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SOUTHMOD

This presentation

- General material about SOUTHMOD
- Ghana paper
  - One dynamic step: formality

SOUTHMOD project

- Social protection and DRM increasingly important
- Developing countries need suitable tools to plan ahead
- Microsim and EUROMOD offer such a tool

- EUROMOD, SASPRI and KU Leuven senior developing country partners
- Country teams

SOUTHMOD country models as of 2018

Ecuador

Ethiopia

Ghana

Mozambique

Tanzania

Viet Nam

Zambia

Uganda – work in progress

plus updates of existing models for **Namibia** and **South Africa**

saspri

University of Essex

EUROMOD

UNITED NATIONS UNIVERSITY
UNU-WIDER

Activities

- Models maintained: data, policy updates
- Training sessions, users group: policy uptake
- 1 Special issue from the 1st batch of work
- An RFRP and WP:s from it (approximately 10 papers) by end 2019
- Software development
  - Sum stats tool

SOUTHMOD in numbers

policy updates per country model

2

1

Special issue forthcoming in the International Journal of Microsimulation

48

research papers

feasibility studies

technical notes

country reports

Average number of policies modelled per country

12

training participants

government officials

researchers

342

45

team members

3

software updates

saspri

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Please do get engaged

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

Mixing Nordic and developing country public economics researchers is a match made in heaven!

INSTITUTO DE ALTOS ESTUDIOS NACIONALES
LA UNIVERSIDAD DE POSGRADO DEL ESTADO

República de Moçambique
Ministério da Economia e Finanças

Quantifying the Impacts of Expanding Social Protection on Efficiency and Equity: Evidence from a Behavioral Microsimulation Model for Ghana

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Motivation

- Developing countries are in the process of scaling up their social protection systems
  - necessary to achieve SDGs
- Increasinly, these policies need to be financed by domestic revenue mobilization
- At the same time, these countries need to worry about the extent of formal sector jobs. Higher taxes can lead to a reduction in the size of the formal sector
  - How severe is the possible trade off between better social protection and economic efficiency?

This study

- This paper uses GHAMOD, the new tax-benefit microsimulation model for Ghana (Adu-Ababio, Osei, Pirttilä, and Rattenhuber, 2017), to simulate the impacts of expanding social protection on poverty and inequality
- This is done via increasing the scope and the generosity of the existing main Ghanainan transfer programme, the LEAP
- We consider both the impacts of expanding social protection alone and those of a revenue-neutral scheme, where the programme expansion is funded via an increase in the flat payroll tax rate
- The estimates are combined with evidence on the elasticity of the formal work with respect to the tax burden on the formal sector labour
    - We are able also take into account, we would argue, the key distortionary impacts of taxes in a country like Ghana = behavioural microsimulation

Where do the elasticities come from?

- There is some quasi-experimental evidence on the impacts of tax-and-benefit systems on formal work in the Latin American context, see for instance Alzúa, Cruces, and Ripani (2012); Garganta and Gasparini (2015); Bergolo and Cruces (2014).
- Such evidence has not been available, to our knowledge, from African countries until work by by (McKay, Pirttilä, and Schimanski, 2018).
- That paper provides evidence on a the formality elasticity for a number of African countries; and we use the estimates for Ghana from those
- Their method builds on applying the repeated cross-section estimator by Blundell, Duncan, and Meghir (1998), which was used in a cross-country setting by Jäntti, Pirttilä, and Selin (2015)
- In this talk, the estimations are skipped in the interest of time

Simulation example

1. The existing LEAP transfer system is extended and made more generous as follows:
   - The eligibility threshold is raised from consumption per adult equivalent of 446 to twice that amount, i.e. 892 Cedi.
   - The amounts are further raised by 100% for those below the initial threshold (i.e. the 446 line)
   - Instead of caregivers of OVCs, all household with under-age chidren who fall below the consumption threshold are eligibible
2. Introduction of a universal old-age pension, where the amounts per recipients are the same as in the LEAP transfer system, and the pension is given to all persons who are 65 years-of-age or older and who do not collect any pensions yet.

Financing and behavioural impacts

- We also consider a fully financed scheme by raising the payroll tax of the employees sufficiently (8 %-points)
- Assuming (as always in microsimulation) full incidence on workers, we can calculate the impact of this on net pay in the state of formal work.
- We combine this with an estimated elasticity (0.1) of the share of formal work with respect to the difference in net pay between formal and informal work
- %-change in the share of formal sector work = formality elasticity * %-change in the net pay between formal and informal work
- Implemented in the microsimulation by changing the sample weights so that the new share of formal work is reached and the sum of weights is retained

Results: Government revenue

	Status quo (I)	Non-revenue neutral extension of social protection (II)	Revenue-neutral reform (III)	Revenue-neutral reform with behavioral impacts (IV)
LEAP transfer	3	274	274	274
Pension reform	0	437	437	437
Employee SSC	486	486	1192	1179
Employer SSC	1067	1067	1067	1055
Income tax revenue	2060	2060	2060	2038
Change in costs vz. status quo		707	4	45

Notes: The budgetary implications are expressed in millions of Ghanaian Cedi.

Table: Simulation results of expanding social protection on government budget.
Source: Authors' calculations using GHAMOD.

Results: Poverty and Inequality

	Status quo (I)	Non-revenue neutral extension of social protection (II)	Revenue-neutral reform (III)	Revenue-neutral reform with behavioral impacts (IV)
Poverty				
All	24.9	24.1	24.3	24.4
Households with children	27.4	26.7	26.9	27.0
Households with older persons	33.7	29.3	29.3	29.4
Gini	0.417	0.408	0.408	0.408

Notes: Poverty rates measured using consumption-based absolute poverty line of 1314 Ghanaian Cedi per adult equivalent per year. The Gini index is also for consumption.

Table: Simulation results of expanding social protection on poverty and inequality.
Source: Authors' calculations using GHAMOD.

Conclusion

- Because of the narrow tax base, the tax rate increase needed to finance the social protection expansion is sizable
- The distributional benefits of the programme expansion remain even in the revenue-neutral case
- Because of the modest estimated formality elasticity, taking into account behavioural changes does not erode the distributional gains of the reform
- Caveats:
  - the actual monetary amounts need to be interpreted cautiously, since the model does not exactly match the revenue numbers by the tax authority
  - extensive margin alone, impact on taxable income at the intensive margin?
  - no leakage in programme implementation

References I

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