

The Distributional Impact of Tax-Benefit Systems in Six African Countries

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Background

- Taxation and social protection systems are crucial policy instruments for governments to pursue distributional goals of reducing inequality and poverty
- But informed policy decisions require:
 - An assessment of the distributional impact of public policies and the effects of measures on inequality/poverty
 - Ex-ante evaluation of reform ideas
 - Estimates of the fiscal impact of public policies and potential reforms
- Researchers/policy makers in developed countries make use of taxbenefit microsimulation models but few developing countries have access to such tools.



Our contribution

- Extensive literature on the distributional impact of taxes and benefits but very few studies focus on lower and middle-income countries (LMICs) in Africa (Inchauste & Lustig, 2017, Younger at al., 2016 & 2017)
 - Our focus is on poverty and inequality measured (mostly) in terms of income
 - We use six state-of-the-arttax-benefit microsimulation models developed or updated under the SOUTHMOD project
 - We assess the distribution and composition of incomes and the effects of taxes and benefits on poverty and inequality in six African countries for a common time point (tax-benefit rules as of 30 June 2015, 1 July 2015 for Tanzania)



SOUTHMOD tax-benefit microsimulation models

- Developed by: UNU-WIDER, Southern African Social Policy Research Insights (SASPRI), the EUROMOD team at the University of Essex together with local country teams.
- Based on EUROMOD, a widely used tax-benefit model for the EU
 - Use of common platform and well-tested methodological approach
 - Flexible and freely-available EUROMOD software as a shortcut to the process of building tax-benefit models
- Analysis based on models for 3 Low-income sub-Saharan countries (Ethiopia, Mozambique, Tanzania), 2 Lower-middle income countries (Ghana, Zambia), 1 Upper-middle income country (South Africa)
- Simulation of cash benefits, in-kind benefits (in some countries), SIC, direct taxes and indirect taxes
- Make use of country specific household surveys





Data & simulation challenges in brief

- Lack of comparative sub-population variables and consistent category definitions for available variables
- Consumption data not included in SAMOD, available for Ethiopia but not sure about the quality
- Benefit non-take up and/or restricted roll-out
- Country-specific uprating indices, equivalence scales and poverty lines
- Paucity of external statistics for validation

More details in: Barnes, H., Noble, M., Wright, G., Gasior, K., Leventi, C. (forthcoming) Improving the comparability of the SOUTHMOD tax-benefit microsimulation models. UNU-WIDER Technical Note.



Applied income concepts



Consumption

Incl. indirect taxes







Basic population characteristics

	ET	GH	MZ	SA	TZ	ZM
Average age	22	25	21	28	23	22
Average household size	5	4	5	4	5	5
Aged 0-14	45%	39%	49%	30%	44%	43%
Aged 15-59	55%	61%	51%	70%	56%	57%
Aged 60+	6%	7%	5%	8%	6%	4%
Single	17%	21%	13%	37%	18%	21%
Married/partnership	32%	32%	32%	26%	32%	29%
Separated/divorced	3%	4%	3%	2%	3%	3%
Widowed	3%	4%	3%	4%	4%	3%
% with earnings	4%	11%	6%	25%	6%	7%
% with self-empl. income	18%	25%	9%	6%	10%	17%



RESULTS





Results: Quintile shares (%), mean & median using disposable income

	ET	GH	MZ	SA	TZ	ZM
1 st quintile share	1%	1%	2%	2%	0%	0%
2 nd quintile share	3%	3%	3%	4%	1%	1%
3 rd quintile share	5%	7%	5%	9%	4%	5%
4 th quintile share	8%	14%	10%	19%	11%	14%
5 th quintile share	84%	75%	80%	67%	84%	79%
Median	263	1,666	136	3,056	260	283
Mean	1,153	4,928	651	7,386	1,470	1,221

Source: Own calculations.

Notes: Annual values in international dollars; per capita incomes; household-level results.



Results: Poverty rates using different income thresholds

	ET	GH	MZ	SA	TZ	ZM
Disp. income < \$1.9/day	85.9	31.1	83.8	12.9	72.6	70.8
Disp. income < \$3.2/day	92.9	44.9	90.8	28.9	81.2	79.2
Disp. income < \$5.5/day	96.7	60.6	95.4	46.6	89.0	86.2
Post-fiscal < \$1.9/day	87.3	32.3	85.7	15.6	74.9	71.7
Post-fiscal < \$3.2/day	93.5	46.4	91.9	31.5	83.0	79.7
Post-fiscal < \$5.5/day	96.9	61.6	96.0	49.4	90.0	86.6
Consumption < \$1.9/day		9.2	54.7		35.0	52.6
Consumption < \$3.2/day		27.2	79.8		69.6	69.9
Consumption < \$5.5/day		54.4	92.3		89.2	84.2
Consumption < nat. poverty		38.7	40.9		46.2	60.1
Consump. (NES) < nat. pov.		24.2	40.9		29.9	55.1
Consump. (WDI) < nat. pov.		(24.2)	(46.1)		(28.2)	(54.4)

Source: Own calculations, World Bank (Consumption WDI).

Note: All income-based results are in per capita terms; consumption-based results are presented both in per capita terms (PC) and using national equivalence scales (NES). Results for Consumption (WDI) refer to different years (2012 in Ghana, 2014 in Mozambique, 2011 in Tanzania and 2015 in Zambia).

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Results: Poverty rates based on \$1.9/day poverty threshold using different income concepts

	ET	GH	MZ	SA	TZ	ZM
Orig. income	85.0	30.7	83.2	35.1	72.5	70.1
+ pensions	84.9	30.7	82.8	27.9	72.5	70.1
+ all benefits	84.9	30.6	82.3	12.9	72.4	70.0
+ all benefits - SIC	85.0	30.7	82.5	12.9	72.4	70.2
+ all benefits - taxes	85.4	31.0	83.5	12.9	72.6	70.5
Disposable income	85.9	31.1	83.8	12.9	72.6	70.8
Post-fiscal income	87.3	32.3	85.7	15.6	74.9	71.7

Source: Own calculations. Note: All results are in per capita terms.



Results: Gini coefficient using different income concepts

	ET	GH	MZ	SA	TZ	ZM
Orig. income	86.2	71.3	75.0	66.3	79.9	73.4
+ pensions	86.1	71.3	74.9	66.2	79.9	73.4
+ all benefits	86.0	71.3	75.8	65.2	80.0	73.4
+ all benefits - SIC	86.0	71.3	75.5	65.2	79.9	73.1
+ all benefits - taxes	81.8	70.8	75.1	62.4	77.7	72.5
Disposable income	81.8	70.8	74.8	62.4	77.6	72.0
Post-fiscal income	83.4	71.1	76.3	63.0	77.5	71.5
Consumption based		44.0	52.3		38.9	59.0
Consumption (WDI)	•	(42.4)	(54.0)	•	(37.8)	(57.1)

Source: Own calculations, World Bank (Gini WDI)

Notes: Household-level results, in per capita terms. Results for Gini (WDI) are based on national equivalence scales and refer to different years (2012 in Ghana, 2008 in Mozambique, 2011 in Tanzania and 2015 in Zambia).





Summary/Conclusion

- With the exception of South Africa, poverty rates (using \$1.9 per capita per day) are largely unaffected by the tax and benefit arrangements
- In contrast, income inequality is reduced by the tax and benefit arrangements in each country, using *disposable income*.
- Income inequality is higher than in South Africa in all five comparator countries, whether one uses original income, disposable income, or post-fiscal income



Summary/Conclusion

- The use of EUROMOD software as a common platform with common concepts and terminology enables cross-country analysis of tax-benefit arrangements
- More to be done to hone the comparability of the country models and to take into account compliance levels and takeup/roll-out of benefits
- More to be done to scrutinise the quality of the underpinning data, especially the income data
- SOUTHMOD tax-benefit microsimulation models provide a good basis for exploring and potentially improving the tax-benefit systems in these six African countries.





THANK YOU

In case of further suggestions and comments, please contact: <u>k.gasior@essex.ac.uk</u>

Further information:

Gasior, K., Leventi, C., Barnes, H., Noble, M., Wright, G. (forthcoming) The Distributional Impact of Tax and Benefit Systems in Six African Countries. UNU-WIDER Working Paper.

Barnes, H., Noble, M., Wright, G., Gasior, K., Leventi, C. (forthcoming) Improving the comparability of the SOUTHMOD tax-benefit microsimulation models. UNU-WIDER Technical Note.

EUROMOD: <u>https://www.euromod.ac.uk/</u>

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









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SOUTHMOD available for:









