Taxes, Transfers, Inequality, and Poverty: Argentina, Bolivia, Brazil, Mexico, and Peru

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Inter-American Dialogue and Tulane University
Inter-American Development Bank
Washington, DC, May 15, 2012
Trends in Inequality

Gini Coefficient Early 1990’s-Late 2000’s (Unweighted ave.)
Light Grey: Countries with Falling Ineq (Lustig et al., 2011)
Commitment to Equity Project

• Commitment to Equity (CEQ) Project; Inter-American Dialogue and Tulane University’s CIPR and Dept. of Economics.
• Currently: 12 countries
• 6 in progress: Chile, Colombia, Costa Rica, El Salvador, Guatemala, Paraguay
• To begin soon: Dominican Republic
• Branching out into other regions
Commitment to Equity Project

- **Argentina**: Carola Pessino (CGD and CEMA)
- **Bolivia**: George Gray Molina (UNDP), Wilson Jimenez, Veronica Paz and Ernesto Yañez (Instituto Alternativo, La Paz,
- **Brazil**: Claudiney Pereira and Sean Higgins (Tulane)
- **Mexico**: John Scott (CIDE and CONEVAL)
- **Peru**: Miguel Jaramillo (GRADE)
- **Uruguay**: Marisa Bucheli, Maximo Rossi, and Florencia Amabile (Universidad de la Republica)
References

References


• Bucheli, M., N. Lustig, M. Rossi and F. Amabile *Social Spending, Taxes and Income Redistribution in Uruguay.* Economics Department, Tulane University, Working Paper. Forthcoming.
Fiscal Incidence: Caveats

- No modeling:
  - No behavioral responses (or almost none)
  - No inter-temporal dimensions
  - No general equilibrium effects
  - No fiscal sustainability analysis

- Average Incidence
Fiscal Incidence: Caveats

• One can never know the distribution of income that would have existed in the absence of the taxes/transfers.

• Most up-to-date and microdata-based analysis of taxes and transfers combined
Results: A Primer

Incidence of Taxes and Transfers

1. Lots of heterogeneity in LA
2. No clear-cut correlation between government size, the extent of redistribution, redistributive effectiveness
3. Direct taxes achieve little in the form of redistribution
4. Direct transfers reduce poverty the most when coverage of the poor is high and average transfer is close to average poverty gap
5. Indirect taxes can make poor people net contributors to the state and a substantial portion of the poor poorer
Definitions of Income Concepts: A Stylized Presentation

**Definitions of Income Concepts:**

- **Market Income** = $I^m$
  - Wages and salaries, income from capital, private transfers; before government taxes, social security contributions and transfers; benchmark (sensitivity analysis) includes (doesn’t include) contributory pensions

- **Net Market Income** = $I^n$
  - Direct transfers
  - Indirect subsidies

- **Disposable Income** = $I^d$
  - Indirect subsidies
  - Indirect taxes

- **Post-fiscal Income** = $I^{pf}$
  - In-kind transfers (free or subsidized government services in education and health)
  - Co-payments, user fees

- **Final Income** = $I^f$
  - Direct taxes and employee contributions to social security
Conclusions:

First, Latin America is heterogenous; can’t talk of “a Latin America”

The extent and effectiveness of income redistribution and poverty reduction, government size, and spending patterns vary significantly across countries.
Heterogeneous LA: State comes in different sizes
Decline in Gini and Effectiveness: Heterogeneous LA
Decline in Headcount Ratio $2.50 PPP and Pov. Reduction Effectiveness
Conclusions

• Second, no clear-cut correlation between government size and the extent and effectiveness of redistribution and poverty reduction.
<table>
<thead>
<tr>
<th>Country</th>
<th>Gini Mkt Income</th>
<th>Disposable Income</th>
<th>Headcount Ratio Net</th>
<th>Headcount Disposable Income</th>
<th>Direct Transfers as % GDP</th>
<th>Primary Spending as % of GDP</th>
<th>GDP/cap U$PPP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>0.50</td>
<td>0.46</td>
<td>14%</td>
<td>5%</td>
<td>2.8%</td>
<td>38%</td>
<td>14030</td>
</tr>
<tr>
<td>Bolivia</td>
<td>0.53</td>
<td>0.52</td>
<td>22%</td>
<td>21%</td>
<td>1.2%</td>
<td>37%</td>
<td>4069</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.57</td>
<td>0.54</td>
<td>15%</td>
<td>12%</td>
<td>4.2%</td>
<td>37%</td>
<td>10140</td>
</tr>
<tr>
<td>Mexico</td>
<td>0.53</td>
<td>0.51</td>
<td>12%</td>
<td>11%</td>
<td>0.8%</td>
<td>22%</td>
<td>14530</td>
</tr>
<tr>
<td>Peru</td>
<td>0.50</td>
<td>0.49</td>
<td>15%</td>
<td>14%</td>
<td>0.4%</td>
<td>19%</td>
<td>8349</td>
</tr>
</tbody>
</table>
Decline in Disp Inc Gini, Direct Transfers and Effectiveness Indicator
Decline in Final Inc. Gini, Direct Transfers and Effectiveness Indicator
Conclusions

Third, direct taxes in LA achieved relatively little in the form of redistribution.

Caveat:

• The rich are excluded from analysis using household surveys; need governments to share information from tax returns (anonymous of course) as all OECD countries do (except for Chile, Mexico and Turkey)
Fiscal Policy and Decline in Gini
Conclusions

• Fourth, large-scale targeted cash transfers can achieve significant reductions in extreme poverty.

• The extent of poverty reduction depends on:
  – size of per capita transfer (related to leakages to nonpoor)
  – coverage of the poor
“Leakages” to Non-poor

![Bar chart showing leakages to non-poor in Argentina, Bolivia, Brazil, Mexico, and Peru.](chart.png)

- Argentina: 35.86% Non-poor, 47.32% Poor <4, 15.19% Poor <2.5
- Bolivia: 31.49% Non-poor, 46.15% Poor <4, 15.96% Poor <2.5
- Brazil: 15.19% Non-poor, 23.98% Poor <4, 61.83% Poor <2.5
- Mexico: 37.80% Non-poor, 58.95% Poor <4, 3.25% Poor <2.5
- Peru: 46.85% Non-poor, 70.88% Poor <4, 29.12% Poor <2.5
Coverage of the Extreme and Total Poor

- Argentina: 92.47% (Poor <2.5), 87.42% (Poor <4)
- Bolivia: 43.05% (Poor <2.5), 41.67% (Poor <4)
- Brazil: 69.29% (Poor <2.5), 61.48% (Poor <4)
- Mexico: 53.82% (Poor <2.5), 57.67% (Poor <4)
- Peru: 50.28% (Poor <2.5), 57.67% (Poor <4)
Conclusions

• **Fifth, when indirect taxes are taken into account**
  – The moderate poor and the near poor become net payers to the fiscal system (except for Mexico, 2008)
  – A significant share of the moderate (extreme) poor become extreme (ultra) poor in some of the countries; results for Brazil are striking
Impact of Indirect Taxes
Indirect Taxes and the Poor in Brazil (Lustig and Higgins, 2012)

• Indirect taxes make around 11 percent of the non-poor poor, 15 percent of the moderate poor extremely poor, and 4 percent of the extremely poor “ultra-poor” despite any cash transfers they receive

• We would have missed this with standard analysis:
  – extreme poverty and inequality indicators decline
  – overall taxes are progressive
Table 2. Inequality and poverty before and after taxes and transfers in Brazil

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Before taxes and transfers</th>
<th>After taxes and transfers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini Coefficient</td>
<td>.573</td>
<td>.539</td>
</tr>
<tr>
<td>Headcount Index(^1)</td>
<td>5.7%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Poverty Gap(^1)</td>
<td>2.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Squared Poverty Gap(^1)</td>
<td>1.3%</td>
<td>0.6%</td>
</tr>
<tr>
<td>Headcount Index(^2)</td>
<td>15.3%</td>
<td>15.0%</td>
</tr>
<tr>
<td>Poverty Gap(^2)</td>
<td>6.3%</td>
<td>5.4%</td>
</tr>
<tr>
<td>Squared Poverty Gap(^2)</td>
<td>3.7%</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

Note: 1: $1.25 PPP per day; 2: $2.50 PPP per day
Source: Pereira and Higgins (2012). Differences in poverty and the Gini between the “before” and “after” situations are all statistically significant at the 0.1% level.
Figure 2. Anonymous and non-anonymous fiscal incidence curves by deciles for Brazil.

Source: Authors’ calculations based on POF (2008-2009).
# Fiscal Mobility: Fiscally-induced Upward and Downward Movement (in %). Brazil’09

## Fiscal Mobility Matrix for Brazil

<table>
<thead>
<tr>
<th>Market Income groups</th>
<th>y &lt; 1.25</th>
<th>1.25 &lt;= y &lt; 2.50</th>
<th>2.50 &lt;= y &lt; 4.00</th>
<th>4.00 &lt;= y &lt; 10.00</th>
<th>10.00 &lt;= y &lt; 50.00</th>
<th>50.00 &lt;= y</th>
<th>Percent of population</th>
<th>Mean income</th>
</tr>
</thead>
<tbody>
<tr>
<td>y &lt; 1.25</td>
<td>69%</td>
<td>21%</td>
<td>6%</td>
<td>3%</td>
<td></td>
<td></td>
<td>5.7%</td>
<td>$0.74</td>
</tr>
<tr>
<td>1.25 &lt;= y &lt; 2.50</td>
<td></td>
<td>81%</td>
<td>10%</td>
<td>4%</td>
<td></td>
<td></td>
<td>9.6%</td>
<td>$1.89</td>
</tr>
<tr>
<td>2.50 &lt;= y &lt; 4.00</td>
<td></td>
<td></td>
<td>75%</td>
<td>9%</td>
<td>1%</td>
<td></td>
<td>11.3%</td>
<td>$3.24</td>
</tr>
<tr>
<td>4.00 &lt;= y &lt; 10.00</td>
<td></td>
<td></td>
<td></td>
<td>86%</td>
<td>3%</td>
<td></td>
<td>33.6%</td>
<td>$6.67</td>
</tr>
<tr>
<td>10.00 &lt;= y &lt; 50.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>85%</td>
<td></td>
<td>35.3%</td>
<td>$19.90</td>
</tr>
<tr>
<td>50.00 &lt;= y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32%</td>
<td>68%</td>
<td>$94.59</td>
</tr>
<tr>
<td>Percent of population</td>
<td>4.3%</td>
<td>10.7%</td>
<td>13.5%</td>
<td>35.8%</td>
<td>32.5%</td>
<td>3.2%</td>
<td>100%</td>
<td>$14.15</td>
</tr>
<tr>
<td>Mean income</td>
<td>$0.86</td>
<td>$1.91</td>
<td>$3.25</td>
<td>$6.61</td>
<td>$19.34</td>
<td>$88.70</td>
<td>$12.17</td>
<td></td>
</tr>
</tbody>
</table>

Note: Mean incomes are in US$ PPP per day. Rows may not sum to exactly 100% due to rounding. Zeroes are omitted from the matrix for enhanced readability. Differences in group shares between the “before” and “after” scenarios are all statistically significant from zero at the 0.1% significance level.

Income loss matrix for “losers” in Brazil.

<table>
<thead>
<tr>
<th>Market Income groups</th>
<th>y &lt; 1.25</th>
<th>1.25 &lt;= y &lt;= 2.50</th>
<th>2.50 &lt;= y &lt;= 4.00</th>
<th>4.00 &lt;= y &lt;= 10.00</th>
<th>10.00 &lt;= y &lt;= 50.00</th>
<th>50.00 &lt;= y</th>
<th>Percent of population</th>
<th>Group average</th>
</tr>
</thead>
<tbody>
<tr>
<td>y &lt; 1.25</td>
<td>-10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.7%</td>
<td>-10%</td>
</tr>
<tr>
<td></td>
<td>$0.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$0.83</td>
<td></td>
</tr>
<tr>
<td>1.25 &lt;= y &lt; 2.50</td>
<td>-13%</td>
<td>-10%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.6%</td>
<td>-10%</td>
</tr>
<tr>
<td></td>
<td>$1.34</td>
<td>$2.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1.96</td>
<td></td>
</tr>
<tr>
<td>2.50 &lt;= y &lt; 4.00</td>
<td>-14%</td>
<td>-11%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11.3%</td>
<td>-11%</td>
</tr>
<tr>
<td></td>
<td>$2.71</td>
<td>$3.40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$3.27</td>
<td></td>
</tr>
<tr>
<td>4.00 &lt;= y &lt; 10.00</td>
<td>-15%</td>
<td>-14%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33.6%</td>
<td>-14%</td>
</tr>
<tr>
<td></td>
<td>$4.36</td>
<td>$7.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$6.70</td>
<td></td>
</tr>
<tr>
<td>10.00 &lt;= y &lt; 50.00</td>
<td>-16%</td>
<td>-16%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>35.3%</td>
<td>-16%</td>
</tr>
<tr>
<td></td>
<td>$10.98</td>
<td>$21.76</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$20.03</td>
<td></td>
</tr>
<tr>
<td>50.00 &lt;= y</td>
<td>-22%</td>
<td>-21%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.5%</td>
<td>-21%</td>
</tr>
<tr>
<td></td>
<td>$56.66</td>
<td>$113.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$94.99</td>
<td></td>
</tr>
<tr>
<td>Percent of population</td>
<td>4.3%</td>
<td>10.7%</td>
<td>13.5%</td>
<td>35.8%</td>
<td>32.5%</td>
<td>3.2%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Group average</td>
<td>-11%</td>
<td>-11%</td>
<td>-12%</td>
<td>-14%</td>
<td>-16%</td>
<td>-21%</td>
<td>-14.5%</td>
<td>$16.10</td>
</tr>
<tr>
<td></td>
<td>$0.95</td>
<td>$2.20</td>
<td>$3.73</td>
<td>$7.73</td>
<td>$23.46</td>
<td>$113.30</td>
<td>$16.10</td>
<td></td>
</tr>
</tbody>
</table>

Note: All monetary amounts are using before taxes and transfers income and are in PPP-adjusted dollars per day. Zeros are omitted from the matrix for enhanced readability. Differences in group shares between the “before” and “after” scenarios are all statistically significant from zero at the 0.1% significance level. Source: Authors’ calculations based on POF (2008-2009).
Thank you