How can fiscal policy be better aligned with scaling up service delivery?

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Making Services Work for Poor People

World Bank

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Scaling Up Service Delivery Innovations and Income Poverty Reduction: Is there a Trade-off?
Based on Higgins & Lustig (2014)…

• Trade-off is likely to exist whenever you need to mobilize domestic resources through, for example, consumption taxes

• Standard poverty measures might fail to capture that poor are made poorer by the tax system

• Propose a measure of fiscal impoverishment that is axiomatically derived which can tell you how much you really need to compensate the poor

• Dominance criteria to compare among alternative forms of mobilizing domestic resources (no time to show today)
Commitment to Equity Framework
(Joint project Inter-American Dialogue & Tulane U.)

• Impact of taxes and transfers on income inequality and poverty

• Fiscal Incidence (accounting approach)

• Services = In-kind Transfers on Education and Health valued at government cost

http://www.commitmenttoequity.org
What is CEQ

The Commitment to Equity (CEQ) is a joint project of CIPR and the Department of Economics at Tulane University and the Inter-American Dialogue. Directed by Nora Lustig, the CEQ was designed to analyze the impact of taxation and social spending on inequality and poverty in individual countries, and provide a roadmap for governments, multilateral institutions, and nongovernmental organizations in their efforts to build more equitable societies.
Public spending on education and health and inequality

(Gini coefficient by income concept. Source: CEQ 2013; authors listed at the end)
Brazil: Gini Coefficient for Each Income Concept (Higgins and Pereira, 2014)
Brazil: Usage of School Services by Level and Income Concept (Higgins&Pereira, 2014)

Insufficient Coverage

Opting Out

- Pre-school
- Primary
- Secondary
The Trade-off

• Let’s say you want to expand coverage of pre-school and secondary school for the poor and entice the middle-classes to use public schools
• If this requires more financial resources, most likely governments will have to resort to additional revenues
• The usual advice is to increase VATs and/or eliminate exemptions

>>>>>> Trade-off between scaling-up educational services and income poverty reduction emerges
Regressivity vs. Poverty Increasing

• Usually, concern is whether a tax or a proposed tax reform is regressive: i.e., increases inequality

• However, a tax or a tax reform can be neutral or even progressive and yet:

=>>>> it can cause poverty to increase

=>>>> it can make some of the poor poorer (and some of the nonpoor poor)
Brazil: Gini Coefficient for Each Income Concept (Higgins and Pereira, 2014)

Consumption Taxes Are Distributionally Neutral
How can we tell if the trade-off exists?

Higgins and Lustig (2014) show:

• standard poverty comparisons
• stochastic dominance tests
• measures of progressivity and horizontal inequity

=>>>>>fail to measure whether transfers to the poor are large enough to compensate them for what they pay in taxes.
Brazil: Poverty Rate at $2.5 PPP/day for Each Income Concept
Higgins and Pereira, 2014)
Figure 3: Cumulative distribution functions in Brazil.
Yet, there is impoverishment

Fiscal Mobility Matrix: Brazil

(Higgins and Lustig, 2014)

<table>
<thead>
<tr>
<th>Pre-tax and transfer income groups</th>
<th>&lt; $2.50</th>
<th>$2.50–$4.00</th>
<th>$4.00–$10.00</th>
<th>&gt; $10.00</th>
<th>% of Pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $2.50</td>
<td>85%</td>
<td>10%</td>
<td>4%</td>
<td>1%</td>
<td>15%</td>
</tr>
<tr>
<td>$2.50–$4.00</td>
<td>14%</td>
<td>75%</td>
<td>10%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>$4.00–$10.00</td>
<td>0%</td>
<td>13%</td>
<td>84%</td>
<td>3%</td>
<td>33%</td>
</tr>
<tr>
<td>&gt; $10.00</td>
<td>0%</td>
<td>0%</td>
<td>16%</td>
<td>84%</td>
<td>40%</td>
</tr>
<tr>
<td>% of Pop.</td>
<td>14%</td>
<td>14%</td>
<td>36%</td>
<td>36%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Fiscal Impoverishment
(Higgins & Lustig, 2014)

• Fiscal impoverishment (FI) occurs if some poor are made poorer—or some non-poor made poor — by the tax and transfer system

• In other words, it occurs if the post-fisc incomes of some (post-fisc) poor are lower than their pre-fisc incomes
Fiscal Impoverishment
(Higgins & Lustig, 2014)

• Measuring FI will tell us:
  • Whether trade-off exists
  • The order of magnitude of the trade-off
  • How much is needed in cash transfers to compensate the losing poor
  • Which reforms may be less impoverishing (dominance criteria)
Fiscal Impoverishment
(Higgins & Lustig, 2014)

• If the post-fisc distribution does not first order stochastically dominate the pre-fisc distribution on the domain of poverty lines, FI has occurred.

• A sufficient condition to be sure that FI has not occurred is the simultaneous observance of no reranking among the poor and first order stochastic dominance of the post-fisc over the pre-fisc distribution on the domain of poverty lines.
Measuring Fiscal Impoverishment  
(Higgins & Lustig, 2014)

- Fiscal Mobility Matrix
- Fiscal Impoverishment Headcount
  - wrt Total Population
  - wrt Total Post-Fisc Poor

Both have limitations
- Fiscal Impoverishment Gaps => Axiomatically Derived
## Fiscal Mobility Matrix: Brazil

*(Higgins and Lustig, 2014)*

<table>
<thead>
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<th>Pre-tax and transfer income groups</th>
<th>Post-tax and transfer income groups</th>
<th>% of Pop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; $2.50</td>
<td>&lt; $2.50</td>
<td>$2.50 –4.00</td>
</tr>
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<td>$2.50 –4.00</td>
<td>14%</td>
<td>75%</td>
</tr>
<tr>
<td>$4.00 –10.00</td>
<td>0%</td>
<td>13%</td>
</tr>
<tr>
<td>&gt; $10.00</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

% of Pop.:
- < $2.50: 14%
- $2.50 –4.00: 14%
- $4.00 –10.00: 36%
- > $10.00: 36%
- Total: 100%
**Fl Headcount** (Higgins & Lustig, 2014)

\[ h(y^0, y^1; z) = |A|^{-1} \sum_{i \in S} 1(y^1_i < y^0_i) 1(y^1_i < z) \]

- where \( A=S \) gives the proportion of the total population that is impoverished, while
  \[ A = \{ i \in S | y^1_i < z \} \]

gives the proportion of the post-fisc poor that are impoverished. \( I( \cdot ) \) is the indicator function which has a value of 1 if its argument is true and 0 otherwise.
FI Headcount in Brazil (Higgins & Lustig, 2014)

• 5 percent of the total population

• 30 (!) percent of the post-fisc poor were made poorer by the fiscal system
**FI Gap** (Higgins & Lustig, 2014)

- Axiomatically derived measure:

\[
f(y^0, y^1; z) = k \sum_{i \in S} \left( \min\{y^0_i, z\} - \min\{y^0_i, y^1_i, z\} \right)
\]

- The total impoverishment gaps multiplied by a factor of proportionality = \( k \)
- \( k \) can be chosen by practitioner. For ex,
  - \( k = 1 \) is the sum total of impoverishment gaps
  - \( k \) = number of post-fisc impoverished, per capita gap
**FI Gap** (Higgins & Lustig, 2014)

In Brazil, the FI Gap per capita for the post-fisc poor (with $2.50 poverty line) equals $0.19 per day or roughly 10% of the income of the post-fisc poor.
Conclusions

• Trade-off between scaling up service delivery if financed with consumption taxes (e.g., VAT) and income poverty-reduction is likely to exist

• Standard measures of poverty, dominance, progressivity and horizontal inequity can fail to capture that tax reforms may increase the number of impoverished

• We propose several measures of fiscal impoverishment, one axiomatically derived that gives us:
  • The order of magnitude of the trade-off
  • How much is needed in cash transfers at the minimum to compensate the losing poor
  • Which tax reforms may be less impoverishing (dominance criteria)
References


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