Fiscal Policy Incidence on Poverty and Inequality in Latin America

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CEQ Institute

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Justification

- Inequality and poverty remain relatively high and social spending relatively low in Latin America region. Gini cofficient above 0.50: Brazil, Chile, Colombia, Guatemala, Honduras, Panama and Paraguay (ECLAC database).
- Inequality carries high economic, social and moral costs.
- The unequal distribution of income and access to education and health can undermine economic growth, social cohesion and drive up crime.

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By using a common methodology, the CEQ methodology, the authors evaluate the redistributive impact of fiscal policy in 10 Latin America countries. Questions:

- What is the impact of fiscal policy on inequality and poverty?
- What is the contribution of direct taxes, direct transfers, indirect taxes and social spending to the overall reduction in inequality?
- How pro-poor is spending on education and health?

Outline

1. What is the CEQ Institute?
2. CEQ Methodology
3. Empirical evidence from 10 Latin America countries
    a) Impact on inequality
    b) Impact on poverty
    c) Progressivity of social spending in education and health
4. Final comments

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What is CEQ?

- The Commitment to Equity (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. Directed by Nora Lustig, the CEQ is a joint project of CIPR and the Department of Economics at Tulane University and the Inter-American Dialogue.

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Commitment to Equity Institute (CEQI)

- Research-based policy tools
- Data Center
- Advisory and training services
- Bridges to policy

  - Grant from Bill & Melinda Gates Foundation US4.9 million for 5 yrs

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CEQ Assessment: Tools

- **Handbook:** Lustig and Higgins, current version Sept 2013; includes sample STATA code, available on CEQ website.
- **CEQ Handbook 2016 (forthcoming)**

  Lustig, Nora, editor. *Commitment to Equity Handbook: Estimating the Redistributive Impact of Fiscal Policy* , Tulane University and the World Bank.
- **Master Workbook**: Excel Spreadsheet to present background information, assumptions and results. (MWB 2016 Beta version, available upon request).
- **Diagnostic Questionnaire and Ado Stata Files** (MWB 2016 Beta version, available upon request).

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Methodology CEQ: Overview

- Information comes from combining microdata from household surveys with administrative information from national accounts.

- It includes almost all characteristics of the tax system, transfer programs, education systems, social security and health and consumer subsidies .

- For tax incidence analysis CEQ uses the "accounting approach”. It does not take into account the behavioral responses or the general equilibrium effects.

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Methodology CEQ: an overview

1. CEQ assessment includes the whole fiscal system.
2. Analyzing the tax side without the spending side, or vice versa, might not be very useful.
   - Taxes can be unequalizing but spending so equalizing that the unequalizing effect of taxes is more than compensated
   - Taxes can be regressive but when combined with transfers make the system more equalizing than without the regressive taxes
   - Transfers can be equalizing but when combined with taxes, post-fisc poverty can be higher

Methodology CEQ: an overview

3. Analyzing the impact on inequality only can be misleading
   - Fiscal systems can be equalizing but poverty increasing

4. Analyzing the impact on traditional poverty indicators can be misleading

   - Fiscal systems can show a reduction in poverty and yet a substantial share of the poor could have been impoverished by the combined effect of taxes and transfers

Methodology References

1. **Handbook:** Lustig and Higgins, current version Sept 2013; includes sample Stata code => available on CEQ website
2. **CEQ Handbook 2016 (forthcoming)**

   Lustig, Nora, editor. *Commitment to Equity Handbook: Estimating the Redistributive Impact of Fiscal Policy* , Tulane University and the World Bank

CEQ Assessment: Income Concepts

MARKET INCOME

PLUS DIRECT TRANSFERS MINUS DIRECT TAXES

DISPOSABLE INCOME

PLUS INDIRECT SUBSIDIES MINUS INDIRECT TAXES

POST-FISCAL or CONSUMABLE INCOME

PLUS MONETIZED VALUE OF PUBLIC SERVICES: EDUCATION & HEALTH

FINAL INCOME

Coverage and Empirical evidence from 10 Latin America countries

Bolivia, Brazil, Chile, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Peru and Uruguay

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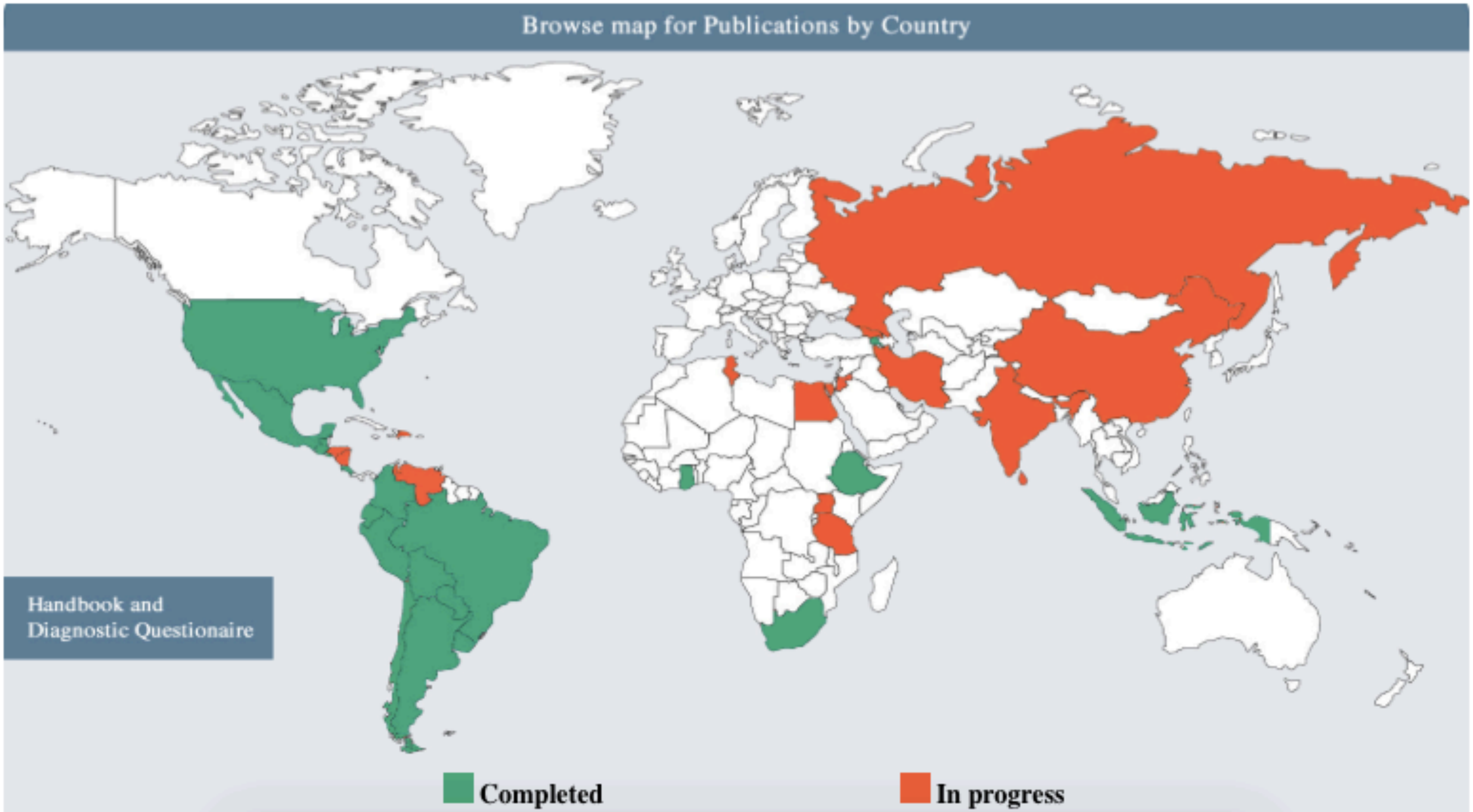
CEQ assessments: 20 countries completed, there are 14 in progress and at least 10 more countries that will begin shortly…



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Evidence from applying CEQ methodology: Contribution

1. CEQ fiscal incidence analysis is comprehensive, one can estimate both the overall impact of the "fiscal system" as well as the marginal contribution of the main fiscal interventions to the overall reduction in inequality.
2. The main fiscal interventions included here are: direct taxes, direct transfers, net indirect taxes and transfers in-kind (in the form of education and healthcare services).
3. The analysis includes the effects of fiscal policy not only on inequality but also on poverty.
4. Because the 10 studies apply a common methodology, results are comparable across countries.

Based on:

1. Lustig, Nora. 2015a. "The Redistributive Impact of Government Spending on Education and Health: Evidence from 13 Developing Countries in the Commitment to Equity Project" Chapter 17 in Gupta, Sanjeev, Michael Keen, Benedict Clements and Ruud de Mooij, editors, *Inequality and Fiscal Policy,* Washington: International Monetary Fund.

2. Lustig, Nora. 2015b. *Inequality and Fiscal Redistribution in Middle Income Countries: Brazil, Chile, Colombia, Indonesia, Mexico, Peru and South Africa. Evidence from the Commitment to Equity Project (CEQ).* CEQ Working Paper No. 31, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue.

3. Lustig. 2015c (2015c). "El Impacto del Sistema Tributario y el Gasto Social en América Latina", prepared for the Inter-american Development Bank (unpublished paper, preliminary).

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Teams and references by country:
(in parenthesis: survey year; C=consumption & I=income)

1. **Bolivia (2009; I)**: Paz Arauco, Verónica, George Gray Molina, Wilson Jiménez Pozo, and Ernesto Yáñez Aguilar. 2014. “Explaining Low Redistributive Impact in Bolivia.” In Lustig, Nora, Carola Pessino and John Scott. 2014. Editors. *The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue. Public Finance Review*, May, Volume 42, Issue 3. (September 22, 2014)

2. **Brazil (2009; I)**: Higgins, Sean and Claudiney Pereira. 2014. “The Effects of Brazil’s Taxation and Social Spending on the Distribution of Household Income.” In Lustig, Nora, Carola Pessino and John Scott. 2014. Editors. *The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue. Public Finance Review*, May, Volume 42, Issue 3. (November 4, 2014)

3. **Chile (2009, I):** Ruiz-Tagle, Jaime and Dante Contreras. 2014. CEQ Masterworkbook, Tulane University (August 27, 2014)

4. **Costa Rica (2010; I)**: Sauma, Juan and Diego Trejos. 2014. *Social Public Spending, Taxes, Redistribution of Income, and Poverty in Costa.* CEQ Working Paper No. 18, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue, January. (February 2014)

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Teams and references by country:
(in parenthesis: survey year; C=consumption & I=income)

5. **Ecuador:** Llerena Pinto, Freddy Paul, María Christina Llerena Pinto, Roberto Carlos Saá Daza, and María Andrea Llerena Pinto. 2015. *Social Spending, Taxes and Income Redistribution in Ecuador.* CEQ Working Paper No. 28, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue, February.

6. **El Salvador (2011; I)**: Beneke, Margarita, Nora Lustig y José Andrés Oliva. 2015. *El impacto de los impuestos y el gasto social en la desigualdad y la pobreza en El Salvador.* CEQ Working Paper No. 26, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue, February. (March 11, 2014)

7. **Guatemala (2011; I)**: Cabrera, Maynor, Nora Lustig and Hilcías Morán. 2014. *Fiscal Policy, Inequality and the Ethnic Divide in Guatemala.* CEQ Working Paper No. 20, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue, October. (April 13, 2014)

8. **Mexico (2010; I):**Scott, John. 2014. "Redistributive Impact and Efficiency of Mexico's Fiscal System." In Lustig, Nora, Carola Pessino and John Scott. 2014. Editors. *The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue. Public Finance Review*, May, Volume 42, Issue 3. (September 2013)

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Teams and references by country:
(in parenthesis: survey year; C=consumption & I=income)

9. **Peru (2009; I):** Jaramillo, Miguel. 2014. "The Incidence of Social Spending and Taxes in Peru." In Lustig, Nora, Carola Pessino and John Scott. 2014. Editors. *The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue. Public Finance Review*, May, Volume 42, Issue 3. (May 1, 2013)

10. **Uruguay (2009; I):** Bucheli, Marisa, Nora Lustig, Máximo Rossi, and Florencia Amábile. 2014. "Social Spending, Taxes and Income Redistribution in Uruguay." In Lustig, Nora, Carola Pessino and John Scott. 2014. Editors. *The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue. Public Finance Review*, May, Volume 42, Issue 3. (August 18, 2014)

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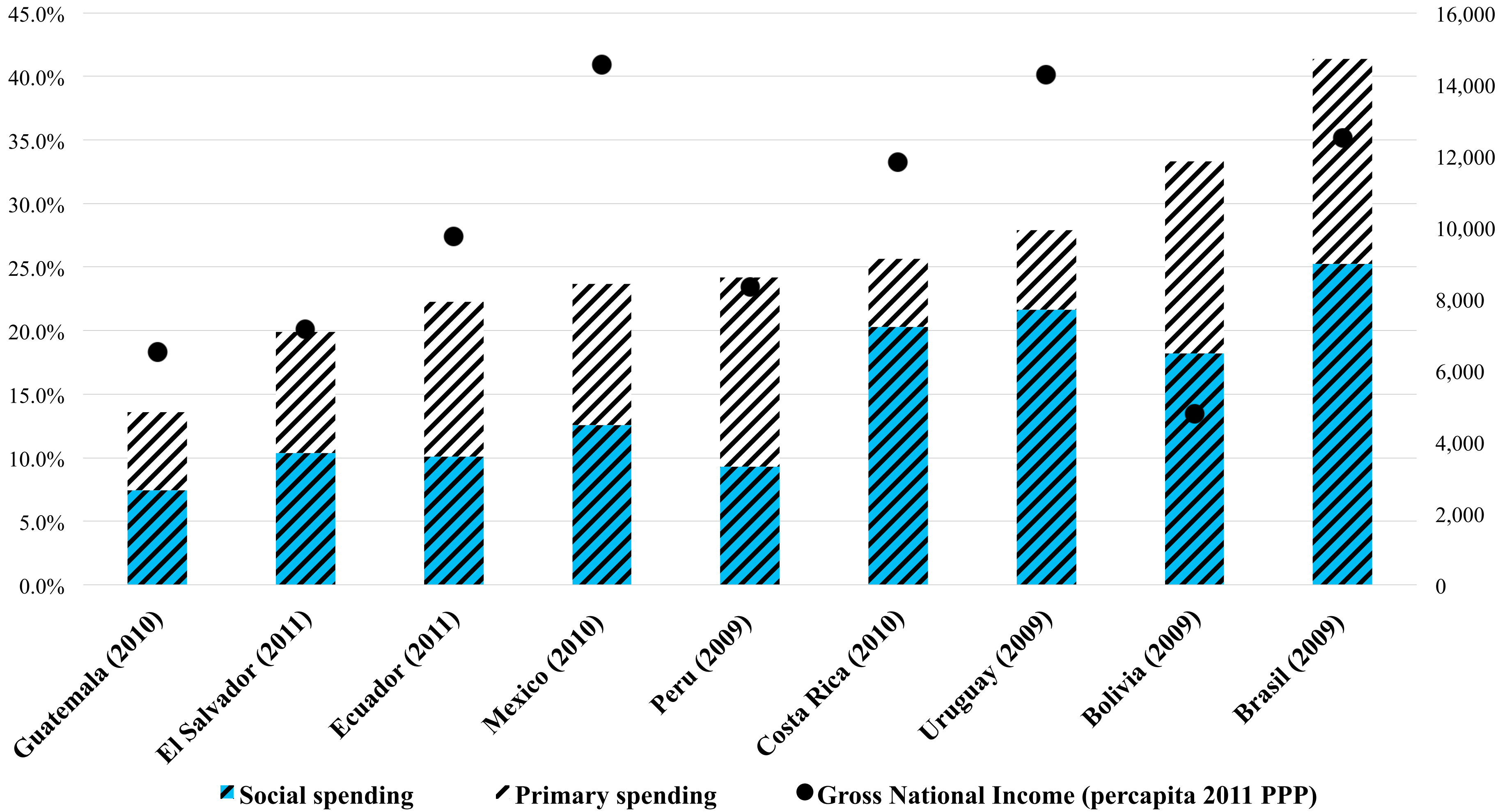
Figure 1: Size and composition of government spending (circa 2010, % of GDP)



Source: CEQ country assessments and Lustig (2015c).

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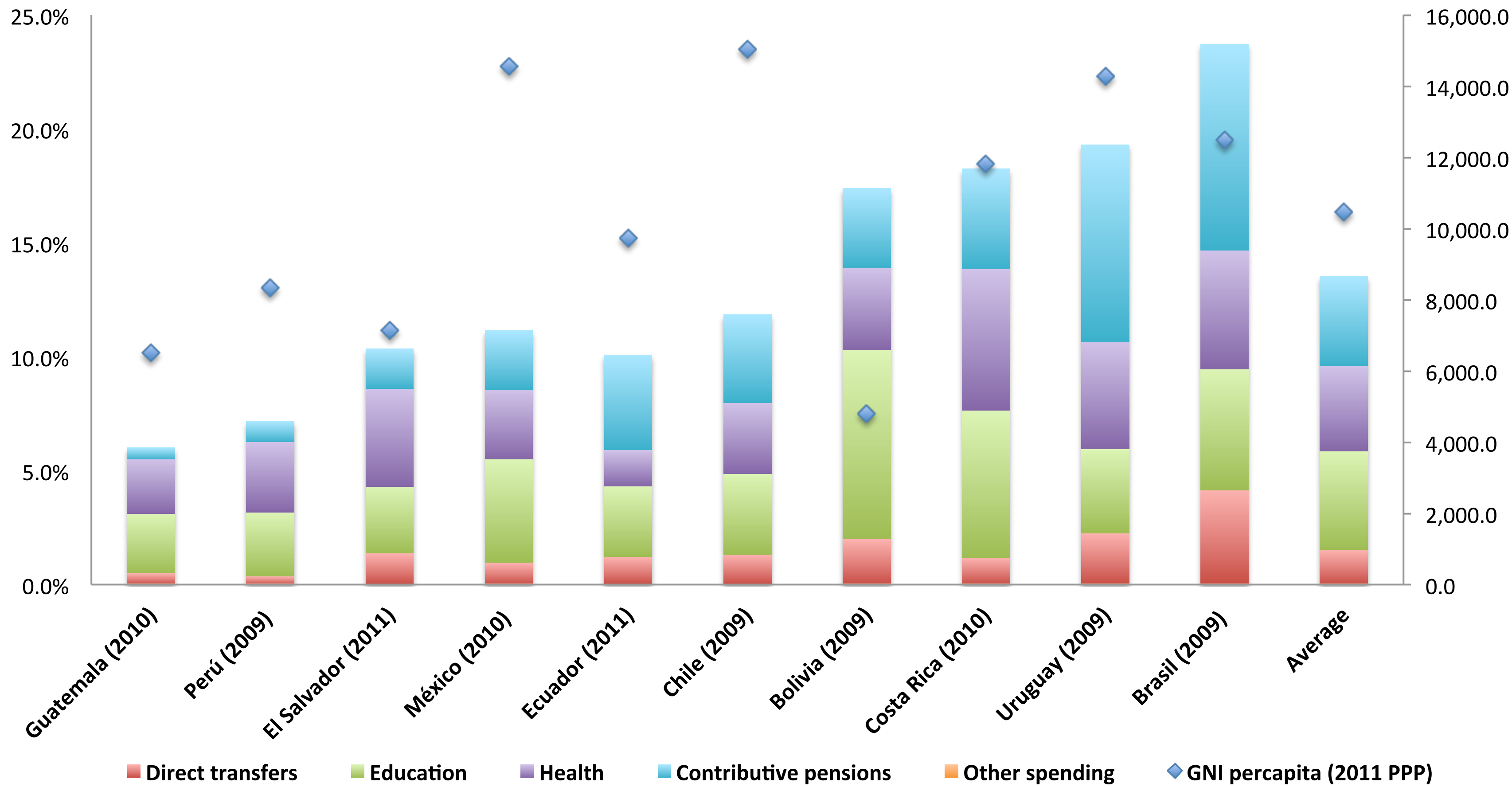
Figure 2: Size and composition of social spending (circa 2010, % of GDP)



Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

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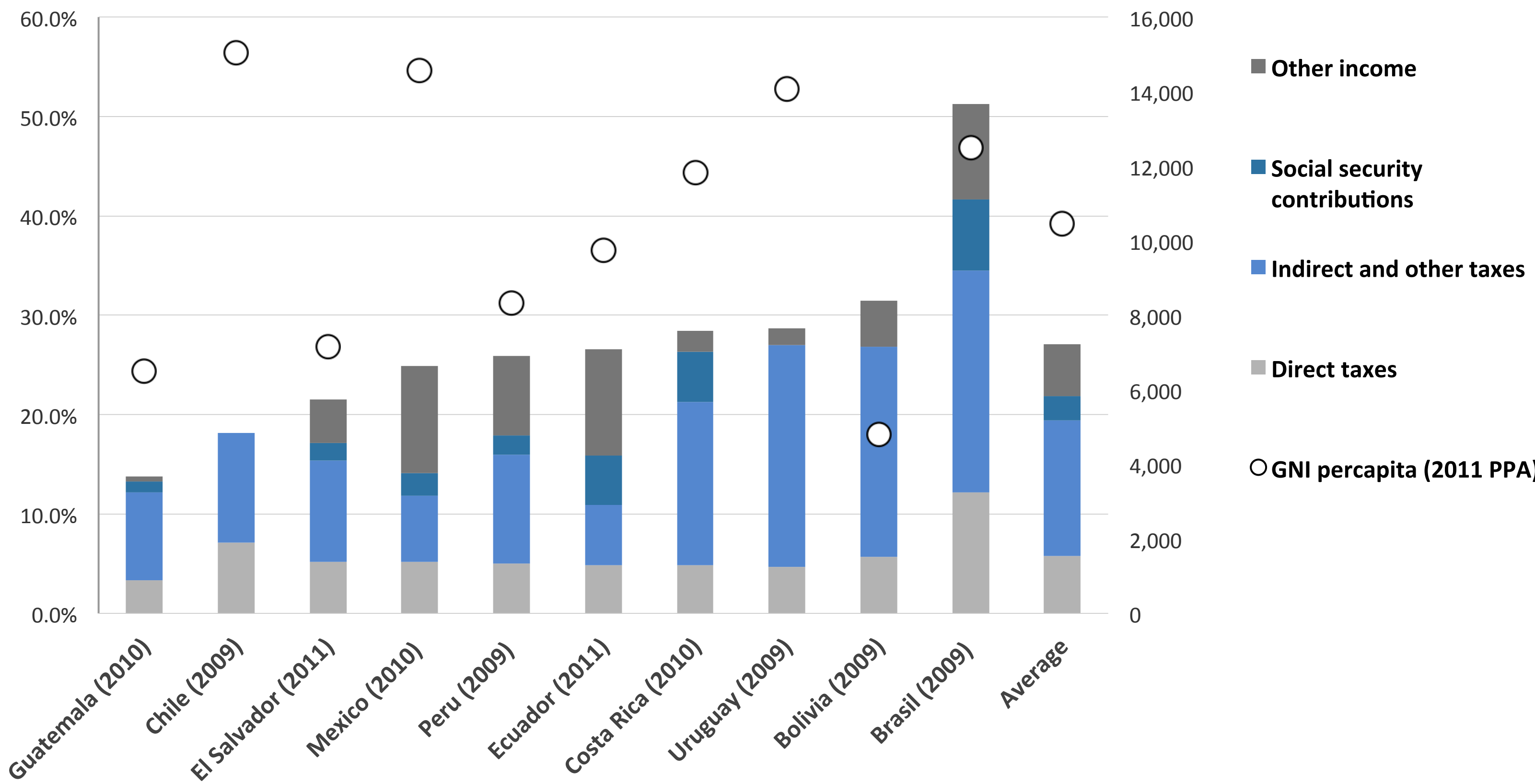
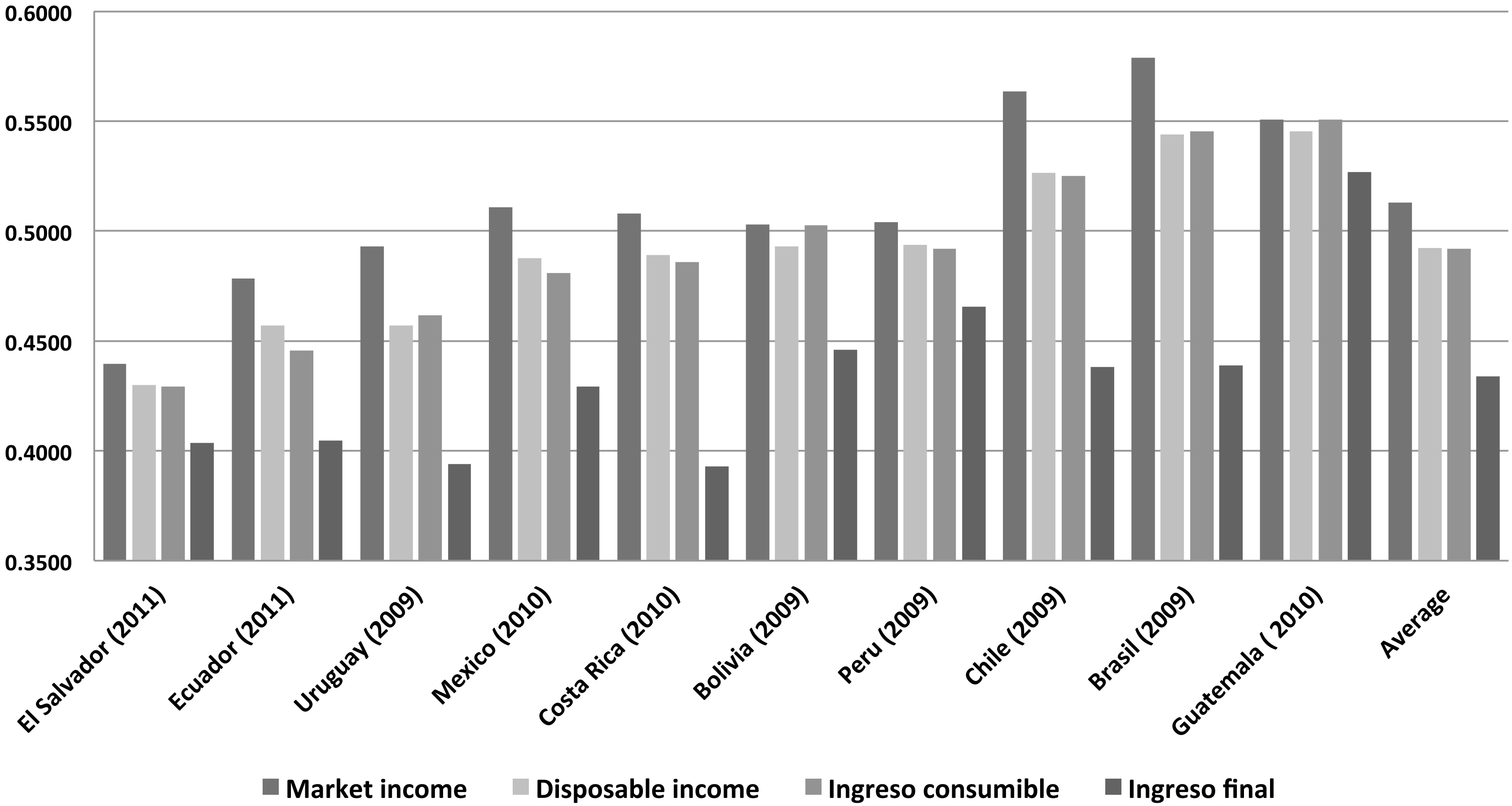
Figure 3: Composition of total government revenues (circa 2010, % of GDP)



Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

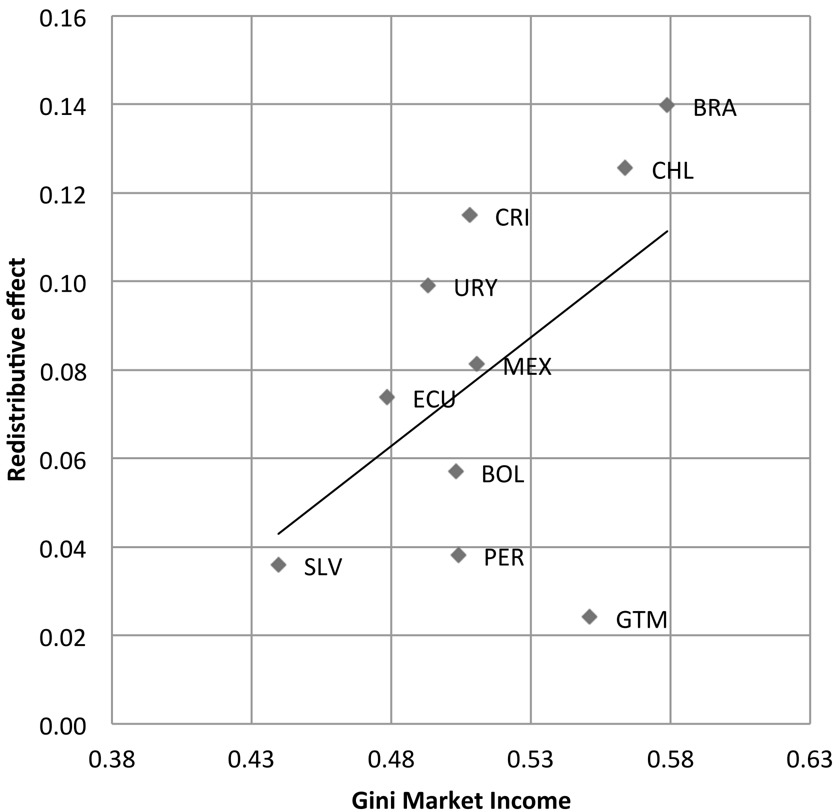
Figure 4: Gini coefficient by income concept (circa 2010)



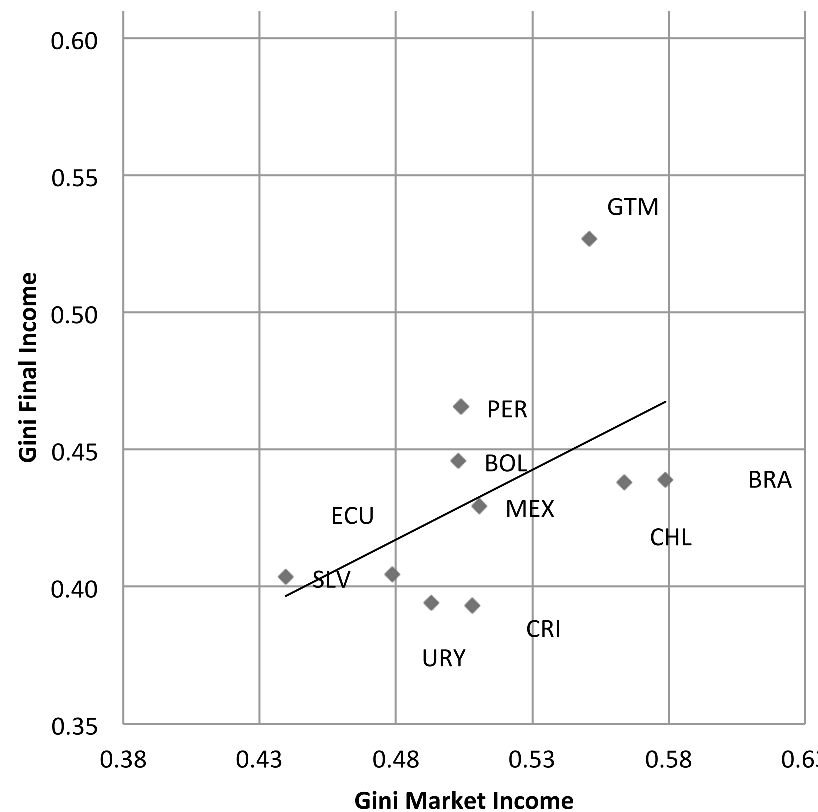
Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014. Notes: 1. The year of the household surveys in parentheses; 2. The graph is sorted by market income Gini coefficient, from lowest to highest.

Figure 6: Redistributive effect of fiscal policy

The redistributive effect of fiscal policy: Do more unequal countries redistribute more?
Income distribution tends to be higher in more unequal countries.



Levels of income inequality before (horizontal axis) and after (vertical axis) accounting for fiscal policy:
When we include in-kind transfers, fiscal policy reduce inequality in all countries. Lower distribution in Guatemala, Peru and Bolivia.



Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

Figrue 7: Redistribution and social spending

- Level of income redistribution and social spending are positively correlated.
- Differences across countries might show that institutional factors such as the composition and design affect social spending effect.

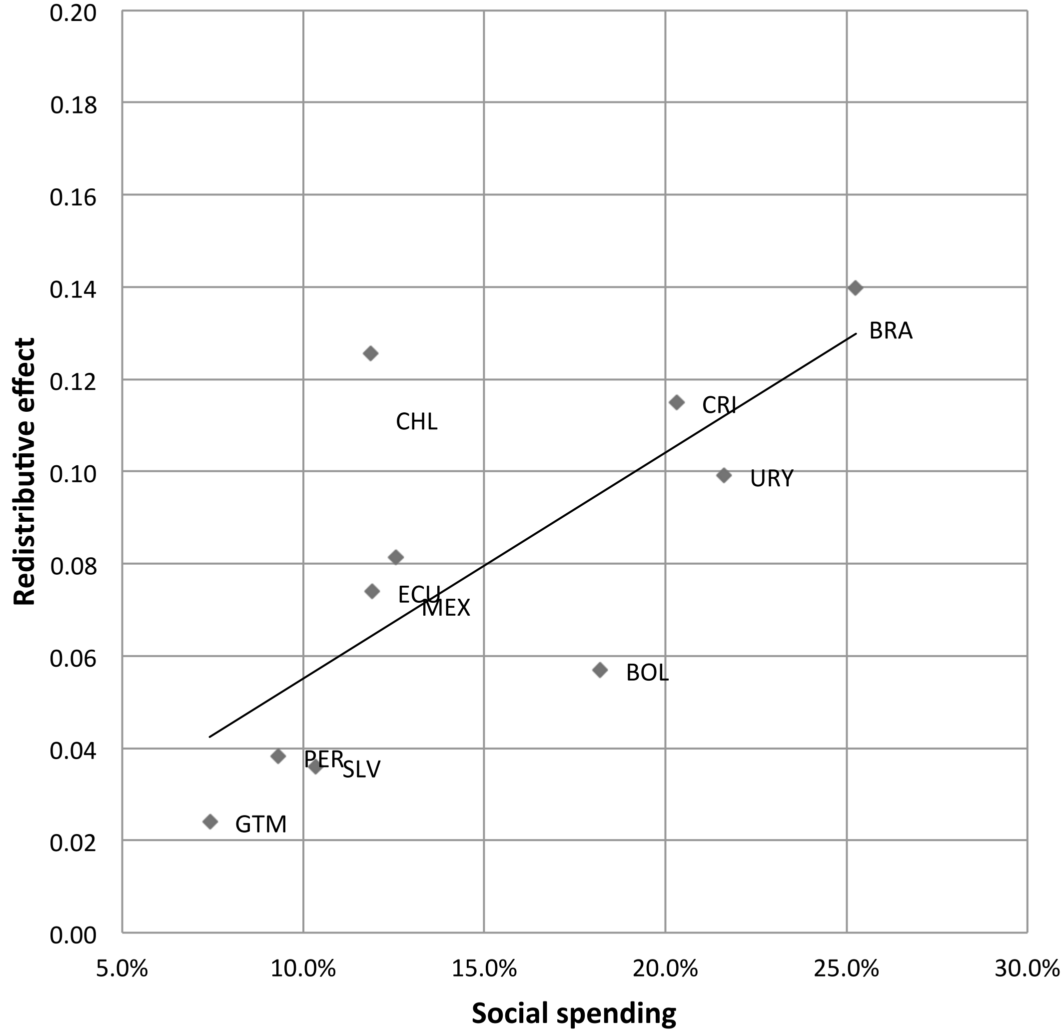


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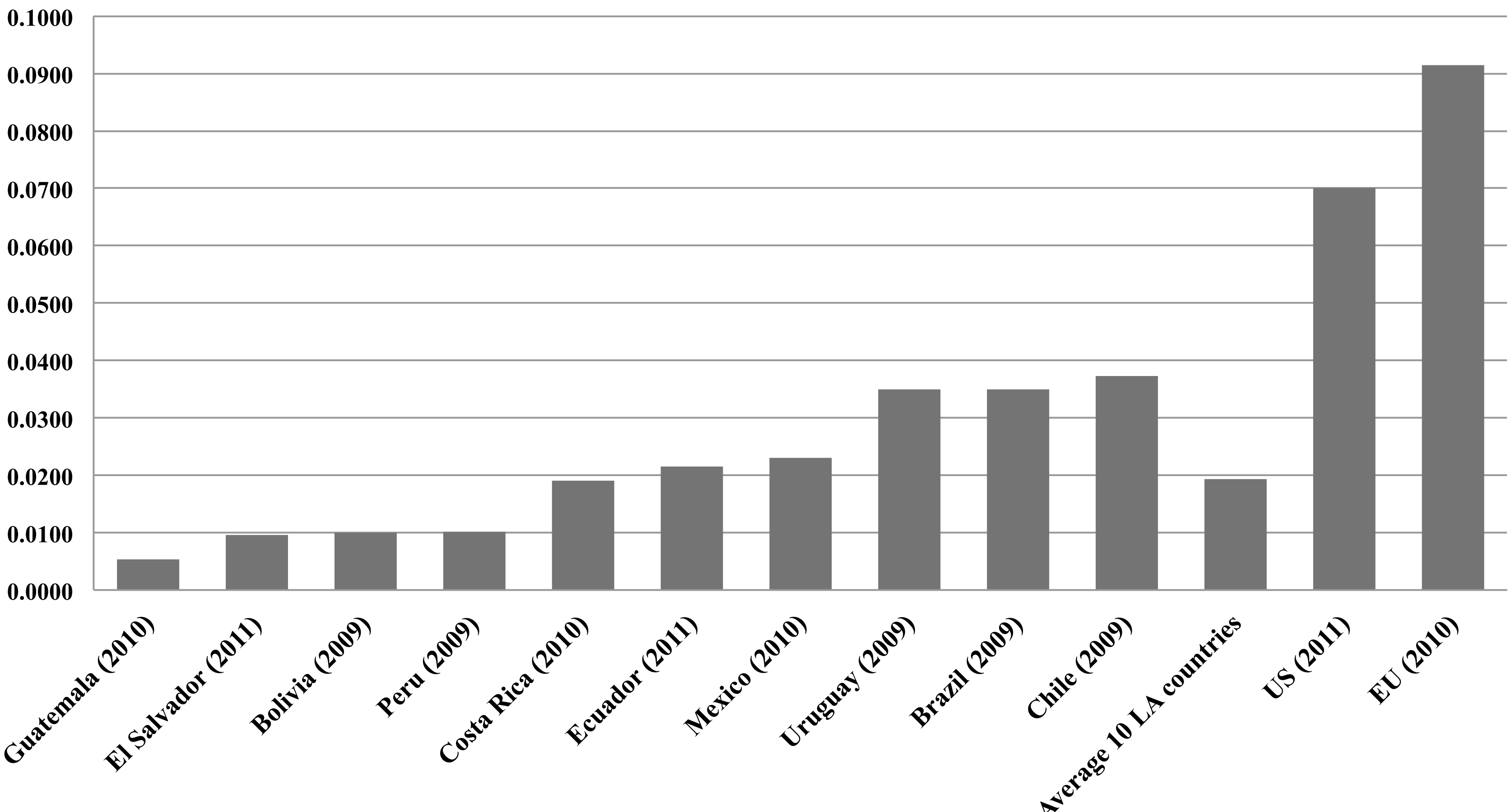
Figure 8: Redistributive effect from market to disposable income: Latin America, US and EU



Source: Lustig (2015c) based on CEQ country assessments: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014; US: Higgins et al. (2015); EU: EUROMOD Statistics on Distribution and Decomposition of Disposable Income, http://www.iser.essex.ac.uk/euromod/statistics/; EUROMOD version no. G2.0. Notes: 1. The year of the household surveys in parentheses; 2. The graph is sorted by the redistributive effect, from lowest to highest, when pensions are part of market income; and 3. Gini coefficients for the United States (US) and European Union (EU) were calculated with income equivalent units.

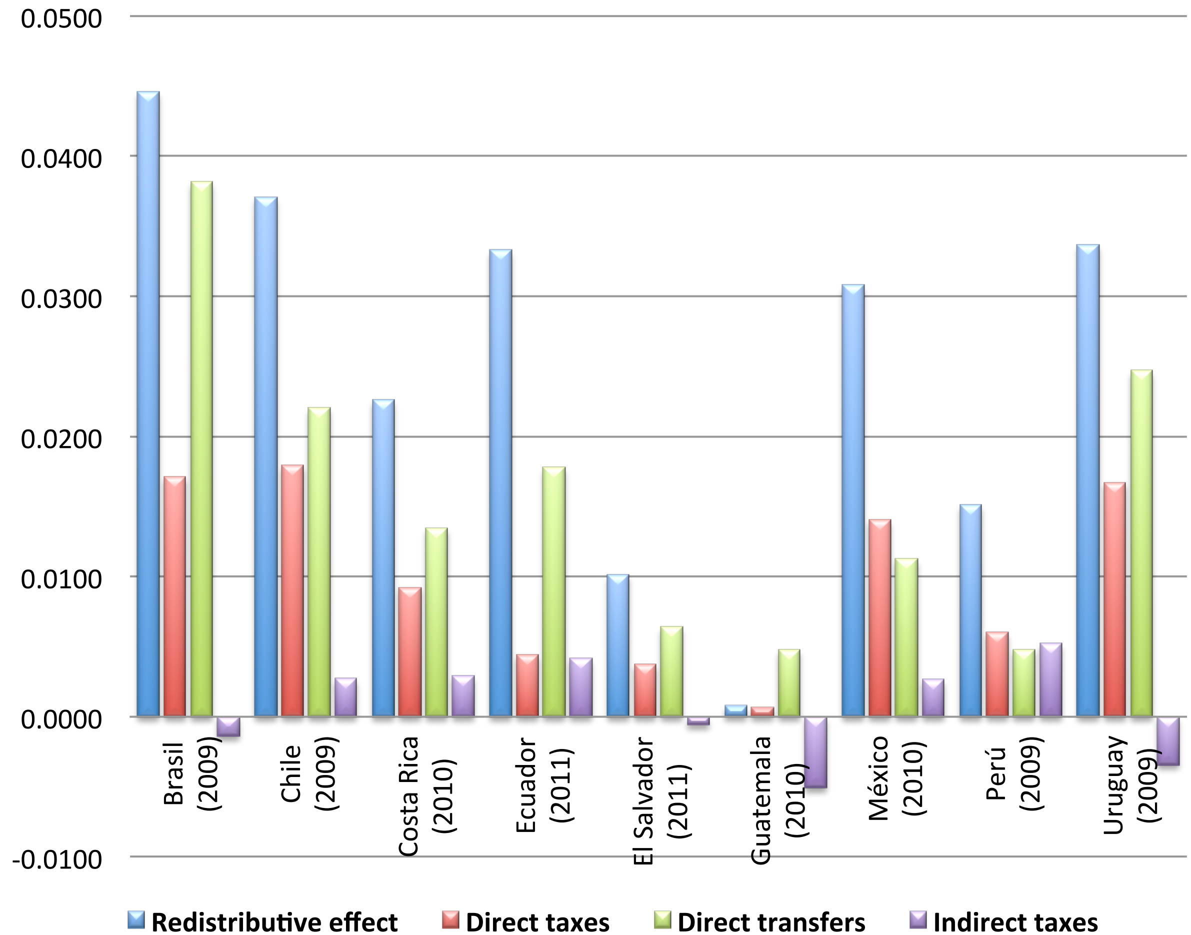
Figure 9: Redistributive effect and marginal contribution of taxes and transfers

1. Direct taxes and direct transfers are always equalizing.

2. The MC of direct taxes is higher than the MC of direct transfers in Mexico and Peru.

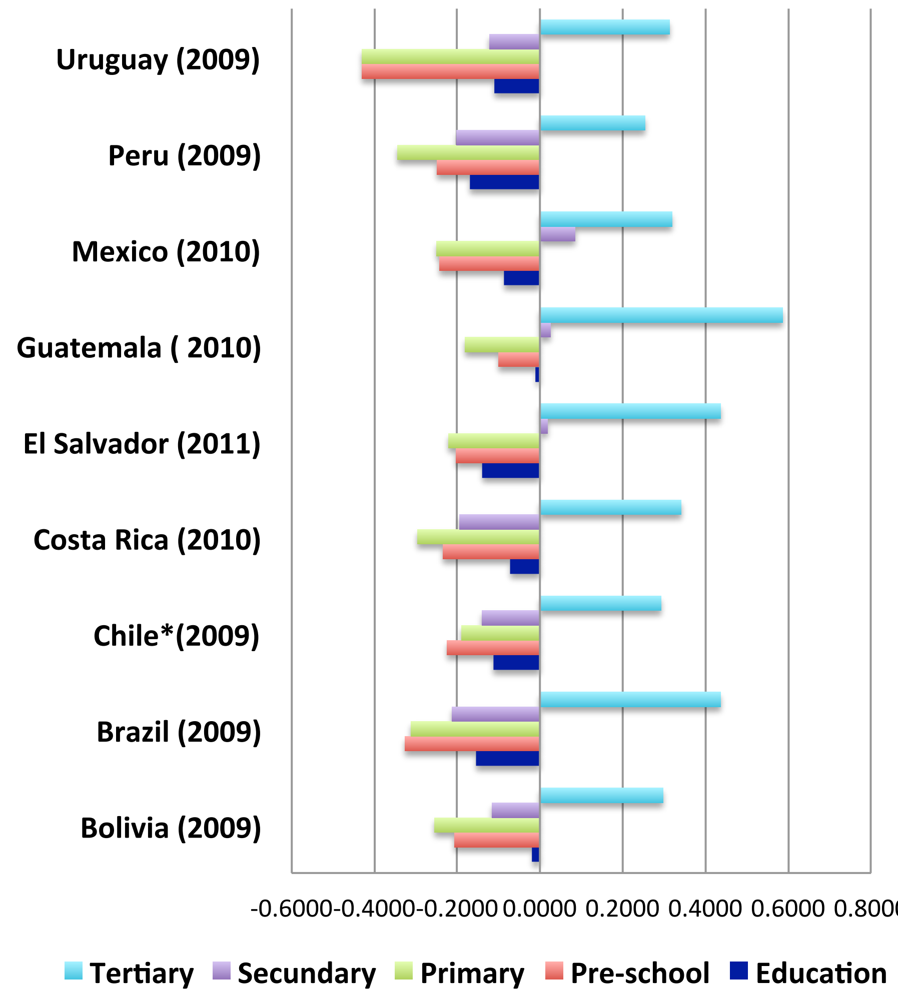
3. Indirect taxes are not always unequalizing

4. In Guatemala the unequalizing effect of indirect taxes overcompensate the equalizing effect of direct transfers.



Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

Figure 10: Concentration coefficients for health and education



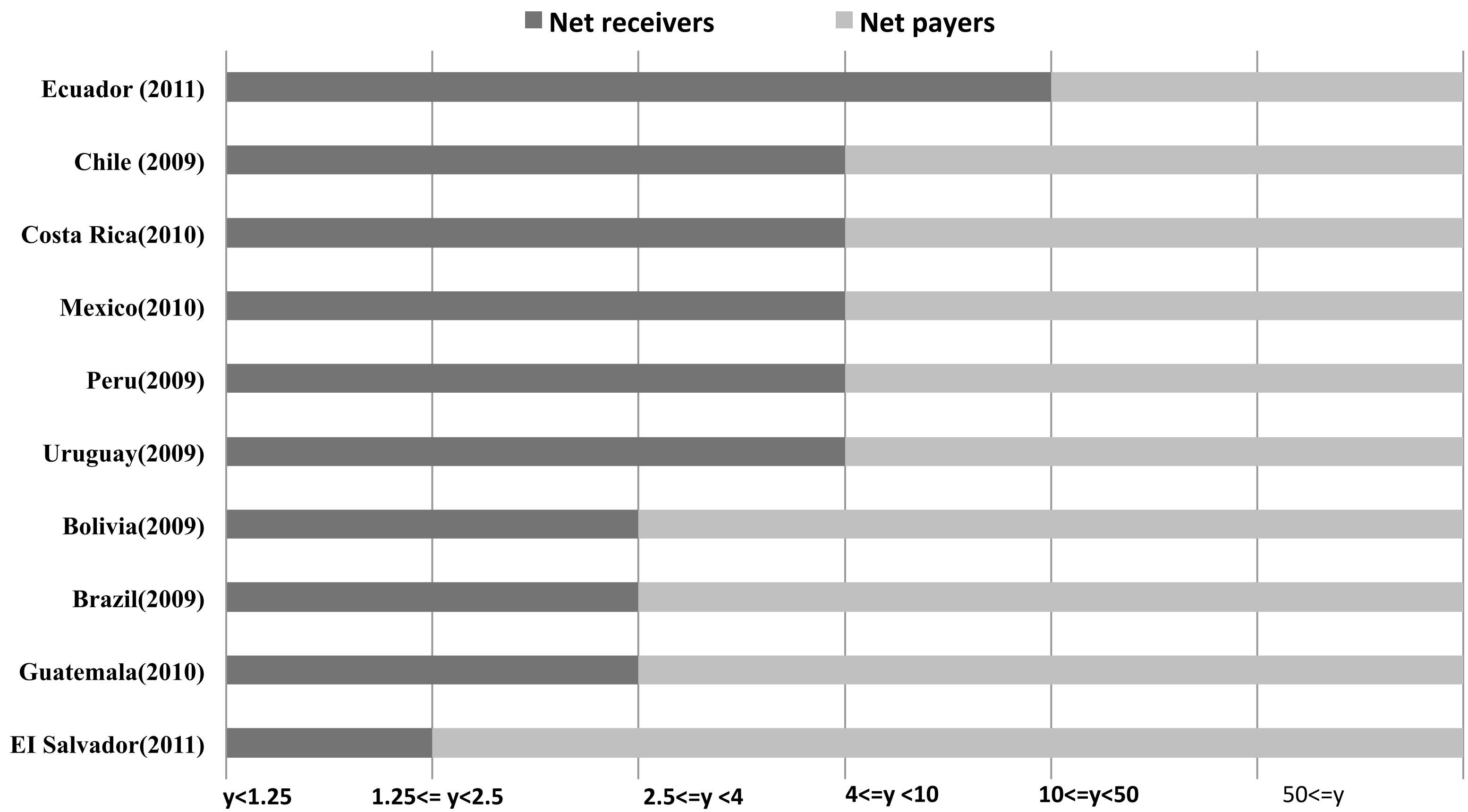
Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

Table 1: Fiscal Policy and Poverty Reduction (circa 2010, poverty line 2.50 PPP dollars per day)

	Headcount $2.5 PPP per day			Percentaje change	
Country	**Market income**	**Disposable Income**	**Post-fiscal Income**	**Market to disposable income**	**Market to final income**
Bolivia(2009)	19.6%	17.6%	20.2%	-10.4%	3.3%
Brasil(2009)	15.1%	11.2%	16.3%	-26.1%	8.1%
Chile(2009)	4.8%	3.2%	3.2%	-32.8%	-32.8%
Costa Rica(2010)	5.4%	3.9%	4.2%	-27.8%	-22.2%
Ecuador (2011)	10.8%	7.7%	7.0%	-28.5%	-35.1%
El Salvador (2011)	19.2%	17.3%	19.1%	-10.1%	-0.8%
Guatemala(2010)	40.3%	39.1%	40.9%	-3.1%	1.6%
México(2010)	12.6%	10.7%	10.7%	-14.9%	-15.1%
Perú(2009)	15.2%	14.0%	14.3%	-7.3%	-5.3%
Uruguay(2009)	5.0%	1.4%	2.5%	-71.4%	-51.1%
PROMEDIO	**14.8%**	**12.6%**	**13.8%**	**-14.8%**	**-6.4%**

Source: Lustig (2015c) based on: Bolivia: Paz-Arauco et al., 2014; Brazil: Higgins & Pereira, 2014; Chile: J. Ruiz & D. Contreras, 2014; Costa Rica: Sauma & Trejos, 2014; Ecuador: Llerena et al., 2015; El Salvador: Beneke et al., 2014; Guatemala: Cabrera et al., 2014; Mexico: Scott, 2014; Peru: Jaramillo, 2013; Uruguay: Bucheli et al., 2014.

Figure 3: Net payers to the fiscal system (circa 2010)



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Final comments

The 10 countries are considerably different from each other in terms of the size of the government and the composition of spending.

- Primary expenditure as a share of GDP ranges from 41.4% in Brazil (similar to advanced OECD countries) to 13.6% in Guatemala.
- Social spending as a share of GDP is also diverse, ranging from 25.3% (similar to the average OECD countries) in Brazil to 7.4% percent in Guatemala.
- Countries that allocate a higher proportion of its budget to social spending are Costa Rica and Uruguay and proportionally less spending in social areas are Peru and Guatemala.
- For OECD countries the social spending is 26.7% on average.

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Final comments

- The findings show that the reduction in inequality induced by the cash proportion of the fiscal system is quite different across countries. Brazil, Chile and Uruguay the most and Guatemala the least.
- Cash proportion of the net fiscal system is always equalizing, but not is the same for poverty (i.e. Brazil)
- The marginal contribution of direct taxes and direct transfers is always equalizing.
- The effect of indirect can be unequalizing, neutral or equalizing. For Chile we find that a regressive tax is not always unequalizing (counter-intutive finding uncovered by Lambert 2001).
- The marginal contribution of spending on education an health is always equalizing. But, tertiary education is regressive in Guatemala.

Thank you!