To Target or Not to Target?
The cost efficiency of indicator-based targeting

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Introduction
- Most development programs are poorly targeted at the population in need.
- Low targeting efficiency is an impediment to achieving the Millennium Development Goals.
- E.g. Malawi 2000/01 Starter Pack, 2006/07 Agricultural Input Subsidy Program (AISP).
- Is an indicator-based system more target- and cost-efficient than the current methods used for targeting development programs in Malawi?

Research Objectives
- Develop & validate an indicator-based system for targeting Malawi’s poor.
- Estimate the costs of targeting development programs using the system.
- Compare the performances of the system to previous programs.

Data and Methodology
- Second Malawi Integrated Household Survey data (IHS2-2005).
- Poverty measured by consumption expenditures & national poverty line.
- Initial sample split into two: 67/33 calibration sample to estimate the model; validation sample to predict the status of the poor.

Estimation method: Quantile regression & stepwise selection of variables.

\[ y_i = \beta_j x_{ij} + e_i \]

Table 1. Selected targeting ratios

<table>
<thead>
<tr>
<th>Targeting ratios</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty Accuracy</td>
<td>Number of poor correctly predicted, expressed as a percentage of the total number of poor.</td>
</tr>
<tr>
<td>Undercoverage</td>
<td>Error of predicting the poor as non-poor, expressed as a percentage of the total number of poor.</td>
</tr>
<tr>
<td>Leakage</td>
<td>Error of predicting non-poor as poor, expressed as a percentage of the total number of poor.</td>
</tr>
</tbody>
</table>

Source: Adapted from IRIS (2005).

- Costs of targeting estimated following Besley and Kanbur (1993):
  \[ T = P + NP + A + H \]
  T: total program cost; P: value of transfers given to the poor; NP: value of transfers given to the non-poor (costs of leakage); A: administrative costs; H: hidden costs (private, indirect, social, and political costs).

- Targeting efficiency measured by (Besley and Kanbur, 1993):
  \[ F = \frac{100}{P + NP} \]
  \[ F_1 = \frac{(NP + A + H)/P} \]
  \[ F_2 = \frac{100/(P + NP + A + H)} \]
  F: transfer to the poor as a % of total transfer; F1: costs of transferring one unit of resources to the poor; F2: transfer to the poor as a % of total cost.

Empirical Results

Table 2. Targeting performances of Starter Pack and AISP Vs. Indicator-based system

<table>
<thead>
<tr>
<th>Program type</th>
<th>Poverty accuracy (%)</th>
<th>Undercoverage (%)</th>
<th>Leakage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starter Pack</td>
<td>65.02</td>
<td>34.98</td>
<td>61.81</td>
</tr>
<tr>
<td>AISP</td>
<td>54.00</td>
<td>46.00</td>
<td>54.00</td>
</tr>
<tr>
<td>Indicator-based</td>
<td>71.48</td>
<td>28.52</td>
<td>26.65</td>
</tr>
</tbody>
</table>

Source: Own results based on Malawi IHS2 data. Estimates based on Dorward et al. (2008).

- The new system is more target-effective: higher poverty accuracy (71%) and lower leakage (27%) compared to the Starter Pack and AISP.
- Nonetheless, the new system is not perfect at targeting the poor.

Table 3. Cost and transfer efficiency of Starter Pack and AISP Vs. Indicator-based system

<table>
<thead>
<tr>
<th>Programs</th>
<th>Costs of Transfer to the poor</th>
<th>Costs of leakage &amp; hidden costs</th>
<th>Total costs</th>
<th>F</th>
<th>F1</th>
<th>F2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Starter Pack</td>
<td>562.61</td>
<td>534.84</td>
<td>205.16</td>
<td>1302.62</td>
<td>51.27</td>
<td>1.32</td>
</tr>
<tr>
<td>AISP</td>
<td>649.97</td>
<td>242.33</td>
<td>410.33</td>
<td>1302.62</td>
<td>72.84</td>
<td>1.00</td>
</tr>
<tr>
<td>Indicator-based</td>
<td>3386.71</td>
<td>1262.67</td>
<td>2138.03</td>
<td>6787.41</td>
<td>72.84</td>
<td>1.00</td>
</tr>
</tbody>
</table>


- The new system transfers more resources: 73% of total transfer reach the poor compared to 51% and 49% under the Starter Pack and AISP, respectively.
- The new system is more cost-efficient: it costs MK1 for every MK transferred to the poor Vs. MK1.32 and MK1.44 under the Starter Pack and AISP, respectively.
- The costs of leakage are cut down by 50% under the new system.

Conclusions
- This paper develops an indicator-based system for targeting Malawi’s poor.
- Although not perfect, the system is more target- and cost-efficient compared to previous development programs in the country.
- Under the system, more resources are transferred to the poor at lower costs.
- Implication for Malawi: better target development policies using an indicator-based system.
- This research can be applied in other countries with similar targeting problems.

Selected References