Social Spending, Taxes and Income Redistribution in Paraguay

CEQ 2011
(in progress)

José Manuel Gómez
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1. Macroeconomic background
2. Data and income definitions
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4. Preliminary impact results of taxes and social expending on inequality and poverty
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Macroeconomic background

- The economy is growing at an average 4.5% per year on the last 9 years
- Highly dependant on commodities and favourable climate conditions
- Poverty is decreasing but still high at 32%
- Inefficient public services and poor infrastructure
- Large informal sector and only 18% of the labour force is covered by social security
- Weak public sector in terms of tax revenue / GDP (12%)
Poverty indicators

Source: World Bank, DGEEC
## Economic Indicators

<table>
<thead>
<tr>
<th>Indicator Name</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population, total (millions)</td>
<td>5.68</td>
<td>5.79</td>
<td>5.90</td>
<td>6.01</td>
<td>6.13</td>
<td>6.24</td>
<td>6.35</td>
<td>6.46</td>
<td>6.57</td>
</tr>
<tr>
<td>GDP (billion current US$)</td>
<td>6,588</td>
<td>8,034</td>
<td>8,735</td>
<td>10,662</td>
<td>13,838</td>
<td>18,505</td>
<td>15,955</td>
<td>20,028</td>
<td>26,008</td>
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<tr>
<td>GDP growth (annual %)</td>
<td>4.32</td>
<td>4.06</td>
<td>2.13</td>
<td>4.81</td>
<td>5.42</td>
<td>6.36</td>
<td>-3.97</td>
<td>13.09</td>
<td>4.34</td>
</tr>
<tr>
<td>GNI per capita, PPP (current int. $)</td>
<td>3460</td>
<td>3700</td>
<td>3840</td>
<td>4240</td>
<td>4780</td>
<td>5170</td>
<td>4850</td>
<td>5480</td>
<td>5900</td>
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<tr>
<td>GINI index</td>
<td>56.88</td>
<td>54</td>
<td>52.45</td>
<td>54.85</td>
<td>53.31</td>
<td>52.05</td>
<td>51.04</td>
<td>52.42</td>
<td>52.0</td>
</tr>
<tr>
<td>Tax revenue (% of GDP)</td>
<td>8.69</td>
<td>10.27</td>
<td>10.14</td>
<td>10.49</td>
<td>10.11</td>
<td>10.72</td>
<td>11.64</td>
<td>12.01</td>
<td>12.14</td>
</tr>
<tr>
<td>Health expenditure, public (% of GDP)</td>
<td>2.45</td>
<td>2.49</td>
<td>2.47</td>
<td>2.69</td>
<td>2.71</td>
<td>2.64</td>
<td>3.63</td>
<td>3.29</td>
<td>3.75</td>
</tr>
<tr>
<td>Public spending on education (% of GDP)</td>
<td>3.84</td>
<td>3.61</td>
<td>3.83</td>
<td>3.89</td>
<td>3.75</td>
<td>3.74</td>
<td>4.39</td>
<td>3.99</td>
<td>4.17</td>
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</table>

Source: World Bank, National Accounts
Data from Survey

- EPH 2011 Survey that provides information representative of the whole country based on 4,984 households and 19,662 people
- Income information (net) available
- Info on expenses, indirect taxes, subsidies not available
- Information on cash transfer programs available but need to scale up
## Social Spending by component, 2011

<table>
<thead>
<tr>
<th>Program</th>
<th>CEQ</th>
<th>LCU</th>
<th>% of total</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Spending</td>
<td>19,579</td>
<td>100.0%</td>
<td>19.6%</td>
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<tr>
<td>Social Spending</td>
<td>10,369</td>
<td>53.0%</td>
<td>10.4%</td>
<td></td>
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<tr>
<td>Health</td>
<td>Yes</td>
<td>2,287</td>
<td>22.1%</td>
<td>2.3%</td>
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<tr>
<td>Medical care</td>
<td>Yes</td>
<td>1,529</td>
<td>14.7%</td>
<td>1.5%</td>
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<tr>
<td>Sanitation and Assistance</td>
<td>Yes</td>
<td>88</td>
<td>0.8%</td>
<td>0.1%</td>
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<tr>
<td>Salaries, others</td>
<td>Yes</td>
<td>669</td>
<td>6.5%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Social Promotion and Support</td>
<td>Partial</td>
<td>1,888</td>
<td>18.2%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Social Assistance</td>
<td>No</td>
<td>50</td>
<td>0.5%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Social Tariff Electricity</td>
<td>Yes</td>
<td>844</td>
<td>8.1%</td>
<td>0.8%</td>
</tr>
<tr>
<td>Social Support local governments</td>
<td>No</td>
<td>45</td>
<td>0.4%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Rural reforms</td>
<td>No</td>
<td>401</td>
<td>3.9%</td>
<td>0.4%</td>
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<tr>
<td>Salaries, others</td>
<td>No</td>
<td>57</td>
<td>0.5%</td>
<td>0.1%</td>
</tr>
<tr>
<td>Social Security</td>
<td>Yes</td>
<td>1,709</td>
<td>16.5%</td>
<td>1.7%</td>
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<tr>
<td>Education</td>
<td>Yes</td>
<td>4,208</td>
<td>40.6%</td>
<td>4.2%</td>
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<tr>
<td>Primary</td>
<td>Yes</td>
<td>1,885</td>
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<tr>
<td>Secondary</td>
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<td>Tertiary</td>
<td>Yes</td>
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<tr>
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<td>599</td>
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<td>Scholarships</td>
<td>No</td>
<td>60</td>
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<td>Labour relations</td>
<td>No</td>
<td>16</td>
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<td>0.0%</td>
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<tr>
<td>Housing</td>
<td>No</td>
<td>202</td>
<td>1.9%</td>
<td>0.2%</td>
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</table>
# Tax revenues

<table>
<thead>
<tr>
<th>Taxes</th>
<th>Included in Analysis</th>
<th>Billions of Guaranis</th>
<th>% of total</th>
<th>% of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>National</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corporate tax</td>
<td>No</td>
<td>2,611</td>
<td>19.8%</td>
<td>2.6%</td>
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<tr>
<td>Fuel tax</td>
<td>Yes</td>
<td>1,431</td>
<td>10.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Alcohol and tobacco</td>
<td>Yes</td>
<td>564</td>
<td>4.3%</td>
<td>0.6%</td>
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<tr>
<td>VAT</td>
<td>Yes</td>
<td>6,786</td>
<td>51.4%</td>
<td>6.8%</td>
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<tr>
<td>Others</td>
<td>No</td>
<td>115</td>
<td>0.9%</td>
<td>0.1%</td>
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<tr>
<td>Imported Goods</td>
<td>No</td>
<td>1,704</td>
<td>12.9%</td>
<td>1.7%</td>
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<tr>
<td><strong>Municipal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real estate tax</td>
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</table>

<table>
<thead>
<tr>
<th>Pensions</th>
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<th>Billions of LCU</th>
<th>% of total</th>
<th>% of GDP</th>
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</thead>
<tbody>
<tr>
<td>Contributions to Pensions (Employer)</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contributions to Pensions (Employee)</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>13,211</td>
<td>100</td>
<td>13.2%</td>
</tr>
</tbody>
</table>
Income definitions

- **Market Income (ym)**: wages, capital, self consumption, owner occ.hh., private transfers, pension (contributory in BC)
- All provided, but need to pass from net to gross (wages) 9% for those in the formal sector. And gross up by 16.5% of employer contributions to SS
- **Net market income (yn)**: ym - direct taxes - contribution to pensions (employer / employee)
- Self reported payment of direct taxes from real state, others
Income definitions

- **Disposable income** ($yd$): $yn + $public transfers
- Provided in the Survey + scale up beneficiaries

- **Post fiscal income** ($ypf$): $yd + indirect subsidies (Social electricity tariff) - indirect taxes (VAT, fuel, alcohol, cigarettes, etc)
- Not available in the Survey. Social tariff can be imputed using EPH 2010. Possible to impute indirect taxes based on a research and 2001 expenditure survey

- **Final income** ($yf$): $ypf + in kind transfers (health / education). Impute option for education. Health calculations using the 2001 Survey
Caveats

• The scale up of CCT transfer is not accurate yet (65% underestimated)
• Preliminary results do not include indirect subsidies ex.: Electricity social tariff
• The research uses a 2001 source for imputing expenses on health and education, and indirect taxes like VAT and fuel tax
• Need more understanding of expenses structure in National Accounts
### Ex.: indirect taxes

#### Paraguay: Indices de Progresividad y Capacidad Distributiva del Impuesto sobre las Ventas (IVA) según Regimen Tributario

<table>
<thead>
<tr>
<th>Indicador a nivel de Hogares</th>
<th>Ingresos ordenados según ingreso per cápita</th>
<th>Ingresos ordenados según consumo per cápita</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ley 125/91</td>
<td>Ley 2421/04</td>
</tr>
<tr>
<td>Progresividad: Tasa Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decil 1</td>
<td>24.1</td>
<td>24.6</td>
</tr>
<tr>
<td>Decil 2</td>
<td>6.2</td>
<td>6.4</td>
</tr>
<tr>
<td>Decil 3</td>
<td>6.9</td>
<td>7.1</td>
</tr>
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<td>Decil 4</td>
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<td>5.6</td>
</tr>
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<td>Decil 5</td>
<td>5.3</td>
<td>6.7</td>
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<td>Decil 6</td>
<td>5.0</td>
<td>5.6</td>
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<td>Decil 7</td>
<td>4.7</td>
<td>5.2</td>
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<tr>
<td>Decil 8</td>
<td>4.3</td>
<td>4.7</td>
</tr>
<tr>
<td>Decil 9</td>
<td>4.4</td>
<td>4.9</td>
</tr>
<tr>
<td>Decil 10</td>
<td>4.0</td>
<td>4.6</td>
</tr>
<tr>
<td>Cuasi-Gini</td>
<td>0.4408</td>
<td>0.4504</td>
</tr>
<tr>
<td>Kakwani</td>
<td>-0.1170</td>
<td>-0.1075</td>
</tr>
</tbody>
</table>

#### Capacidad Distributiva

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini del Ingreso antes de la política fiscal</td>
<td>0.5578</td>
<td>0.5578</td>
<td>0.4530</td>
<td>0.4530</td>
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<tr>
<td>Gini del Ingreso después de la política fiscal</td>
<td>0.5630</td>
<td>0.5632</td>
<td>0.4498</td>
<td>0.4491</td>
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<tr>
<td>Reynolds-Smolensky</td>
<td>-0.0052</td>
<td>-0.0054</td>
<td>0.0032</td>
<td>0.0039</td>
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</tbody>
</table>

Fuente: Elaboración propia en base a la EIH 2000-01
### Preliminary results - BC

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Market Income</th>
<th>Net Market Income</th>
<th>Disposable Income</th>
<th>Post-fiscal Income</th>
<th>Final Income*</th>
<th>Final Income</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gini</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% change wrt market income</td>
<td>--</td>
<td>-0.4%</td>
<td>-0.7%</td>
<td>0.0%</td>
<td>-2.9%</td>
<td>-2.4%</td>
</tr>
<tr>
<td>% change wrt net market income</td>
<td>--</td>
<td>--</td>
<td>-0.2%</td>
<td>0.4%</td>
<td>-2.5%</td>
<td>-2.0%</td>
</tr>
<tr>
<td><strong>Theil Index</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% change wrt market income</td>
<td>--</td>
<td>0.2%</td>
<td>-0.2%</td>
<td>1.1%</td>
<td>-4.8%</td>
<td>-3.9%</td>
</tr>
<tr>
<td>% change wrt net market income</td>
<td>--</td>
<td>--</td>
<td>-0.4%</td>
<td>0.9%</td>
<td>-5.0%</td>
<td>-4.1%</td>
</tr>
<tr>
<td><strong>90/10</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% change wrt market income</td>
<td>--</td>
<td>-95.3%</td>
<td>-126.8%</td>
<td>212.5%</td>
<td>-338.1%</td>
<td>-170.3%</td>
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<td>% change wrt net market income</td>
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<td>-31.6%</td>
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<td>-242.8%</td>
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</tr>
<tr>
<td>% change wrt market income</td>
<td>--</td>
<td>2.0%</td>
<td>1.9%</td>
<td>3.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% change wrt net market income</td>
<td>--</td>
<td>--</td>
<td>-0.1%</td>
<td>1.9%</td>
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<tr>
<td><strong>Headcount index 2.50 $ PPP</strong></td>
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<tr>
<td>% change wrt market income</td>
<td>--</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.9%</td>
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<tr>
<td>% change wrt net market income</td>
<td>--</td>
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<td>0.0%</td>
<td>0.7%</td>
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<tr>
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<td>2.2%</td>
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<tr>
<td>% change wrt net market income</td>
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<td>1.2%</td>
<td>1.0%</td>
<td>3.4%</td>
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<td></td>
</tr>
<tr>
<td>% change wrt net market income</td>
<td>--</td>
<td>--</td>
<td>-0.3%</td>
<td>2.2%</td>
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</table>
### Preliminary results – SA1

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Market Income</th>
<th>Net Market Income</th>
<th>Disposable Income</th>
<th>Post-fiscal Income</th>
<th>Final Income*</th>
<th>Final Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini</td>
<td></td>
<td></td>
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<tr>
<td>% change wrt market income</td>
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<td></td>
<td>-2.9%</td>
<td>-2.4%</td>
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<tr>
<td>% change wrt net market income</td>
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<td></td>
<td></td>
<td></td>
<td>-2.4%</td>
<td>-1.9%</td>
</tr>
<tr>
<td>Theil Index</td>
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<tr>
<td>% change wrt market income</td>
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<td>-4.5%</td>
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<tr>
<td>% change wrt net market income</td>
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<td>-5.7%</td>
<td>-4.7%</td>
</tr>
<tr>
<td>90/10</td>
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<td>% change wrt market income</td>
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<tr>
<td>% change wrt market income</td>
<td>--</td>
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<td>2.1%</td>
<td>2.6%</td>
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<tr>
<td>% change wrt net market income</td>
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<td></td>
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<td>-1.5%</td>
<td>0.5%</td>
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<tr>
<td>Headcount index  2.50 $ PPP</td>
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</tr>
<tr>
<td>% change wrt market income</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>% change wrt net market income</td>
<td>--</td>
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<td></td>
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Next steps

• Find support from other teams for refining scaling up and imputations
• Meet program officials and get more information on targeted to the poor government programs
• Look for latest data available on household expenditure composition so as to better impute indirect taxes and subsidies
• Sort out research funds
Thanks!

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