A role for universal pension? Simulating universal pensions in Ecuador, Ghana, Tanzania and South Africa

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Motivation

- **Sustainable Development Goals** highlight the importance of **social protection** and **domestic revenue mobilization**
  - Yet, many developing countries do not provide social security for old-age even if the dependency ratio of the elderly has increased
  - Affordability of social protection is a challenge in developing countries
- Microsimulation model is a **capable tool** for analysing (first-round) effects of **tax-benefit policies** on **poverty and inequality**
  - Static tax-benefit microsimulation models are common in developed countries but rarely available in developing countries
- Only few previous studies use microsimulation for comparing effects of (universal) social protection policy across different developing countries
This study

- We use four novel, cross-country comparable, static tax-benefit microsimulation models to evaluate ex ante a universal pension in four developing countries (Ecuador, Ghana, Tanzania and South Africa)
  - for more information about the models, see the SOUTHMOD project page
- Three different universal pension reform scenarios
- Estimate distributional measures from simulated data:
  1. The headcount index (FGT(0))
  2. The poverty gap index (FGT(1))
  3. Gini coefficient
- Compare estimates to status quo and between different reform scenarios
- Analyse costs of interventions
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Why choose four countries for analysis?

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<tr>
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<th>Economic status</th>
<th>Social protection</th>
<th>Dependency ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>GH</td>
<td>Lower middle</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>TZ</td>
<td>Low</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>EC</td>
<td>Upper middle</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>Upper middle</td>
<td>High</td>
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</table>

Table 1: Economic and demographic development across countries

- All countries have similar interests and concerns regarding social protection
- SOUTHMOD microsimulation models
  - Allow detailed implementation of different reform scenarios thanks to versatility of the EUROMOD platform
  - Allow comparison across countries
Existing pension schemes

- **GH**: Only contributory based pension schemes with low coverage
- **TZ (mainland)**: Only contributory pension schemes with low, fragmented coverage
- **EC**: Means-tested pension scheme and contributory pension system, combined coverage of 62% of population aged 65 years or older (HelpAge International, 2017)
- **SA**: Minimum pension scheme which is targeted (means-tested) to poor citizens with coverage of 74% of population aged 60 years or older (HelpAge International, 2017); also contributory schemes for workers
Design of universal pension reform

- Three different universal pension reforms:
  1. **R1** (generous, national): 60 years or older and benefit amount is 50% of the national poverty line (generous benefit and wide coverage)
  2. **R2** (small, national): 70 years or older and benefit amount is 50% of the food poverty line (limited benefit and low coverage)
  3. **R3** (WB): 60 years or older and benefit amount is 50% of the World Bank USD 3.10 a day line (internationally more comparable)

- The **largest benefit amount** in **R1** in GH, EC and SA, and in **R3** in TZ

- For Ecuador and South Africa we compare reforms for both maintaining and abolishing existing targeted pension systems
  - if maintaining, universal pension is given as a top-up for existing pension
  - if abolishing, everyone gets only universal pension
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## Coverage rates under reform 1 (in %)

<table>
<thead>
<tr>
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<th>GH</th>
<th>TZ</th>
<th>EC</th>
<th>SA</th>
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<tbody>
<tr>
<td>Seniors (60+) out</td>
<td>6.6</td>
<td>5.8</td>
<td>8.3</td>
<td>8.1</td>
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<tr>
<td>of total population</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Recipients out of age</td>
<td>96.9</td>
<td>99.4</td>
<td></td>
<td></td>
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<tr>
<td>group (60+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Abolish minimum pension</td>
<td></td>
<td></td>
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<tr>
<td>Recipients out of age</td>
<td></td>
<td></td>
<td>81.3</td>
<td>100.0</td>
</tr>
<tr>
<td>group (60+)</td>
<td></td>
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<tr>
<td>Top-up universal pension</td>
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<tr>
<td>Recipients out of age</td>
<td></td>
<td></td>
<td>51.3</td>
<td>14.4</td>
</tr>
<tr>
<td>group (60+)</td>
<td></td>
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Notes: Recipients under R1 (benefit for seniors age 60 or older).

**Table 2:** Coverage rates of the universal pension. Source: Authors’ own calculations.
Figure 1: Poverty estimates for Ghana and Tanzania. Source: Authors’ own calculations.
Inequality – Ghana and Tanzania

- Inequality is going down, especially among the elderly population
  - In **GH**, **R1** (generous, national) decreases Gini coefficient by 3.4% in the recipient group and 1.2% in total population (status quo: 0.44 and 0.43)
  - In **TZ**, **R3** (WB) inequality among elderly population is lower than in total population under the status quo (0.37 vs 0.42) and it is going down by 4% in the recipient group
Poverty and inequality – Ecuador and South Africa: abolishing existing schemes

- In **EC**, when abolishing the existing targeted pension scheme,
  - **R1** (generous, national) reduces poverty and inequality of the total population and the recipients group (in rec. group FGT(0) 0.18 vs 0.21, Gini 0.52 vs 0.53)
  - **R2** (small, national) increases both poverty and inequality
  - **R3** (WB) has almost **no impact**

- In **SA**,
  - All reforms increase poverty and inequality (in rec. group for **R1** (generous, national) FGT(0) 0.61 vs 0.46, Gini 0.70 vs 0.65)
    - Due to loosely-targeted and more generous existing scheme
Poverty and inequality – Ecuador and South Africa: maintaining existing schemes

- In **EC**, when maintaining existing pension scheme and comparing top-up universal pension to existing pension scheme
  - Both poverty and inequality is **decreased** in all reforms
  - The existing means-tested pension does not capture all poor elderly citizens
  - Poverty and inequality **decrease most in R1** (generous, national) in the recipient group (headcount poverty by 19%, poverty gap index by 33% and Gini coefficient by 2.9%)

- In **SA**,
  - All reforms have almost **no impact** on poverty and inequality
  - the top-up universal pension is going to citizens who are not poor since existing targeted pension has high coverage among poor elderly
Expenditure analysis

<table>
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<th>GH</th>
<th>TZ</th>
<th>EC</th>
<th>SA</th>
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<tbody>
<tr>
<td>As share of GDP (in %)</td>
<td>0.4 - 1.2</td>
<td>0.3 - 1.3</td>
<td>0.4 - 1.6</td>
<td>0.2 - 0.9</td>
</tr>
<tr>
<td>As share of government revenue (in %)</td>
<td>2.2 - 7.4</td>
<td>2.1 - 8.7</td>
<td>0.2 - 1.0</td>
<td>0.5 - 2.3</td>
</tr>
<tr>
<td>As share of total direct tax receipt (in %)</td>
<td>5.6 - 18.4</td>
<td>7.8 - 33.1</td>
<td>3.8 - 14.8</td>
<td>1.0 - 5.2</td>
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Notes: For Ecuador and South Africa, estimates for scenario where existing targeted pension is abolished.

Table 3: Expenditure on the universal pension. Source: Authors’ own calculations.
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- Unsurprisingly, we find that both poverty and inequality decrease in GH and TZ where existing schemes reach very few elderly.
- In EC and SA results depend on the coverage and generosity of existing pension schemes.
- The costs of the proposed reforms vary considerably between countries and reform scenario; costs are larger in GH and TZ where domestic revenue mobilization capacity is lower than in EC and SA.
- **Caveats:**
  - We do not provide revenue-neutral reforms.
  - country-specific studies
  - Harmonisation of models is an ongoing process.
  - Models are static, we abstract from behavioural changes.
References


