Conclusion and Recommendations

The review of the existing studies and models shows clearly that much more can be done to analyze the impact of macroeconomic policies on poverty. While such studies and the development of models are usually costly, the benefits resulting from insights for policy-makers on policy options outweigh the costs. What also becomes clear from the review is that some local capacity already exists in both Cameroon and Ghana, which with the support of the government and donors, could carry out much of the needed analysis.

However, beefing up CGE modeling with other poverty analysis techniques does not make it a comprehensive ex-ante PSIA tool. Ex-ante PSIA must extend beyond the narrow analysis of issues based on a few macroeconomic indicators. Ex-ante PSIA must not only focus on the quantifiable indicators used in economic and poverty analysis but also the non-quantifiable indicators. Furthermore, the analysis should not only be at the macro level but disaggregated further to both meso and micro levels. For example, it is also important that the impacts on gender, the young and elderly be made explicit. Fontana and van der Meulen Rodgers (2005) have shown that women and men experience poverty differently and that taking gender inequalities into consideration in the design of CGE models can significantly improve our understanding of the mechanisms through which macroeconomic policies affect poverty. They review current approaches to gender modeling and suggests ways in which CGE models can be further developed to include gender features. The ideal combination of such features in a CGE model will vary, depending on the issues analyzed, the country context and data availability. They suggest that at a minimum, a gender-aware model should incorporate segmentation in labor markets and some representation of the unpaid household economy.

Furthermore, recognizing that the private sector, especially in the informal sector,

has important roles to play in reducing poverty in developing countries, it is recommended that models should clearly establish the linkage between macroeconomic policies and the private sector especially the informal sector. Hence, though these studies will need to make use of a comprehensive model that establishes in a more analytical and transparent way the links between macro-variables and poverty implications, we must not lose sight of the fact that the best policy recommendations cannot rely on any single approach. As a consequence, the advisors to policy decision-makers must be equipped with a whole set of new tools. For instance, using combined partial and general equilibrium techniques would be an excellent point of departure for informing decision-makers about the probable distributional impacts of tax system reforms.

While it would be desired that governments centralize the training and coordination of existing researchers, it would be critical that a broad participatory process of key stakeholders, including the poor themselves, are involved in reviewing the policy implications derived from the various studies and models. In addition to community participation in reviewing the policy implications, more use could be made from community participation in the data collection and data verification. Finally, there should be put in place a simple monitoring/evaluation system which is able to monitor regularly the progress made toward the targeted poverty indicators.

The three most specific recommendations that can be derived from the case studies of ex-ante poverty impact assessments of macroeconomic policies in Cameroon and Ghana are as follows:

- With regards to data issues: More efforts need to be made to ensure that accurate economic, social and other important data are available on a timely manner to address the major problem of the inadequacy of economic, social and other data. The data and statistics released must be accurate and credible. Politicians must present data and statistics as they are and not whitewash them. In addition, the timeliness of the data and its availability are paramount. The macroeconomic data must include indicators such as employment and income types.
- With regards to modeling framework: The macroeconomic framework should include all relevant factors that impact on poverty. The structure of the macroeconomic framework must be extended to cover relevant indicators having a direct impact on poverty. Social indicators must also form the bases of any poverty analysis. Hence, the framework will need to include political and cultural factors that impact on poverty.

With regards to evidence-based policy making: There must be conscious efforts to internalize the production and consumption of ex-ante PSIA in the country. Outward accountability in terms of policies must be curbed while inward accountability must be promoted. This also implies that efficiency in the generation and use of public resources must be part of any meaningful poverty analysis. Public officials must be legally mandated to release the data, the tools/methodologies, and the results of the analysis to the general public.

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