GHAMOD: A tax-benefit model for Ghana

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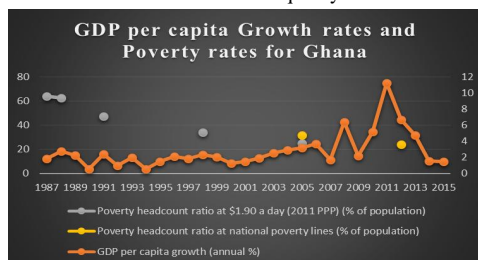*ISSER, University of Ghana*

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Introduction

Ghana: developing, but challenges are still huge.

The official headcount poverty rate dropped from 52 per cent in 1991–92 to 29 per cent in 2005–6.

Inequality has risen over the same period, hence poverty reduction has not been as fast as it would have been without increased inequality.

GDP per capita Growth rates and Poverty rates for Ghana

Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)
Poverty headcount ratio at national poverty lines (% of population)
GDP per capita growth (annual %)

Benefit system are in the very beginning. Also most reliefs are limited to taxes which are often not accessed

GHAMOD is the first microsimulation model of its kind

Few similar analytical models available for the rest of Africa or developing countries

SOUTHMOD project

GHAMOD is part of the SOUTHMOD project

Collaboration between the EUROMOD team, UNU-WIDER, SASPRI + universities of Leuven and Tampere

Uses EUROMOD as a platform for comparable models for 5 countries in Africa (Ethiopia, Ghana, Mozambique, Tanzania, Zambia) as well as Ecuador and Vietnam + updates SAMOD and NAMOD.

Models will be used for simulation of similar policies in these countries and they will become available free of charge.

The model and some results

Table showing Benefits and Taxes Simulated

Benefit/Tax in GHAMOD	Variable in EUROMOD	Simulated?
LEAP Transfer Program	bsa_gh	Yes, fully
State Pension	poa_gh	No
VAT	tva01_gh	Yes, fully
Capital Income Tax	tinniy_gh	Yes, fully
Labour Income Tax	tinna_gh	Yes, fully
School capitation Grant	bed_gh	Yes, Partially
Employee SSC and National Health Insurance Levy	tscee_gh	Yes,
Employer SSC	tscer_gh	Yes, fully

After running simulations we compare simulate results to the input data recorded + external sources from reports and journals.

Table on validation results (pov, ineq, tax revenues, LEAP)

	Simulated	In GLSS micro data	In external data
Household level			
Poverty Rate	25.60	24.20	24.20 [I]
Inequality, Gini Index	59.60	42.30	42.30 [I]
Gross Mean HH Income	14,268	16,405	
Mean Disposable HH Income	13,547	9,693	
Economy-Wide			
Total Income Tax Receipts (GHS Million)	5,0511.98		2,367.48 [II]
Total nr Of Income Taxpayers	11.20	6.9	
SSC Receipts (GHS Million)	2,026.01		1,159.71 [III]
School Capitation Grant Receipts (GHS Million)	302	161.41	24.47 [IV]
School Capitation Grant Recipients	1,992,459	47,358	1,739,357 [IV]
LEAP Receipts (GHS Million)	317	31.57	
LEAP Recipients	2,237,827	36,251**	70,000 [V]
External References			

** Pilot Phase of LEAP
I- Cooke, Edgar, Hague, Sarah & McKay, Andy. (2016). The Ghana Poverty and Inequality Report.
II- Ministry of Finance (2013). Budget Appendix,
III-SSNIT. (2013). Annual Report
IV-Ministry of Education (2016). Government of Ghana Portal. http://www.ghana.gov.gh/index.php/gov-t-projects/ministry-of-education
V-LEAP Impact Evaluation Report, 2014

A pension reform

We simulate the impacts of a pension that is given to all those above 65 and who do yet receive pensions.

The amounts given are the same as in the LEAP programme

Results:

Old-age poverty: from 32% to 28%

Mean hh benefits in a year: from 83 to 148 cedi

The costs (in 2013 cedis): 36 million

Taxes and transfers in Ghana

INCOME TAX / (PAYE): withheld from salaries of employees in order to satisfy their income tax responsibilities.
The rates:

Chargeable Income (GH¢)	Rate (%)	Tax (GH¢)	Cumulative Chargeable Income (GH¢)	Cumu Tax (GH¢)
First 1,584	Free	NIL	1,584	NIL
Next 792	5	39.60	2,376	39.60
Next 1,104	10	110.40	3,480	150
Next 28,200	17.5	4,935	31,680	5,085
Exceeding 31,680	25			

VAT: Value Added Tax (VAT) is a broad-based tax imposed on the expenditure of consumers. The current standard rate of the tax is 15 percent. A zero (0) rate is also applied to all exports.

NATIONAL HEALTH INSURANCE LEVY (NHIL): The NHIL is imposed otherwise exempted on items supplied in or imported into the country at a rate of 2½ on the VAT exclusive selling price .

Pensions: Private pensions are not common but deductions for public pensions are done mainly for formal sector employees and managed by the Social Security and National Insurance Trust (SSNIT). Calculated on the gross salary, employees contribute 5.5% whiles employees contribute 13%.

Livelihood Empowerment Against Poverty (LEAP): This is a social protection scheme to provide a cushion for poor households to encourage them to seek capacity development and other empowering objectives. Eligibility includes; OVC's, extremely poor, Aged/Disabled individuals with limited capacity to work.

Data

The GLSS

The Ghana Living Standards Survey (GLSS) is a nation-wide household survey which provides information in assessing the living condition of the Ghanaian households.

It is an important tool for welfare monitoring which started between 1991 and 1992. Official poverty estimates based on the data.

The Ghana Microsimulation model employs the Ghana Living Standards Survey Round 6 (**GLSS-6**) as its primary data source.

GLSS-6 is both regionally and nationally representative. A total of 18,000 households in 1,200 Enumeration Areas were selected for the survey. Data was however obtained from 16,772 households.

Reconciling GLSS-6 and EUROMOD:

Personal Sheet was fully synchronized to EUROMOD

Labour Sheet was fully synchronized with EUROMOD with the exception of one variable "**lpemy**" – The number of months spent in retirement.

Assets Sheet was also synchronized with EUROMOD.

Income Sheet, however not complete due to the nature of the GLSS-6 questionnaire. – The GLSS has traditionally relied more on expenditures given the very large informal sector. Also, gross incomes used were deduced from net incomes

The way forward

In terms of the next steps in modelling, Policy swaps will be experimented. First, some European policies for benefits like Guaranteed Pensions and Unemployment Allowance will be introduced. Also, some policies in similar developing countries will be experimented.

Analysis of indirect taxes (the VAT, excises) underway

In terms of other policies to be simulated GHAMOD will look at the policies for subsequent years and try to model them to allow easy comparison with the baseline data and results in 2013

Planning dissemination and policy take-up

References

Act, I.R. (2000). The Internal Revenue Act 2000 (Act 592).
Alagidede, P., W. Baah-Boateng, and E. Nketiah-Amponsah (2013).' The Ghanaian economy: An overview'. Ghanaian Journal of Economics, 1(1): 4–34.
GSS (2007) 'Patterns and trends of poverty in Ghana'. Accra: Ghana Statistical Service.
GSS (2014a) 'The Ghana Livings Standards Survey GLSS6'. Accra: Ghana Statistical Service.
GSS (2014b) 'Poverty profile in Ghana: 2005–2013'. Accra: Ghana Statistical Service.

Contact

https://www.wider.unu.edu/project/southmod-simulating-tax-and-benefit-policies-development
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