

# Fiscal Policy and Redistribution in Latin America

## Nora Lustig

International Economic Association  
Dead Sea-Jordan – June 7, 2014

# Outline

- Motivation and CEQ project
- Methodological Highlights
  - Incidence Analysis: What is it?
  - Definitions: income concepts; progressivity
  - Decomposing changes
  - Impoverishment
- Results for Latin America
  - The foreseeable
  - The unexpected
- Latin America in the Broader Context

# Suppose you want to know...

- What is the impact of taxes and government transfers on inequality and poverty?
- Who are the net tax payers to the “fisc”?
- How equitable is the use of government education and/or health services? By income, gender, ethnic origin, for example.
- How progressive are taxes and public spending?

## 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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### Browse map for Publications by Country



Handbook and  
Diagnostic Questionnaire

# Partnerships



## Partners

- Founding partners: Inter-American Dialogue and Tulane University (CIPR and Department of Economics)
- New partner: Center for Global Development (CGD)

## Joint Projects:

- IDB (Judy Morrison): Bolivia, Brazil, Chile, Colombia, Ecuador, Guatemala, Mexico, Peru and Uruguay (by race and ethnicity)
- UNDP (George Grey-Molina) : Ecuador, Nicaragua and Venezuela
- World Bank (Gabriela Inchauste): Armenia, Ethiopia, Indonesia, Jordan, South Africa and Sri Lanka
- World Bank (LCR; Louise Cord): Equity Lab (Carlos Rodriguez); Dominican Republic (Alan Fuchs)
- World Bank (ECA; Luis F. Lopez-Calva): Russia

## Foundations

- Bill and Melinda Gates Foundation: Ghana & Tanzania; Handbook

## Past support

- Canadian International Development Agency (CIDA), Development Bank of Latin America (CAF), General Electric Foundation, International Fund for Agricultural Development (IFAD), Norwegian Ministry of Foreign Affairs

## CEQ Teams

**(Year of Survey; C=consumption & I=income)/(MWB Version)**

1. **Armenia (2011; I):** Stephen Younger and Artsvi Khachatryan (March 12, 2014; paper)
2. **Bolivia (2009; I):** Veronica Paz Arauco, George Gray-Molina, Wilson Jimenez and Ernesto Yañez (CEQ Web Dec 2013) *Public Finance Review*, May 2014, Volume 42, Issue 3
3. **Brazil (2009; I):** Sean Higgins and Claudiney Pereira (CEQ Web Dec 2013) *Public Finance Review*, May 2014, Volume 42, Issue 3
4. **Costa Rica (2010; I):** Pablo Sauma and Juan Diego Trejos (February 2014; paper)
5. **El Salvador (2011; I):** Margarita Beneke, Nora Lustig and Jose Andres Oliva (March 11, 2014)
6. **Ethiopia (2010/11; C):** Ruth Hill, EyasuTsehay, Tassew Woldehanna (April 30, 2014)
7. **Guatemala (2011; I):** Maynor Cabrera, Nora Lustig and Hilcias E. Moran (April 13, 2014)
8. **Indonesia (2012; C) :** Jon Jellema and Matthew Wai-Poi (February 18, 2014)

### (Year of Survey; C=consumption & I=income)(MWB Version)

9. **Jordan (2010; C)** : Morad Abdel-Halim, Shamma Adeeb Alam, Yusuf Mansur, Umar Serajuddin, Paolo Verme (April 18, 2014)
  10. **Mexico (2010; I)**: John Scott (CEQ Web Dec 2013) *Public Finance Review*, May 2014, Volume 42, Issue 3
  11. **Peru (2009; I)**: Miguel Jaramillo (CEQ Web Dec 2013) *Public Finance Review*, May 2014, Volume 42, Issue 3
  12. **South Africa (2010; I)**: Ingrid Woolard, Precious Zikhali, Mashekwa Maboshe, Jon Jellema (May 5, 2014)
  13. **Sri Lanka (2009/10; C)**: Nisha Arunatilake, Gabriela Inchauste and Nora Lustig (April 8, 2014; paper)
  14. **United States (2011; I)**: Sean Higgins, Nora Lustig, Whitney Ruble and Timothy Smeeding
  15. **Uruguay (2009; I)**: Marisa Bucheli, Nora Lustig, Maximo Rossi and Florencia Amabile (CEQ Web Dec 2013) *Public Finance Review*, May 2014, Volume 42, Issue 3
- **Research Assistant:** Yang Wang, Tulane University

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# Commitment to Equity Assessments (CEQ)

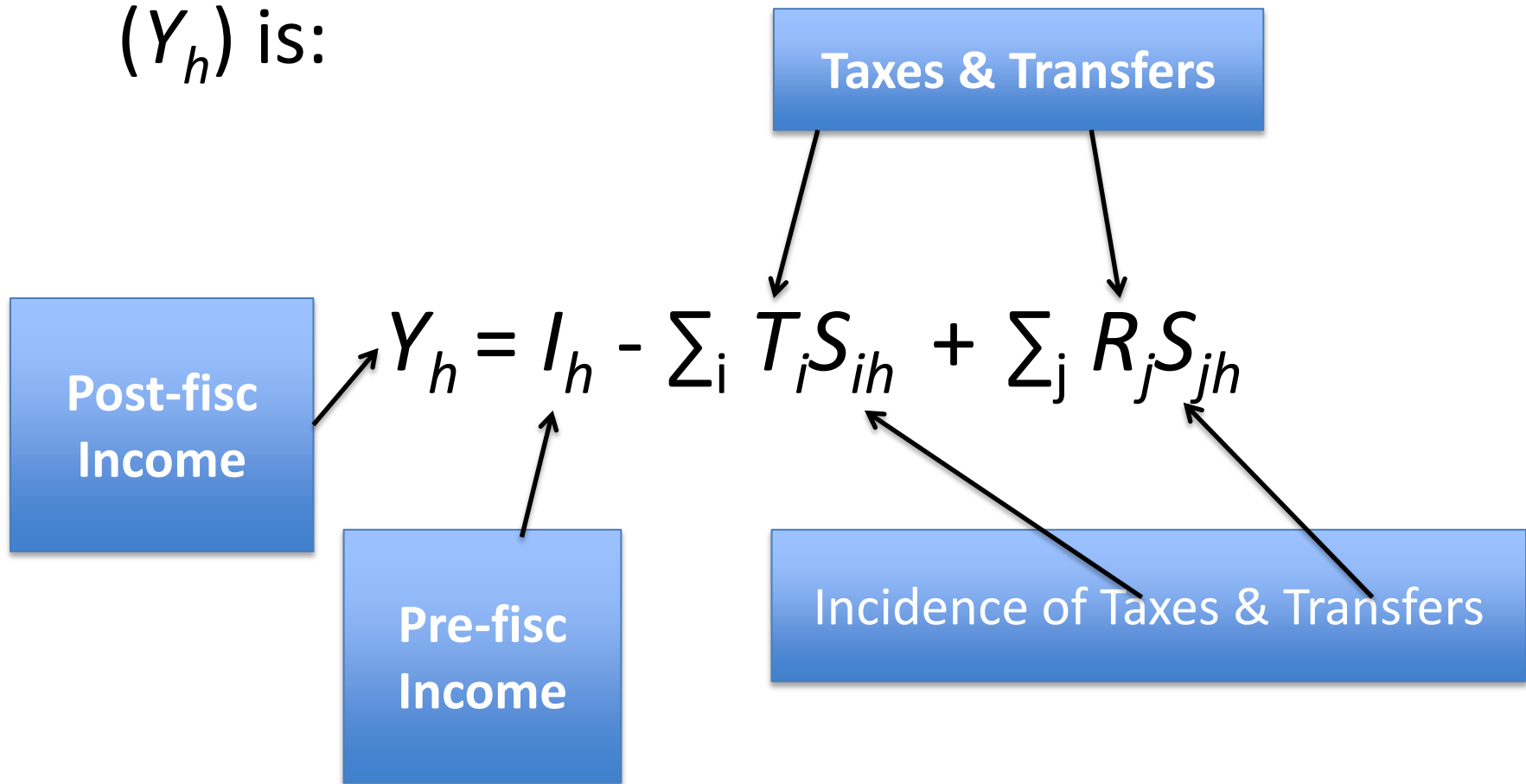
- Accounting Approach: no behavioral, no general equilibrium effects and no intertemporal effects; however, economic incidence is introduced with assumptions (Pechman and Okner, 1974; Fullerton and Metcalf, 2002; Martinez, 2008)
- Point-in-time
- Mainly average incidence; a few cases with marginal incidence
- Comprehensive standard fiscal incidence analysis of current systems
- Harmonized definitions and methodological approaches to facilitate cross-country comparisons
- Uses income/consumption per capita as the welfare indicator
- Allocators vary => full transparency in the method used for each category, tax shifting assumptions, tax evasion
- Secondary sources are used to a minimum
- [Handbook](#) (Lustig and Higgins, 2013)

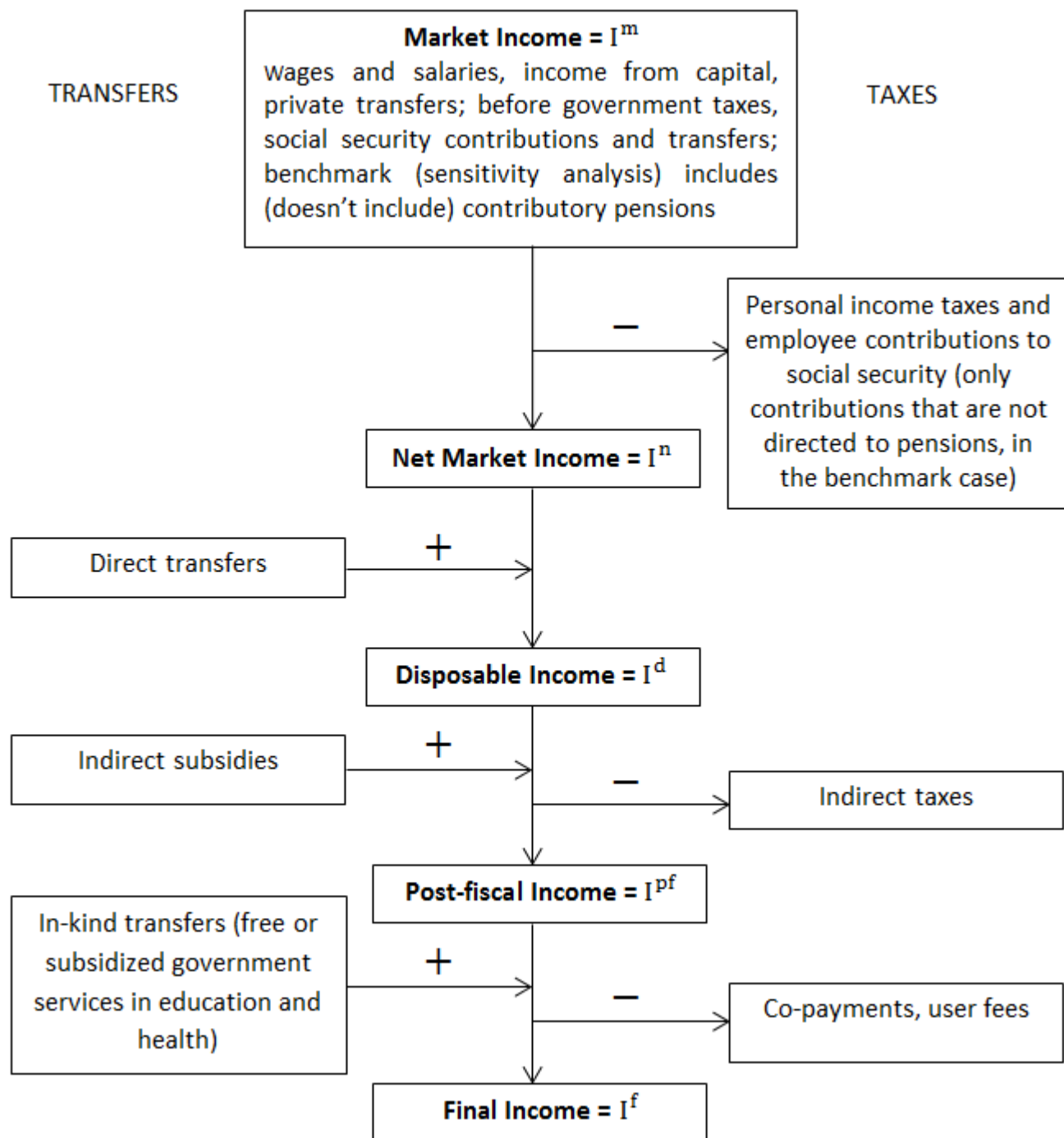
# Basic elements of standard fiscal incidence

- Before taxes and transfers income of unit  $h$ , or  $I_h$
- Taxes  $T_i$ 
  - personal income taxes; contributions to social security
  - consumption and production taxes and subsidies
- Transfers  $R_i$ 
  - social spending: cash & near-cash transfers; in-kind transfers (education and health)
  - consumption and production (agriculture) subsidies
- “Allocators” of tax  $i$  and transfer  $j$  to unit  $h$ , or  $S_{ih}, S_{jh}$  (the share of tax  $i$  borne or transfer  $j$  received by unit  $h$ )

# Basic elements of standard fiscal incidence

- Post-taxes and transfers income of unit  $h$  ( $Y_h$ ) is:





# Allocation Methods

Direct Identification in microdata

If not in microdata, then:

- Simulation
- Imputation
- Inference
- Alternate Survey
- Secondary Sources

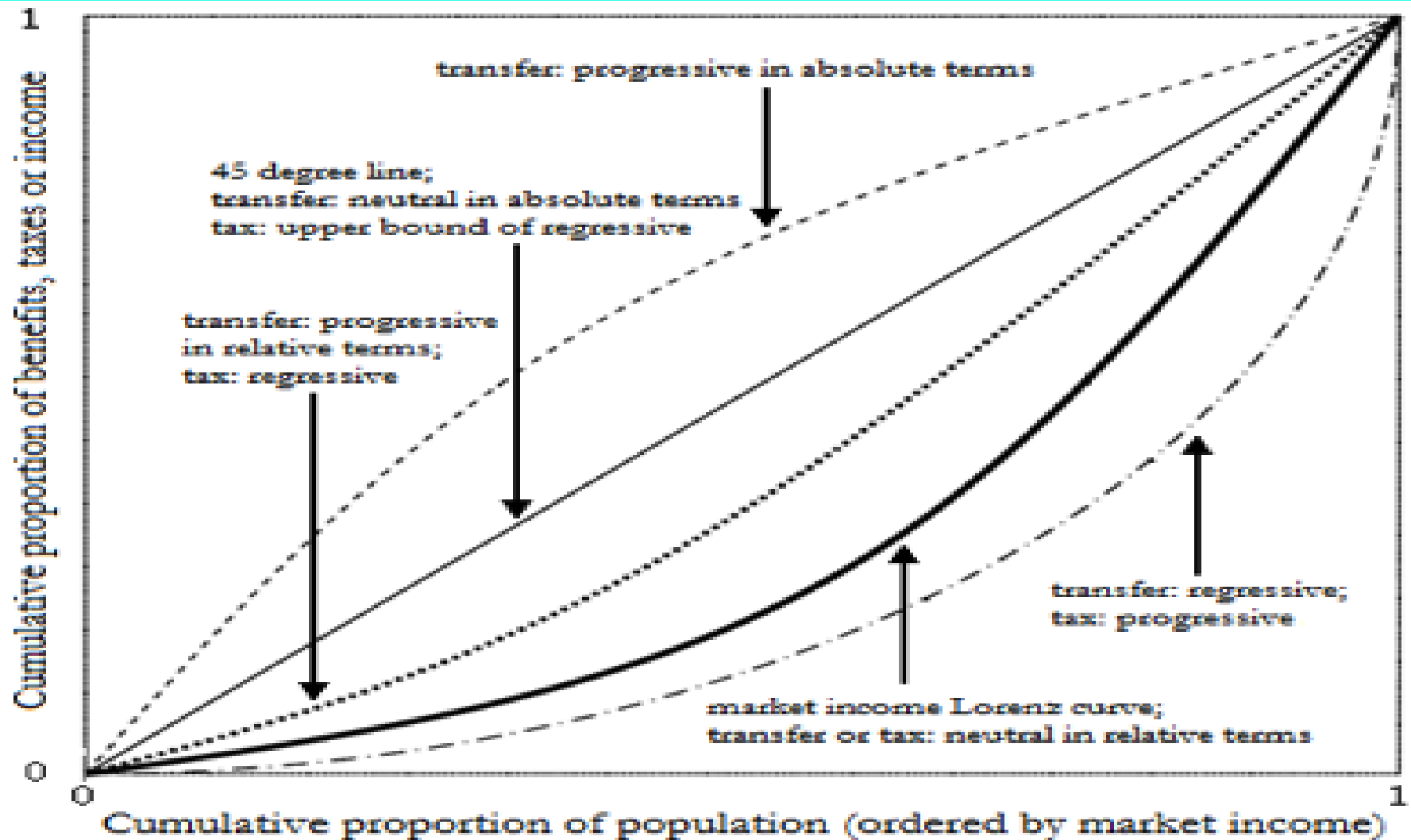
# Allocation Methods: Economic Incidence

- Tax shifting assumptions
- Tax evasion assumptions
- Take-up of cash transfers programs
- Monetizing in-kind transfers

# Methodological Contributions

- Clarify and homogenize terminology: e.g., definitions of progressive or regressive taxes and transfers
- Disaggregate changes in outcome indicators (disposable income inequality or poverty) into market and redistribution component
- Development of new indicator: rate of impoverishment

# Definitions of Progressive and Regressive





# Disaggregating Changes into Market and Redistribution Components

$$G_d^t = G_m^t - R^t \quad (1)$$

$$G_d^{t'} = G_m^{t'} - R^{t'} \quad (2)$$

Subtracting (2) from (1) and re-arranging yields:

$(G_d^{t'} - G_d^t)$	$=$	$(R^{t'} - R^t)$	$+$	$(G_m^{t'} - G_m^t)$
Change in Disposable Income Inequality (Poverty)		Redistribution		Change in Market Income Inequality (Poverty)

# Rate of Impoverishment

- Extent to which poor (nonpoor) people who are made poorer (poor) by fiscal system
- Traditional indicators of poverty, inequality, stochastic dominance, horizontal inequity, progressivity fail to capture impoverishment
- Proposed measures (show example for Brazil later):
  - Fiscal Mobility Matrix
  - Impoverishment Headcount
  - Axiomatically derived measure

*See Higgins and Lustig (2013 and 2014)*

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# Main Results

- Six countries publication in Public Finance Review: Argentina, Bolivia, Brazil, Mexico, Peru and Uruguay
- Six countries in recently finished or still in progress (preliminary results): Chile, Colombia, Costa Rica, El Salvador, Guatemala, Paraguay

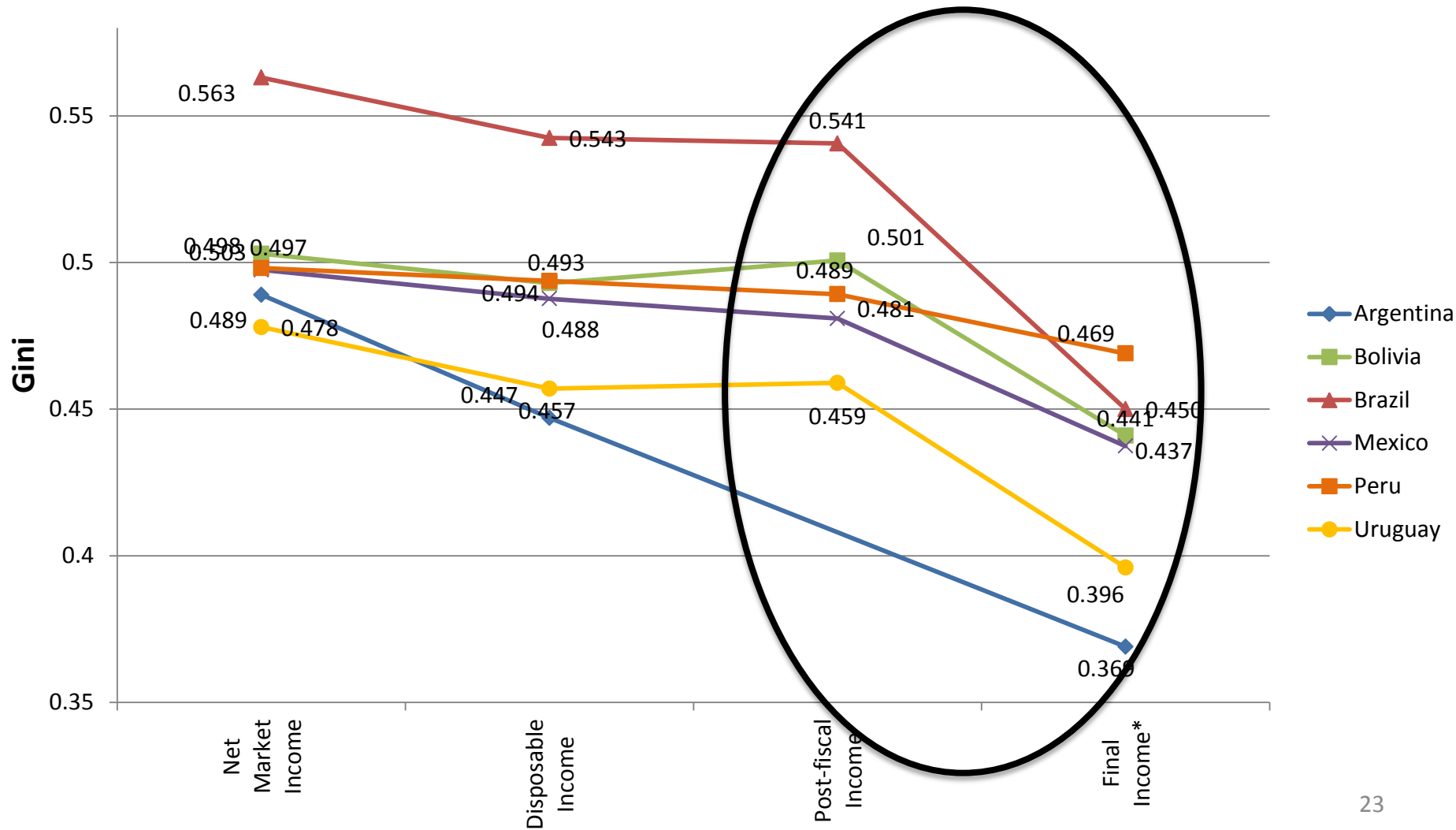
# Main Results: the Foreseeable

- Direct Taxes generally progressive but with little impact on inequality
- CCTs progressive in absolute terms; well targeted in practically all countries
- Indirect taxes regressive or neutral
- Redistribution is larger through in-kind benefits in education and health than cash transfers

# Progressivity of Taxes & Transfers

			Argentina	Bolivia	Brazil	Mexico	Peru	Uruguay
Gini Market Income			0.49*	0.50	0.58	0.51	0.50	0.49
Kakwani Coefficient	Taxes	Direct Taxes	na	ne	0.19	0.30	0.43	0.25
		Indirect Taxes	na	-0.13	-0.06	0.01	0.02	-0.05
		All	na	-0.13	0.02	0.11	0.08	0.07
Concentration Coefficients	Transfers	Noncontributory Pensions	-0.27	0.01	-0.48	-0.10	ne	-0.53
		Flagship CCTs <sup>a</sup>	-0.50	-0.25	-0.58	-0.54	-0.65	-0.61
		All	-0.31	-0.07	0.03	-0.30	-0.48	-0.47
	Education	Pre-school	na	-0.21	-0.33	-0.24	-0.25	-0.45
		Primary	-0.39	-0.25	-0.31	-0.25	-0.34	-0.43
		Secondary	-0.24	-0.12	-0.21	-0.08	-0.20	-0.12
		Tertiary	0.20	0.30	0.44	0.32	0.31	0.47
		All	-0.20	-0.02	-0.15	-0.09	-0.17	-0.11
		Health Spending	-0.23	-0.04	-0.11	0.04	0.18	-0.10

# Public spending on education and health is a more powerful equalizer than cash transfers (Sources: see references at the end)

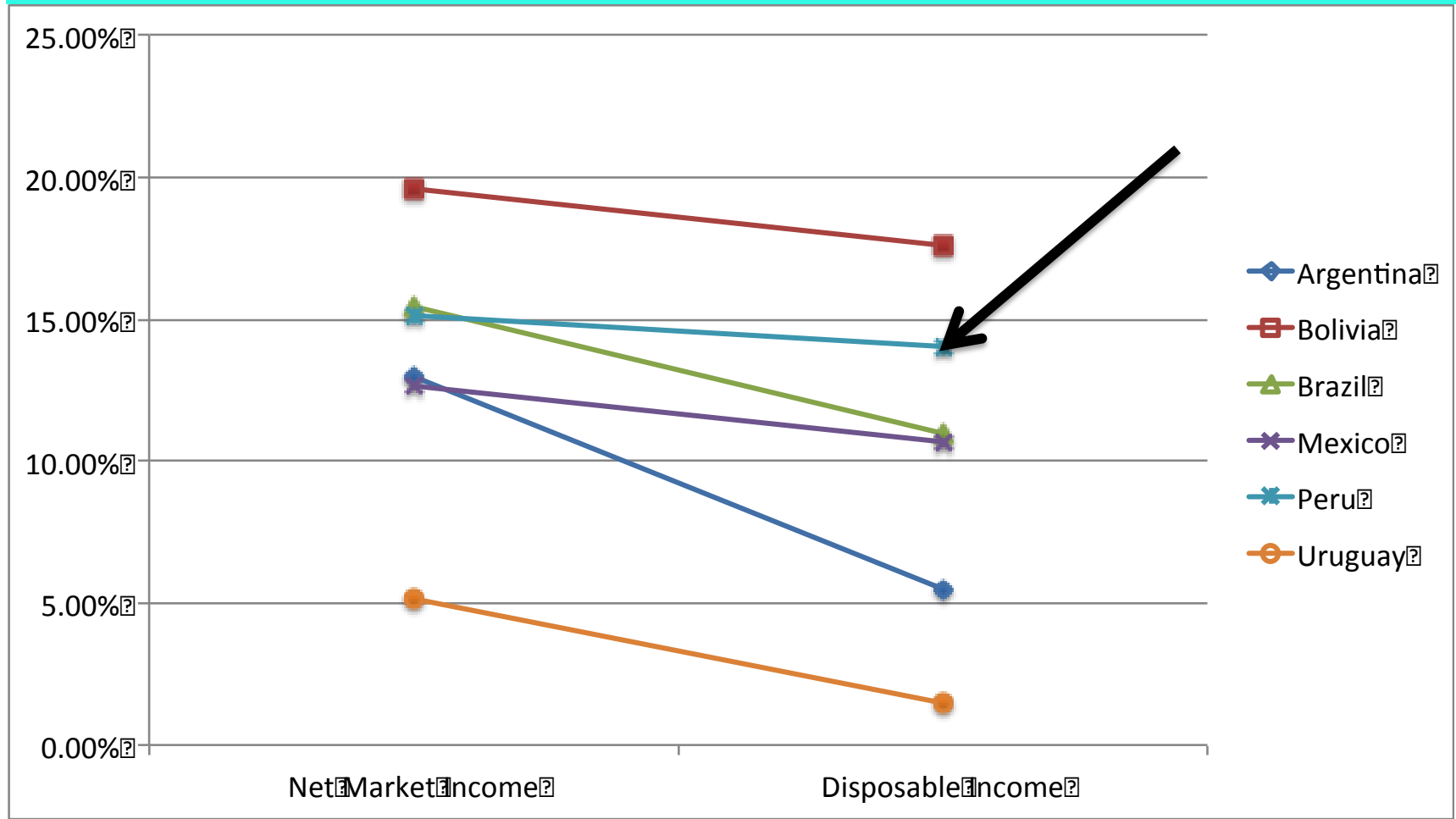


# **Cash Transfers reduce poverty notably only when targeted and of significant magnitude**

- Cash transfers reduce extreme poverty by more than 60 percent in Uruguay and Argentina...  
....but only by 7 percent in Peru, which spends too little on cash transfers to achieve much poverty reduction



# Headcount: Before and After Cash Transfers



Sources: see references at the end

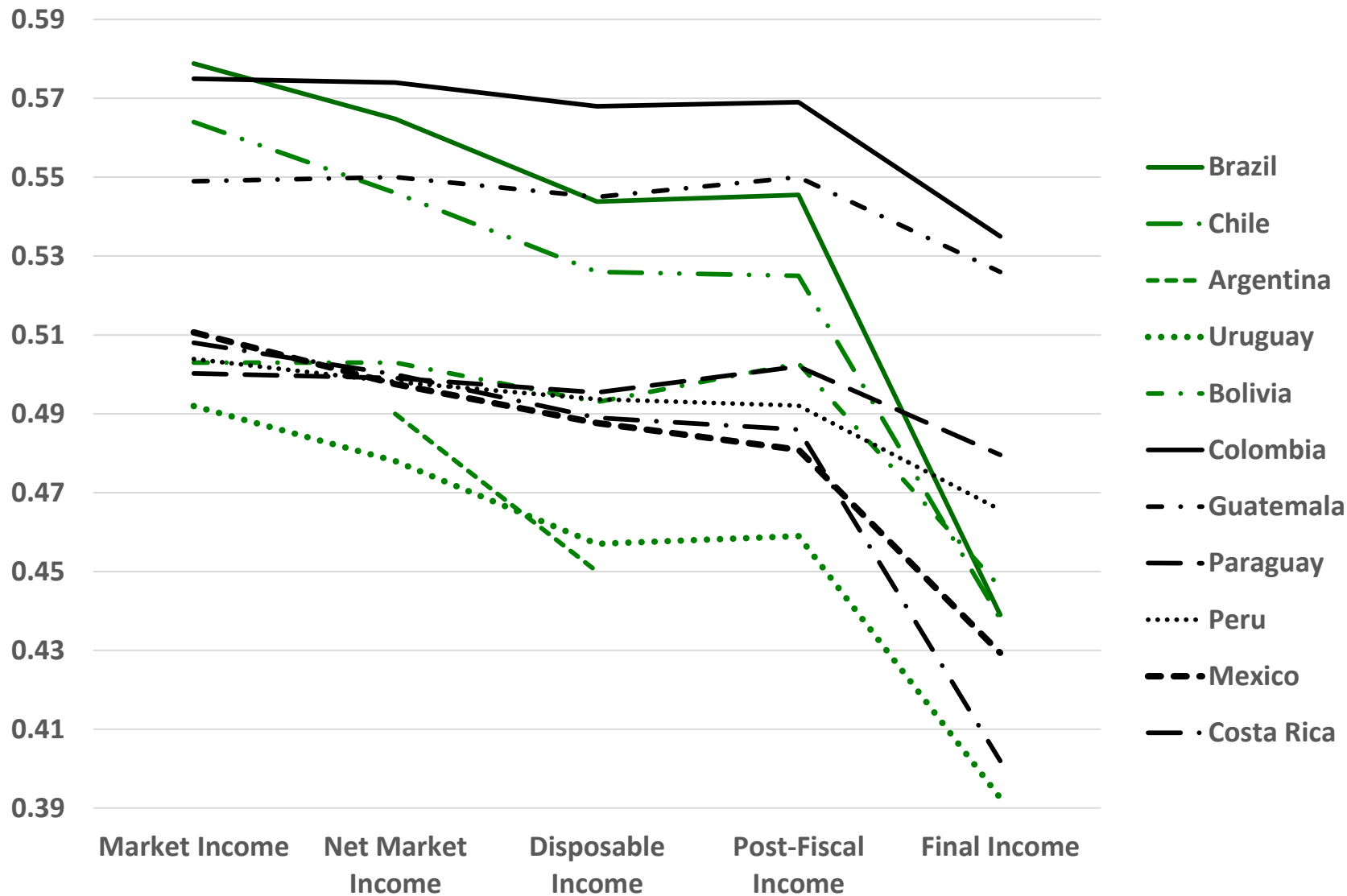
# Main Results: the Foreseeable

- Leftist governments tend to be more redistributive

# Fiscal Policy and Political Regime

Gini: Left (Green) Nonleft (Black)

(Sources: see references at the end)

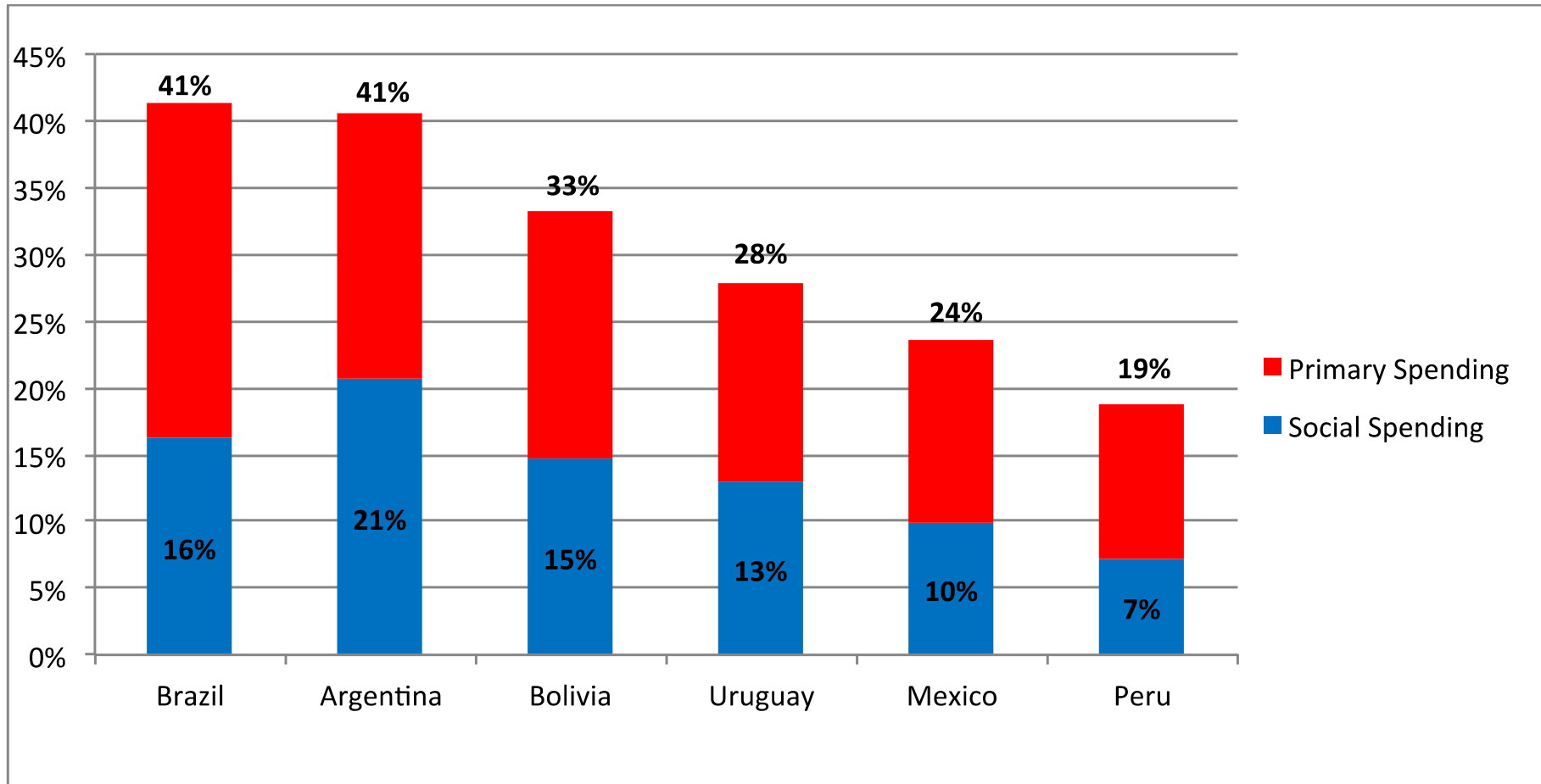


# Main Results: the Unexpected

- Diversity:
  - government size: primary spending from 40 in Brazil to 14 percent of GDP in Guatemala
  - extent of redistribution: 3.8 pts in Chile to 0.4 in Gua
- Net payers to the fisc (in terms of cash) start at relatively low deciles
- Tertiary Education is progressive in relative terms or neutral, except for Guatemala where it is regressive
- Contributory Pensions are progressive (in relative terms) or regressive depending on the country

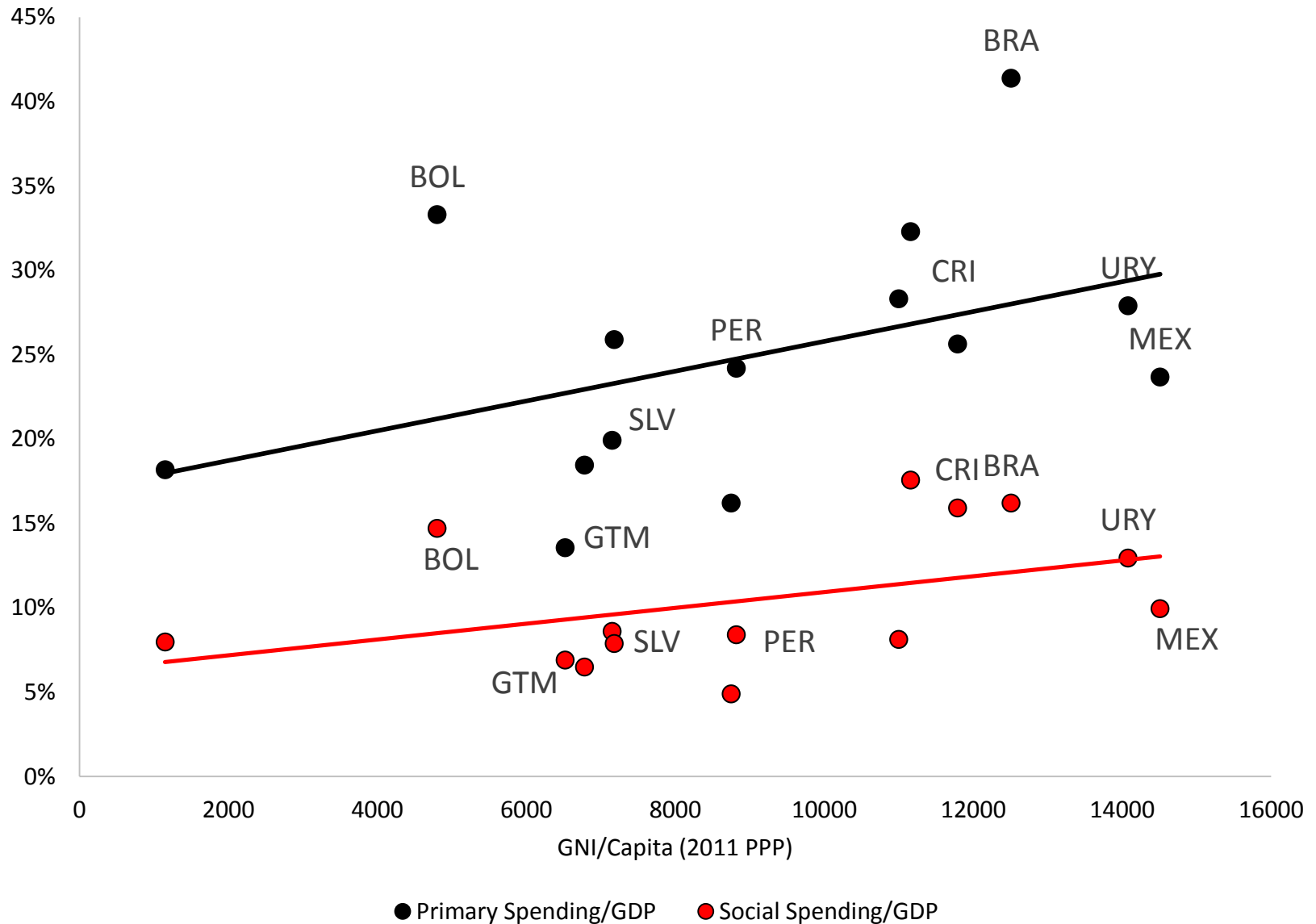
# Budget Size and Composition

## Primary and Social Spending as % of GDP



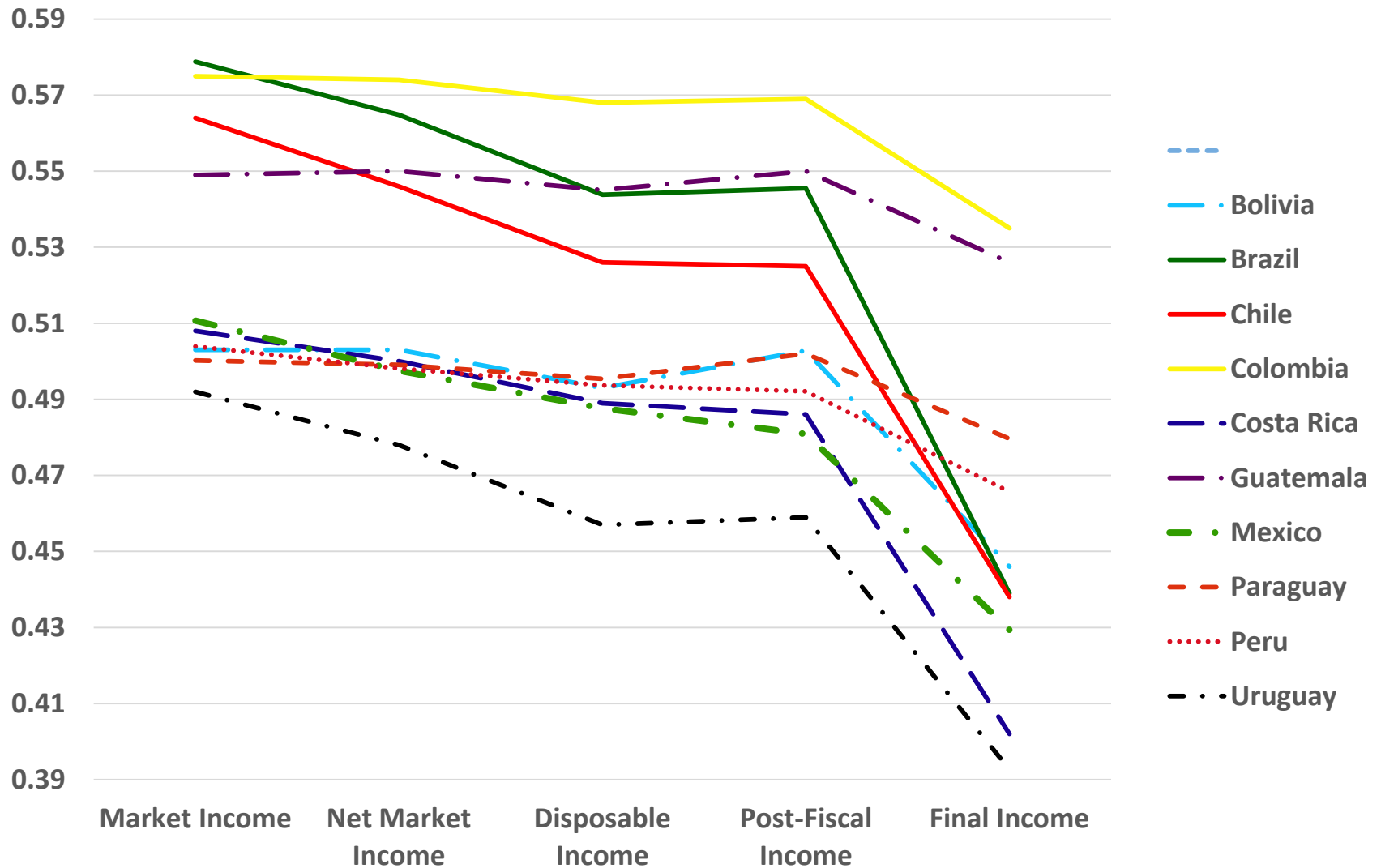
Sources: see references at the end

## Primary and Social Spending vs GNI/capita



# Fiscal Policy and Inequality

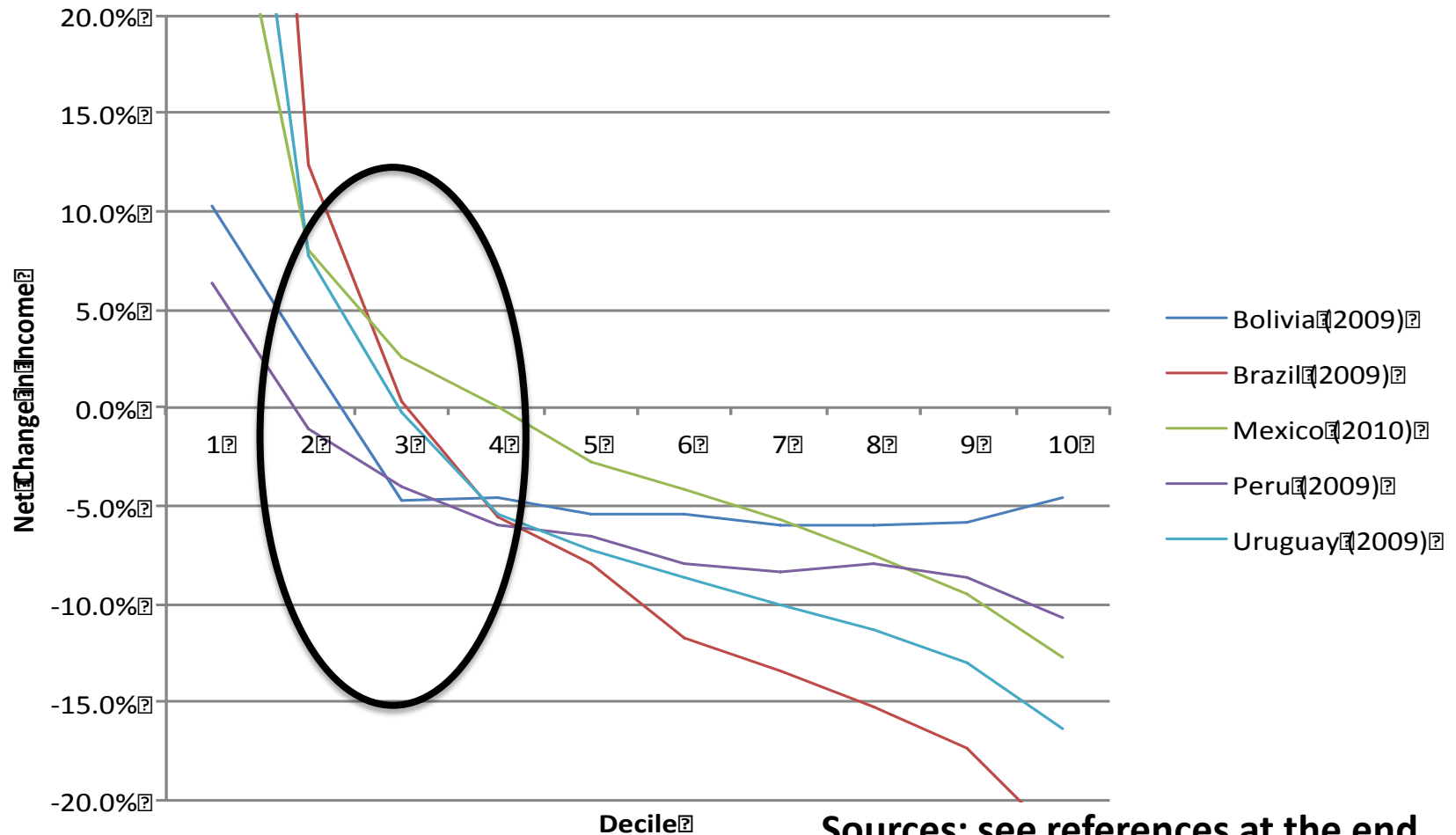
## Gini Coefficient by Income Concept



Sources: see references at the end

# Net Payers to the Fisc

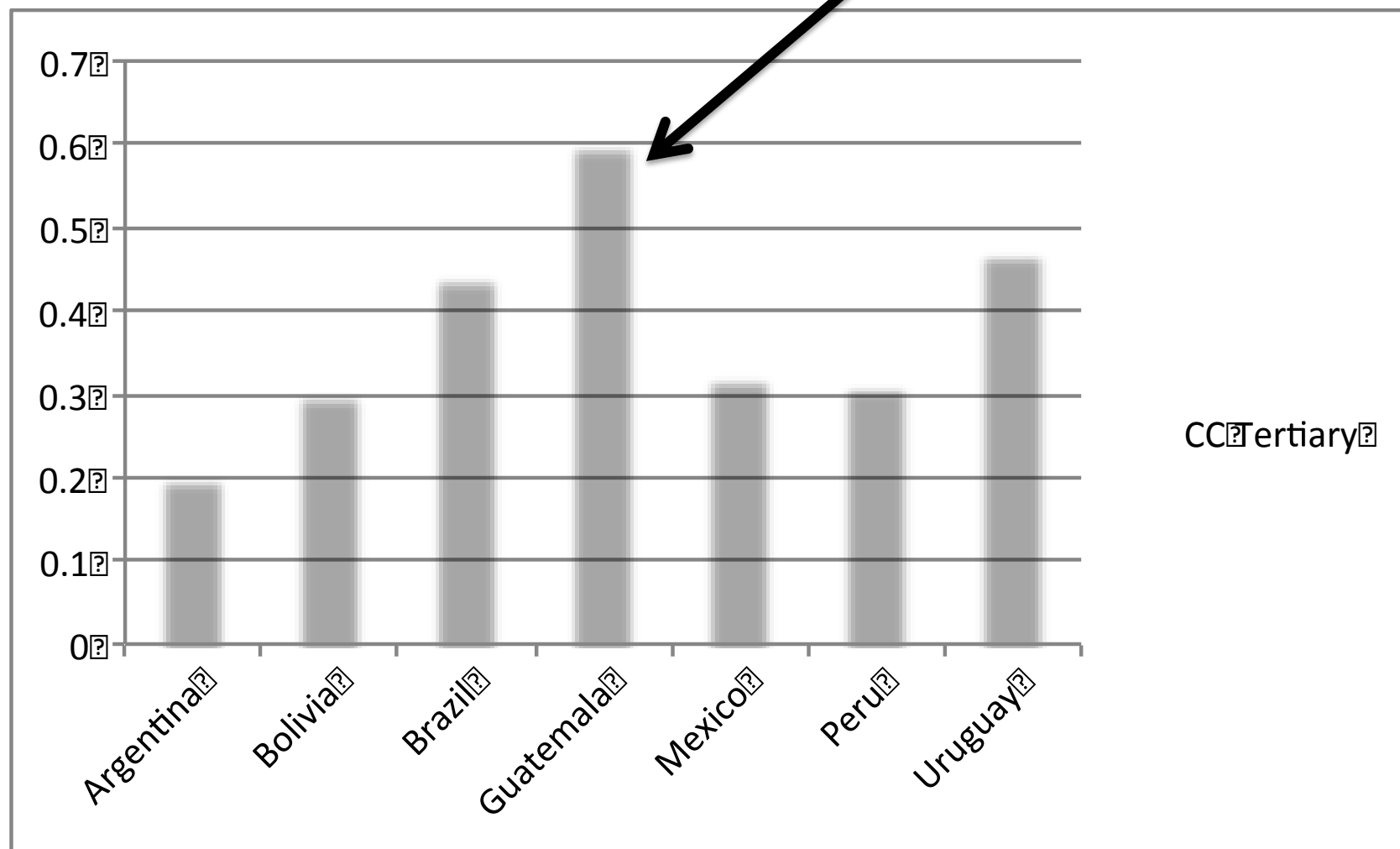
Incidence of Post-Fiscal Income by Decile



Sources: see references at the end



# Concentration Coefficient of Tertiary



Sources: see references at the end

# Contributory Pensions and Inequality

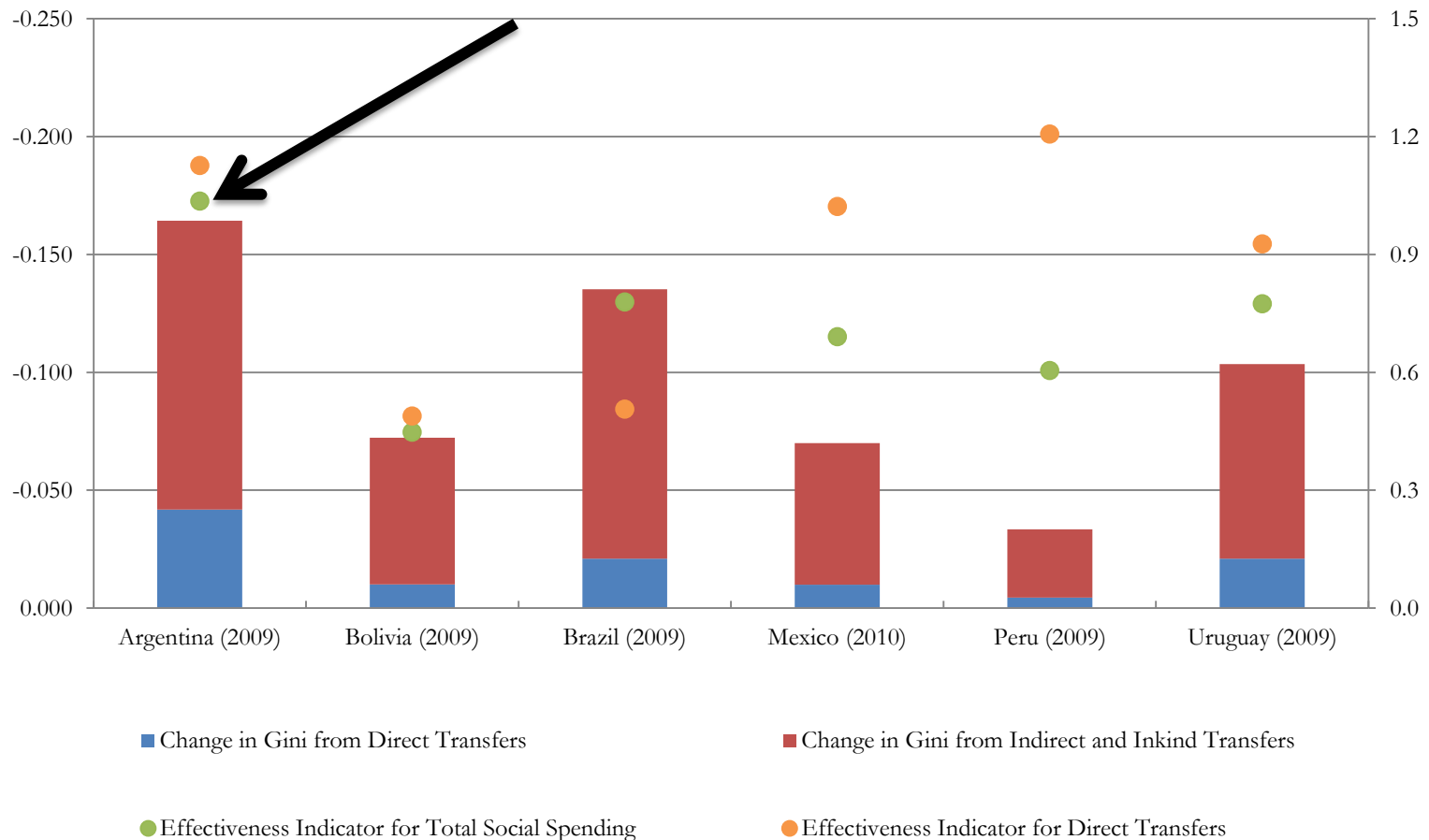
	Argentina (2009)	Bolivia (2009)	Brazil (2009)	Mexico (2010)	Peru (2009)	Uruguay (2009)
Pensions as % GDP	7.2	3.5	9.1	3.7	0.9	8.7
Gini pre-pensions	0.506	0.503	0.600	0.509	0.503	0.527
Gini post-pensions	0.489	0.503	0.579	0.511	0.504	0.492
Change in pts	-1.7	0.0	-2.1	0.2	0.1	-3.5

Sources: see references at the end

# Main Results: the Unexpected

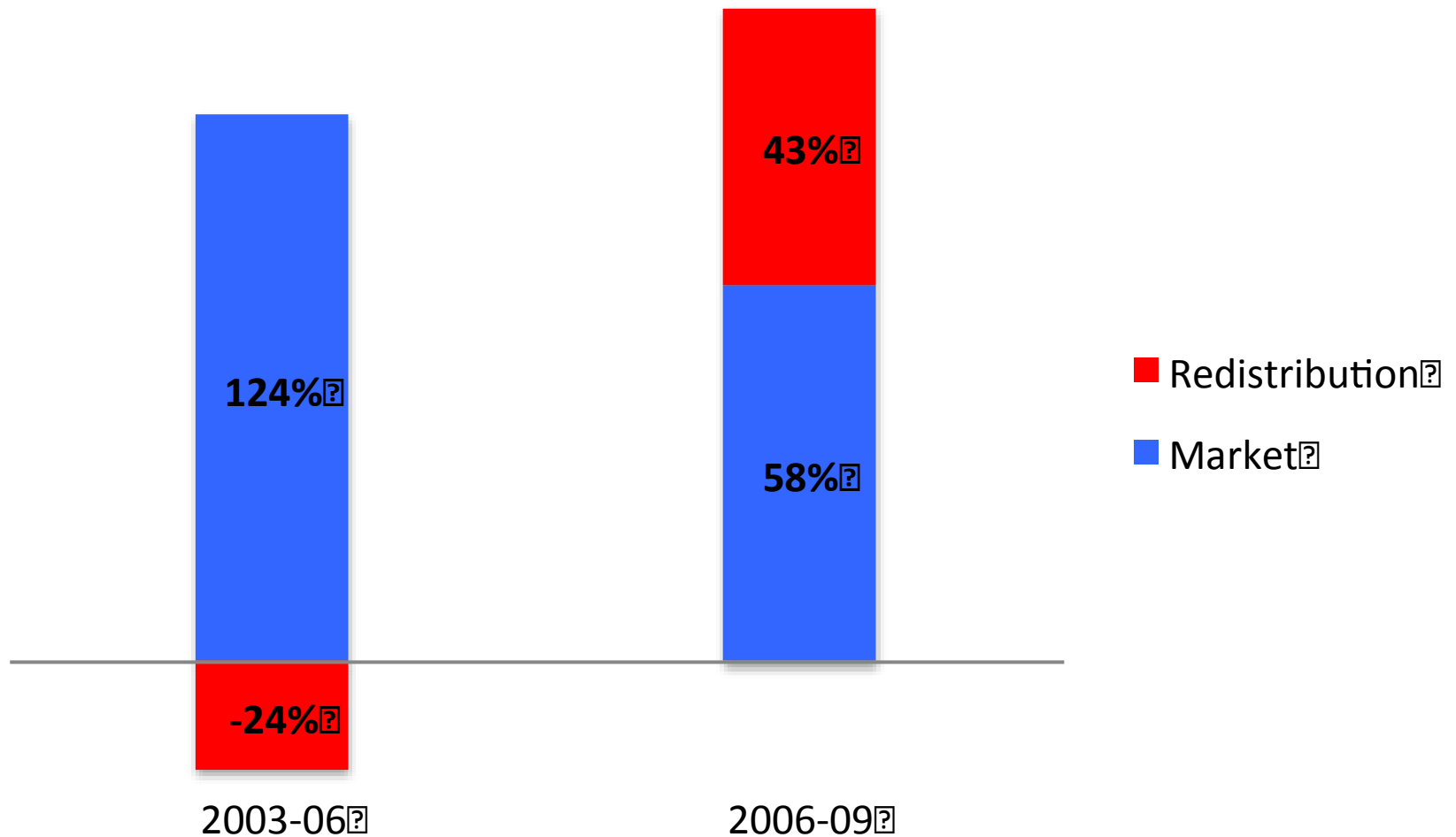
- Argentina is among the most 'effective' countries at redistribution and poverty reduction; however, redistribution might have gone "too far"
- Bolivia is a leftist government that redistributes little
- Brazil
  - indirect taxes wipe out cash transfers' benefits to the poor and cause a significant amount of impoverishment
  - the poor whites receive more in cash transfers than the poor black and pardos

# Argentina: Redistributive Effectiveness



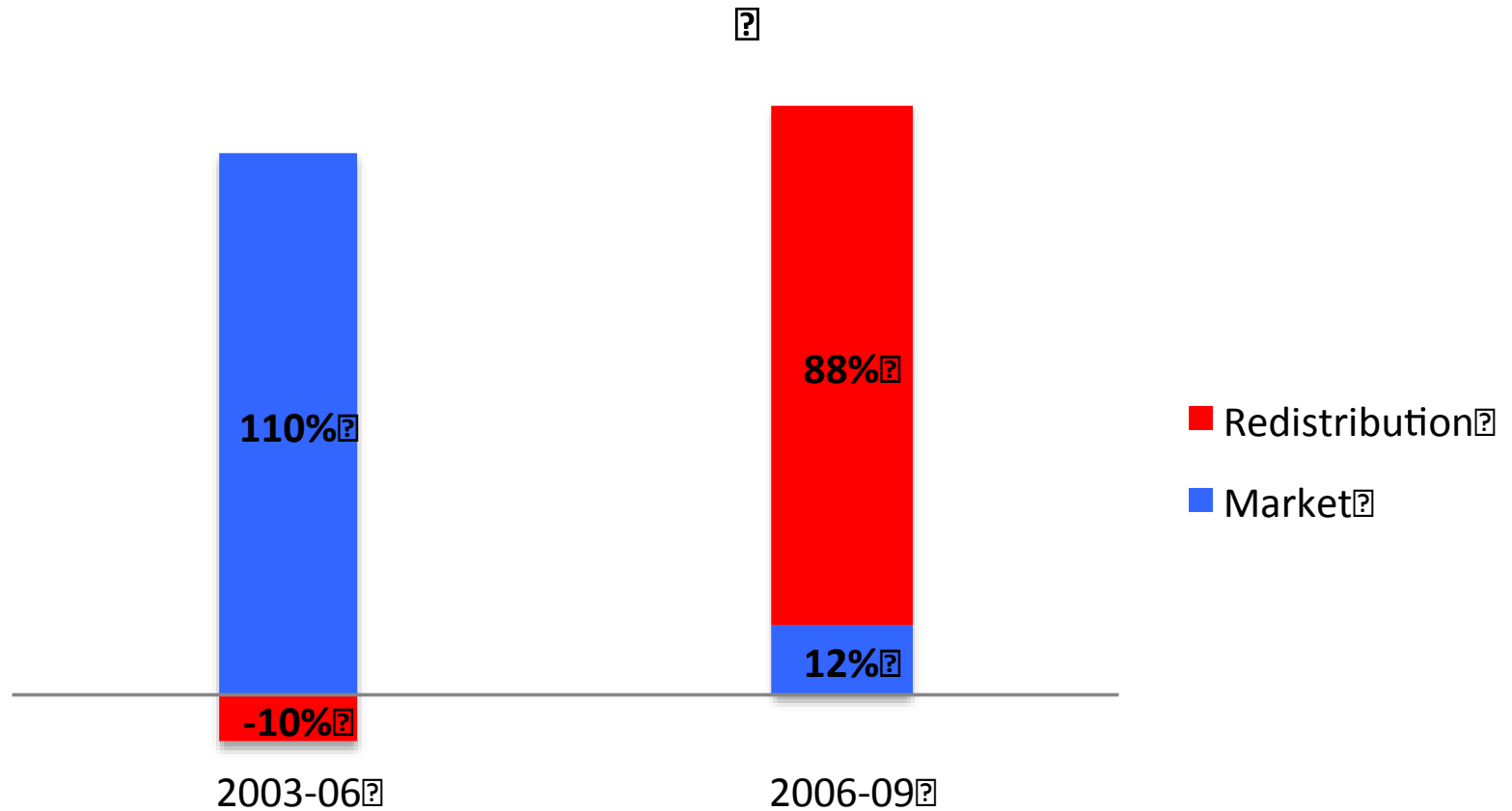
Sources: see references at the end

## Argentina-Reduction in Inequality: Market (blue) vs. Redistribution (red)



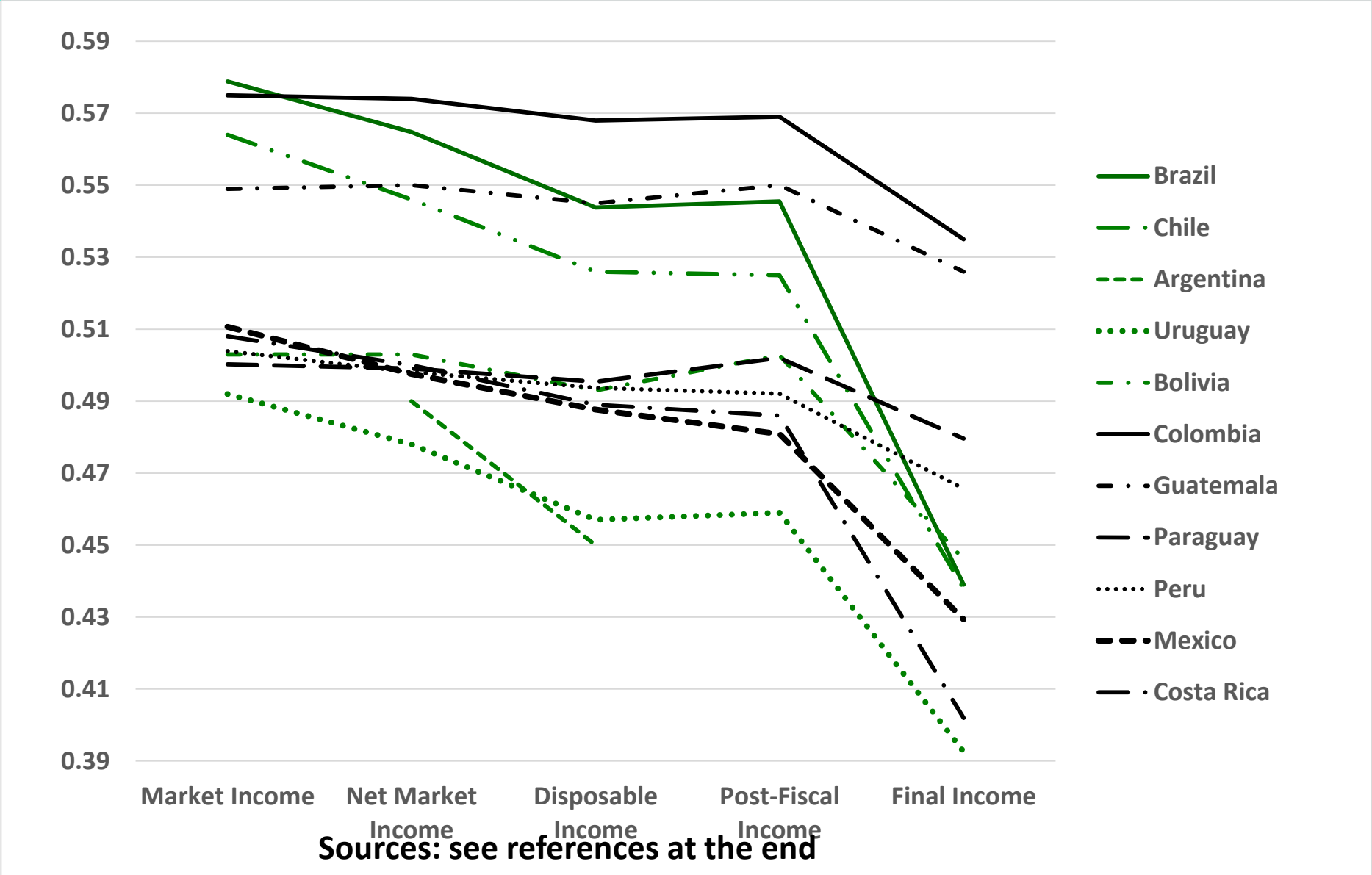
Sources: see references at the end

# Argentina-Reduction in Poverty: Market (blue) vs. Redistribution (red)



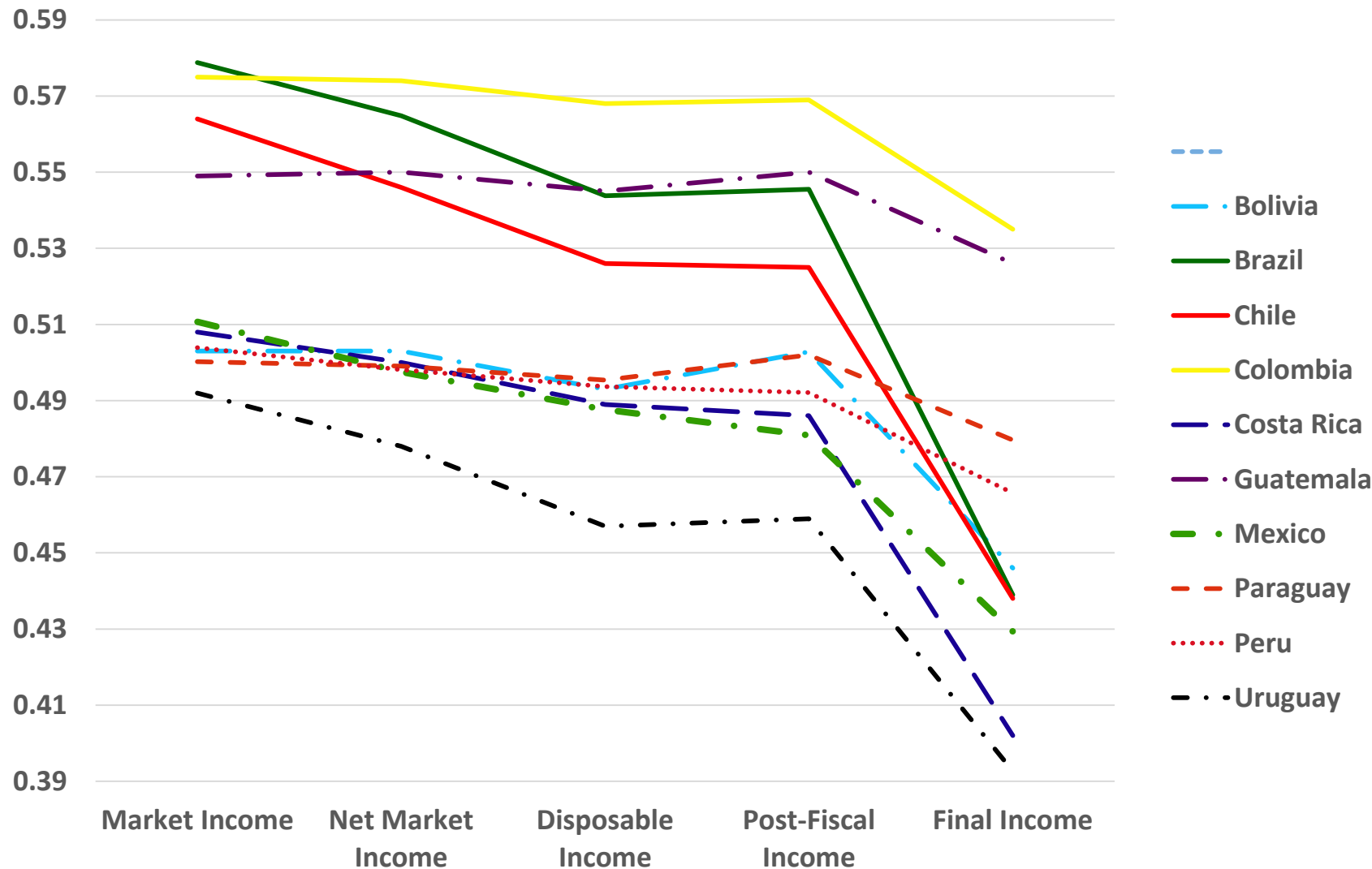
Sources: see references at the end

# Bolivia: a Leftist Gov that Redistributes Little



# Brazil Reduces Inequality Significantly

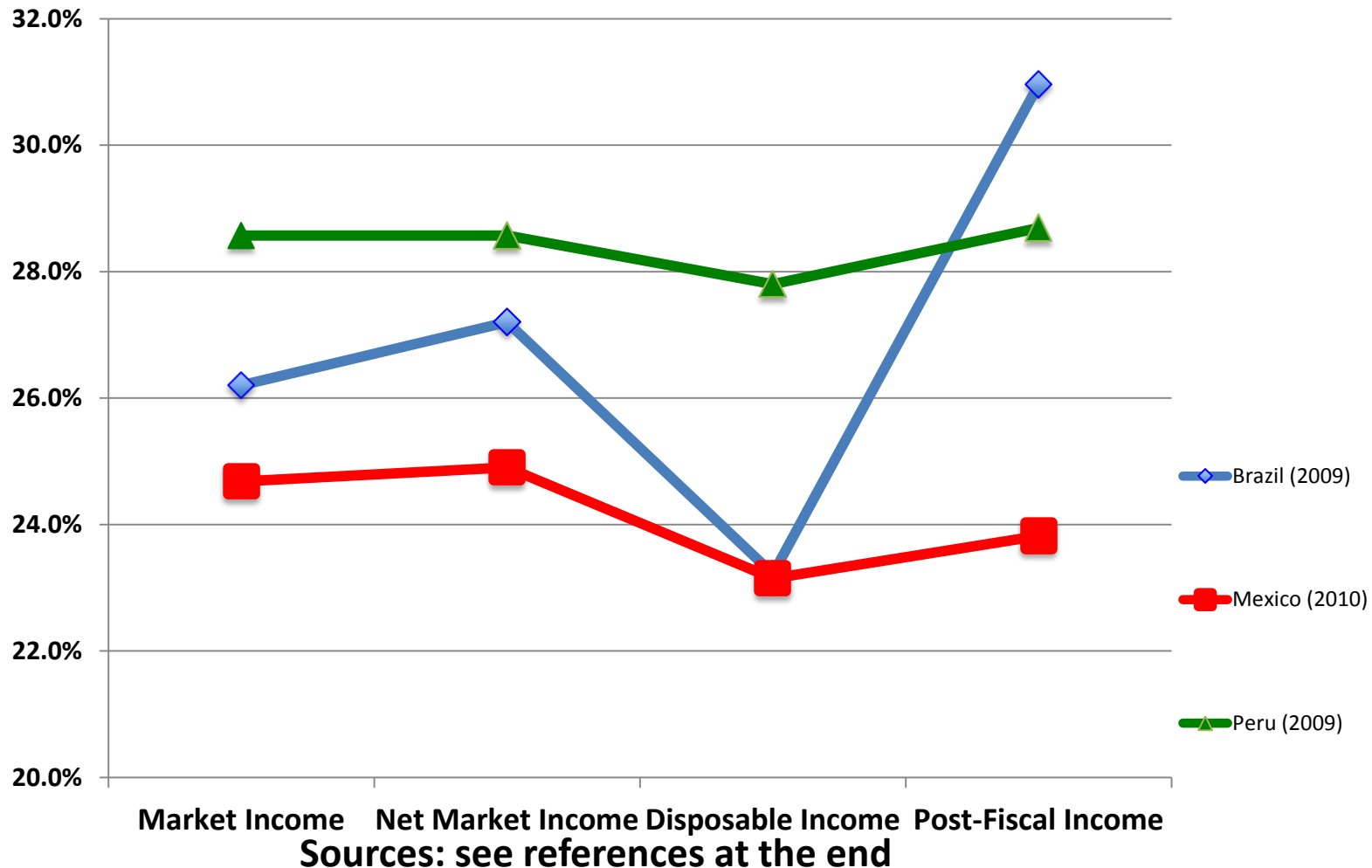
## Gini Coefficient by Income Concept



Sources: see references at the end

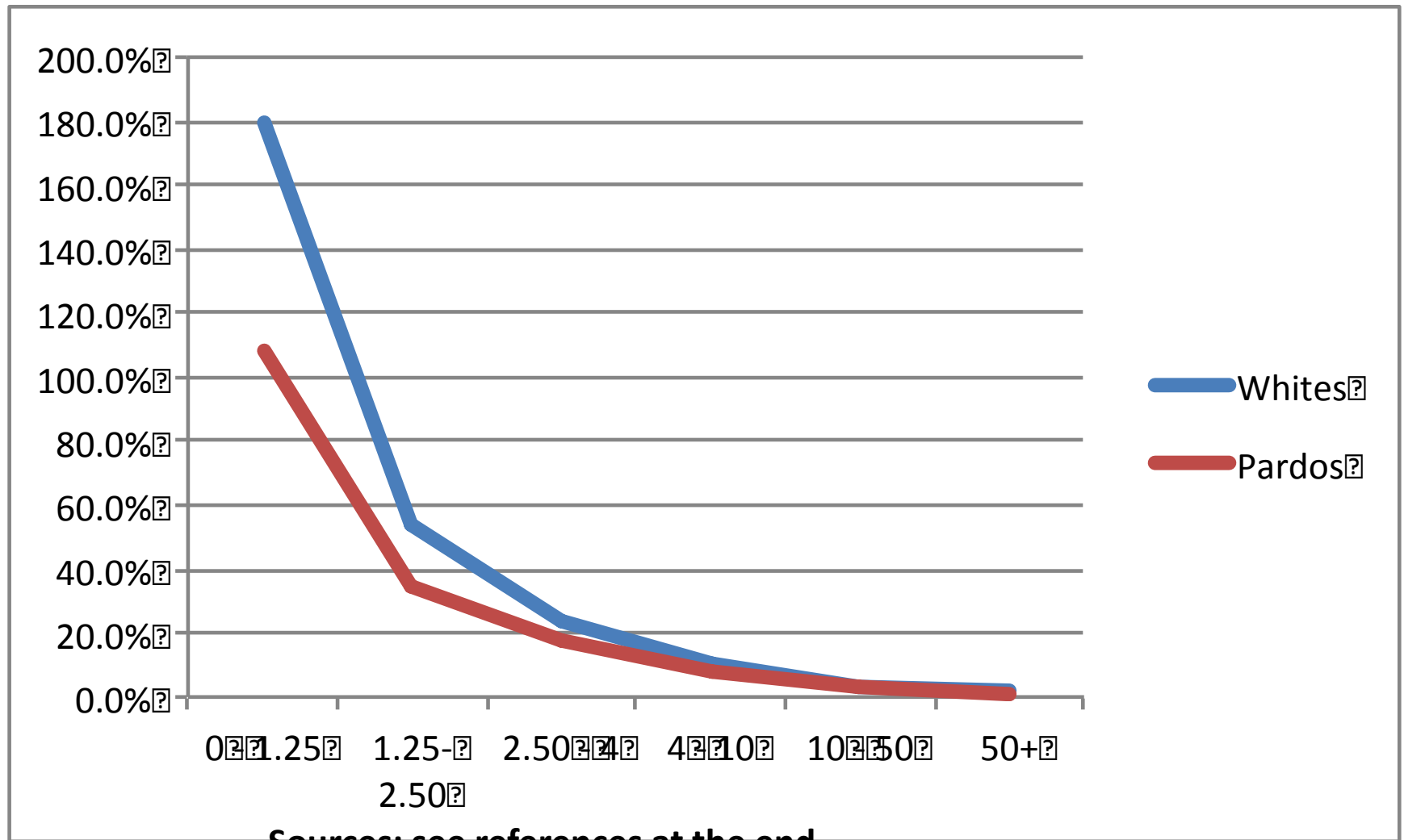


# However, indirect taxes wipe out the poverty-reducing effect of cash transfers



# Poor Pardos in Brazil Receive Less in Cash Transfers than Equally Poor Whites

Incidence of Cash Transfers by Race



# Impoverishment in Brazil is Significant

		Post-tax and transfer income groups				% of Pop.
		< \$2.50	\$2.50 –4.00	\$4.00 –10.00	> \$10.00	
Pre-tax and transfer income groups	< \$2.50	85%	10%	4%	1%	15%
	\$2.50 –4.00	14%	75%	10%	1%	11%
	\$4.00 –10.00	0%	13%	84%	3%	33%
	> \$10.00	0%	0%	16%	84%	40%
% of Pop.		14%	14%	36%	36%	100%

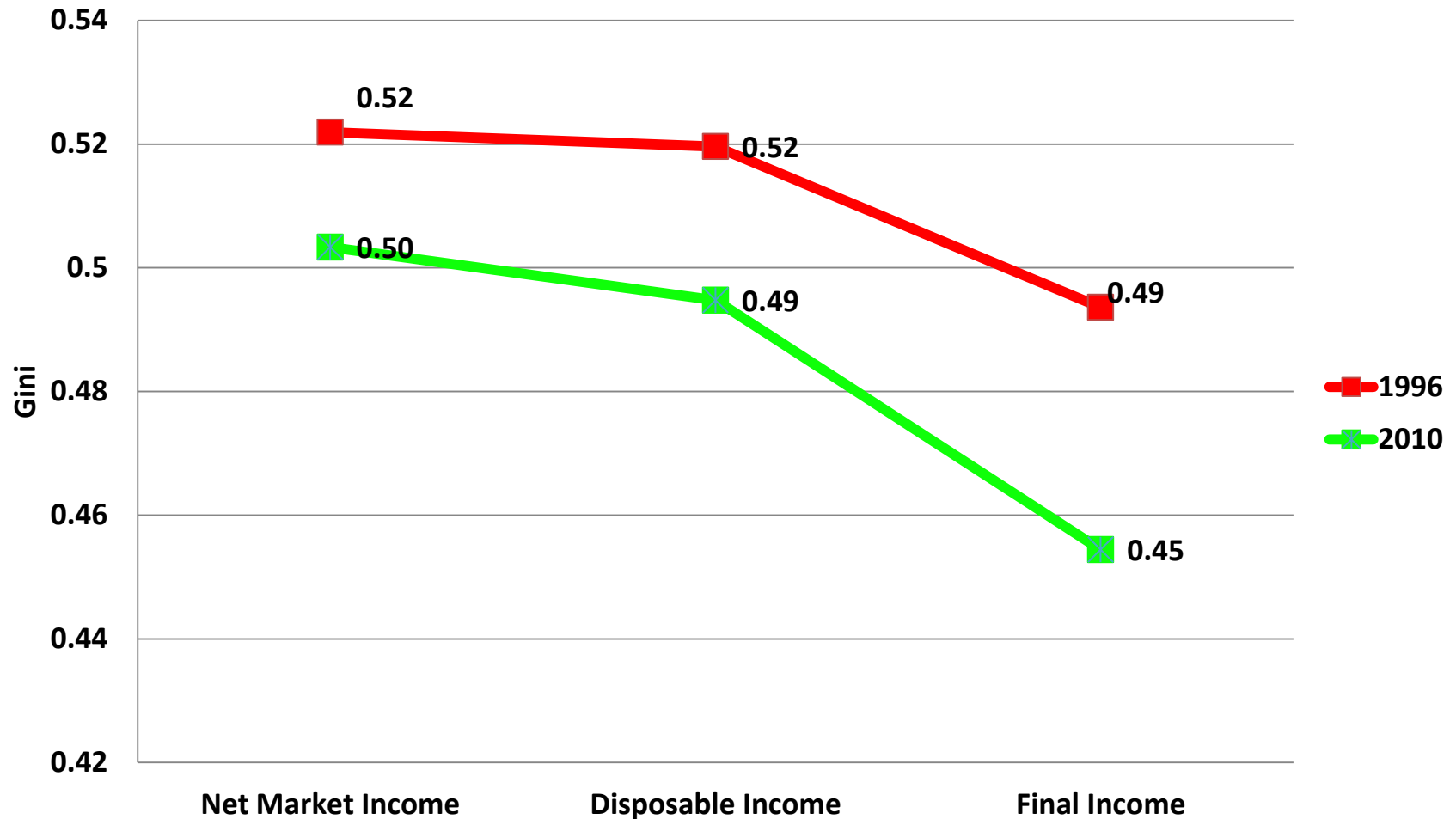
Sources: see references at the end

# Main Results: the Unexpected

- Mexico:
  - Over time, redistribution has increased but Mexico still lags behind its peers such as Arg, Bra and Ury
  - coverage of Oportunidades and other cash transfers leave about 30 percent of extreme poor without safety net
- Peru: health spending is progressive only in relative terms

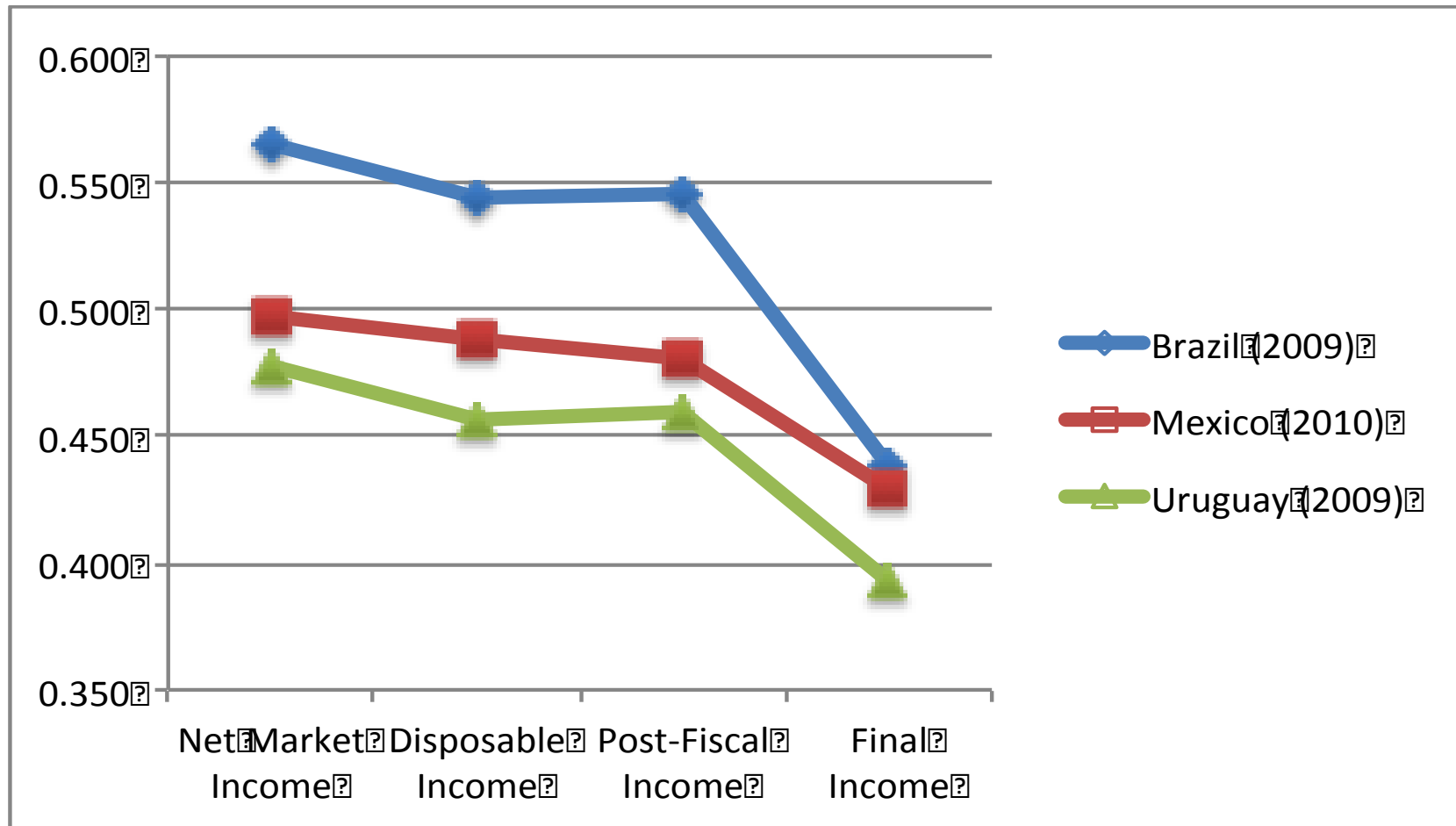
# Mexico: Inequality Reduction 1996 vs. 2010

## (Impact of Social Spending)



Sources: see references at the end

# Mexico still less redistributive than peers



Sources: see references at the end

# **“Poster-child:” Uruguay**

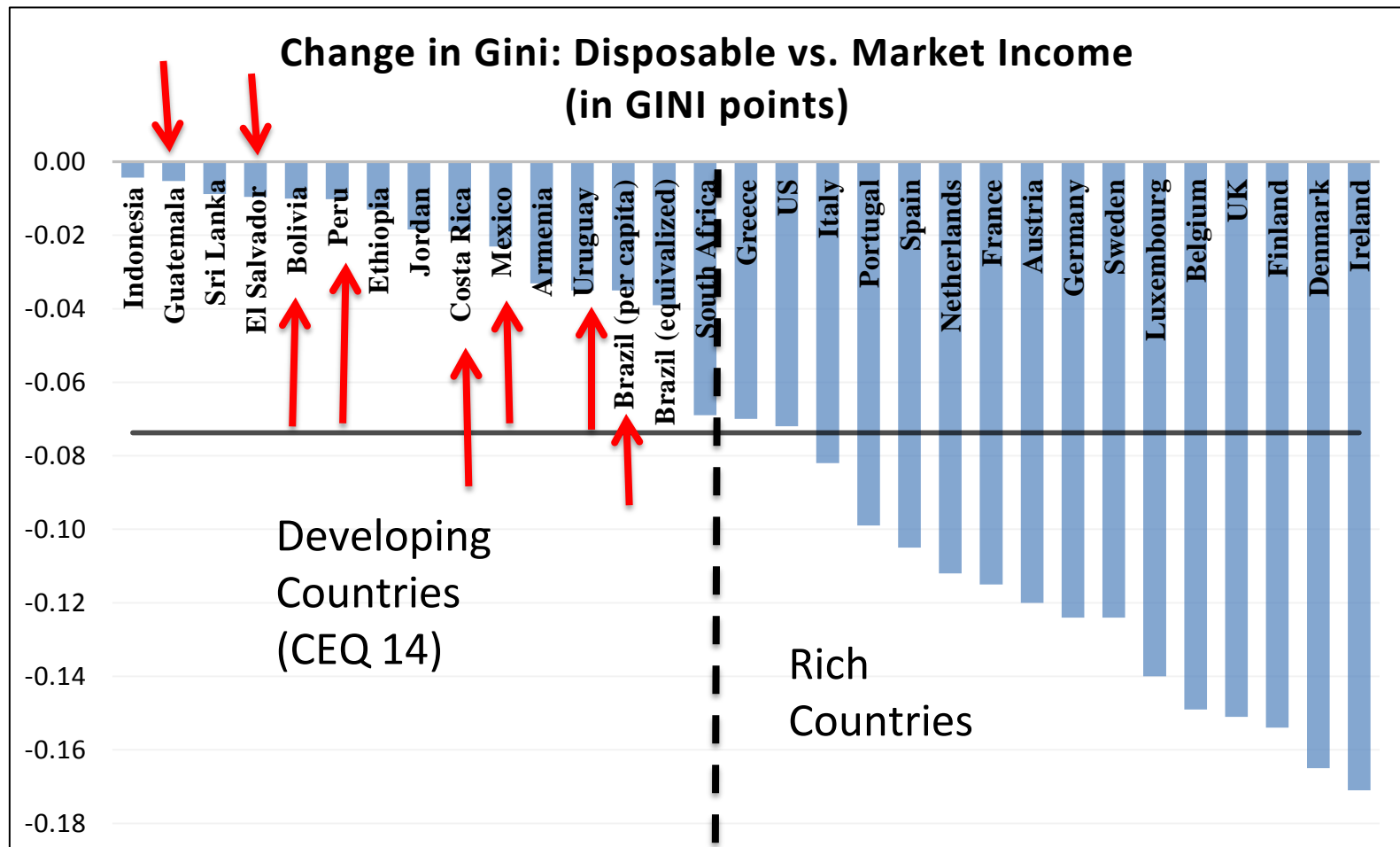
- Primary Spending/GDP is within reasonable levels
- Reduces inequality and poverty among the highest
- Has among the highest effectiveness indicators
- Taxes are neutral
- All social spending categories are progressive in absolute terms
- Coverage of the poor is close to 100 percent
- Only evident problem: access to tertiary is concentrated in the nonpoor

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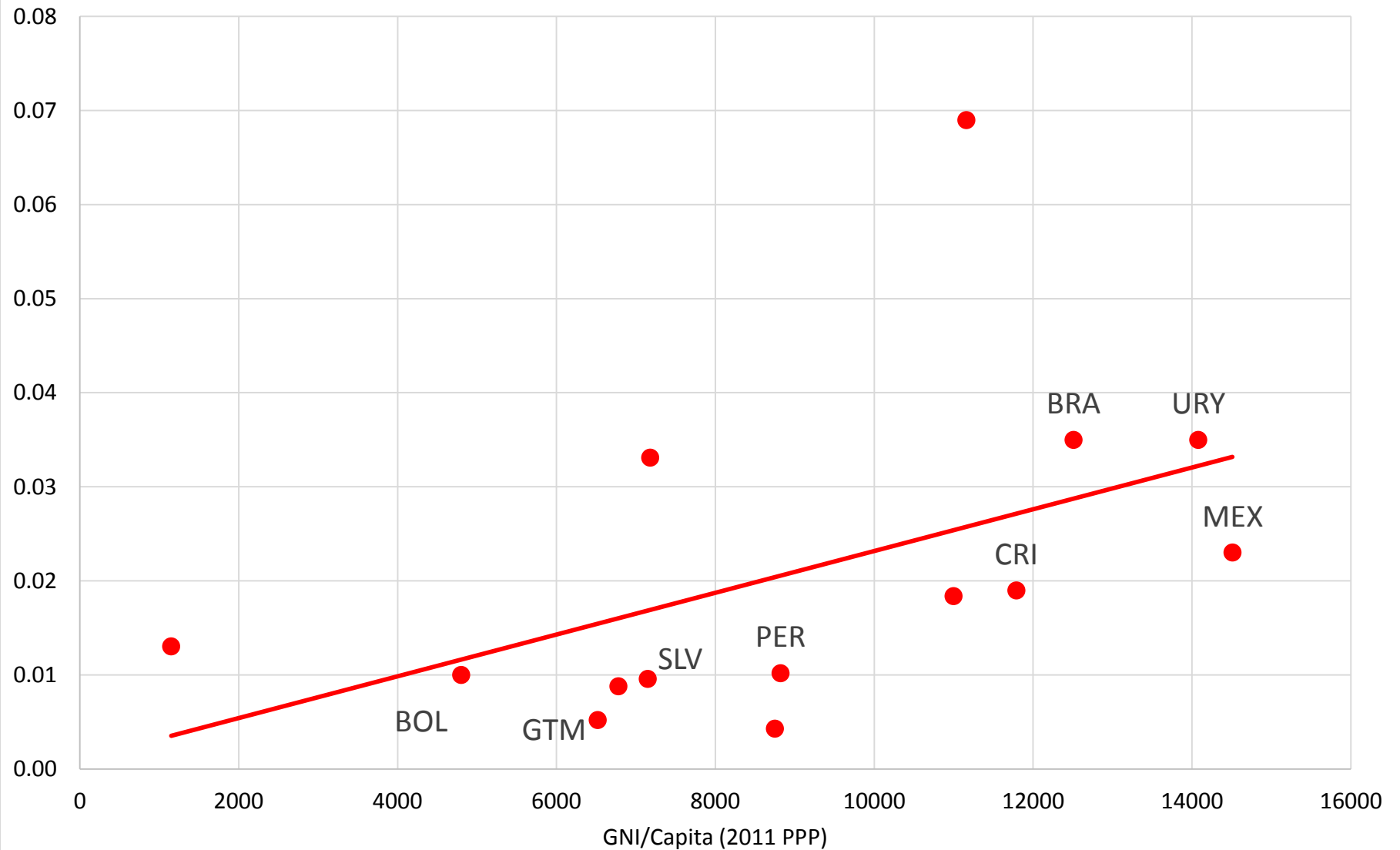
# Inequality Reduction by Direct Taxes and Transfers: Brazil, Europe and US



Source: Higgins et al. (2013) for Brazil and US; Immervoll et al. (2009) for Europe; Latam see references; other countries see list of teams at the beginning of presentation

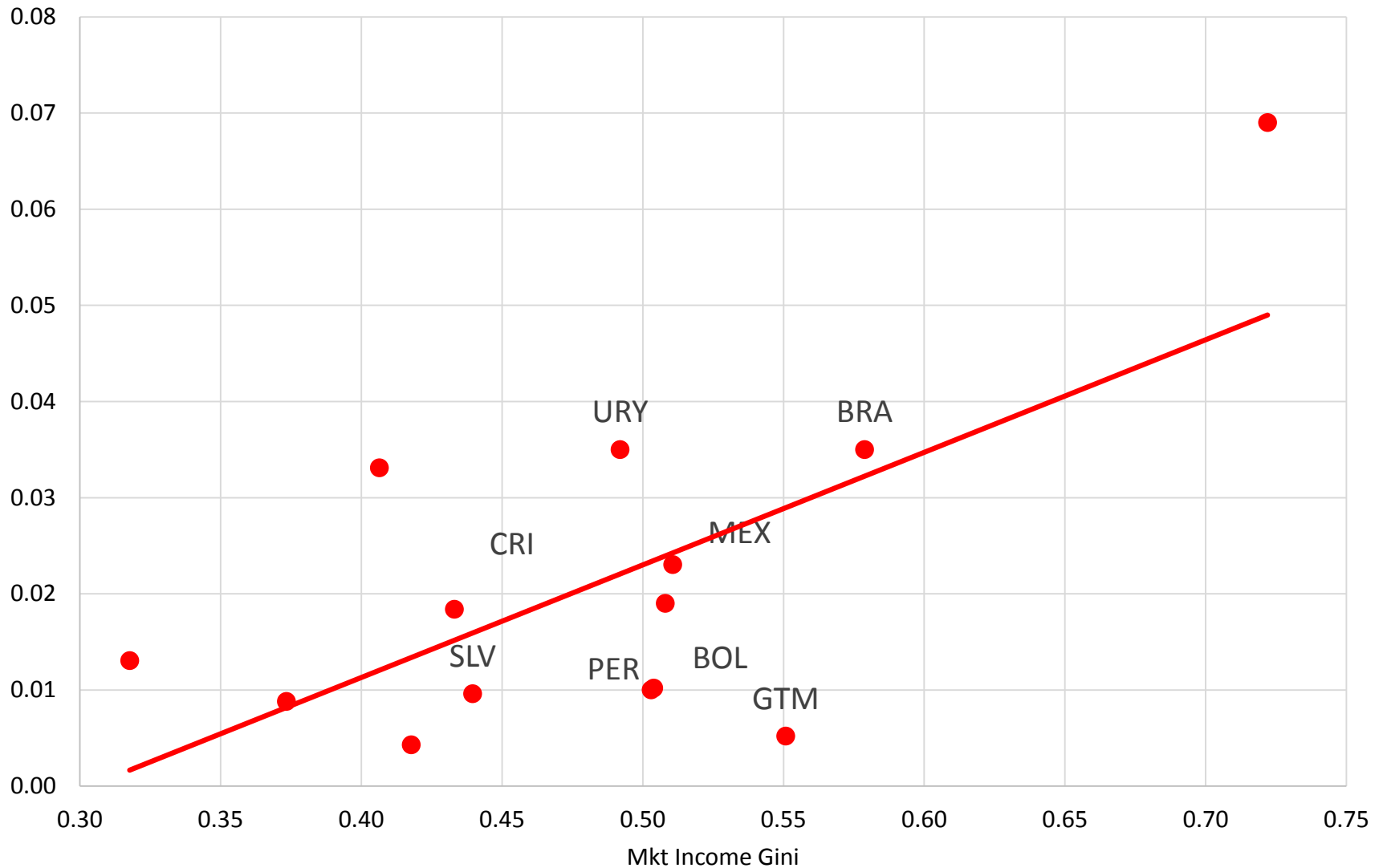
## Change in Gini points: Disposable vs Market

(decline in Gini shown in positive quadrant)



## Change in Gini points: Disposable vs. Market

(decline in Gini points shown in positive quadrant)



# References by country

- *Argentina*: Lustig, Nora and Carola Pessino. Social Spending and Income Redistribution in Argentina in the 2000s: The Rising Role of Noncontributory Pensions. In Lustig, Nora, Carola Pessino, and John Scott, editors, Fiscal Policy, Poverty and Redistribution in Latin America, Special Issue, *Public Finance Review*, May, Volume 42, Issue 3.
- *Bolivia*: Paz Arauco, Veronica, George Gray Molina, Wilson Jiménez Pozo, and Ernesto Yáñez Aguilar. Explaining Low Redistributive Impact in Bolivia. In Lustig, Nora, Carola Pessino, and John Scott, editors, Fiscal Policy, Poverty and Redistribution in Latin America, Special Issue, *Public Finance Review*, May, Volume 42, Issue 3.
- *Brazil*: Higgins, Sean and Claudiney Pereira. The Effects of Brazil's High Taxation and Social Spending on the Distribution of Household Income. In Lustig, Nora, Carola Pessino, and John Scott, editors, Fiscal Policy, Poverty and Redistribution in Latin America, Special Issue, *Public Finance Review*, May, Volume 42, Issue 3.
- *Chile*: Dante Contreras and Jaime Ruiz-Tagle
- *Colombia*: Carlos Hurtado, Nora Lustig and Marcela Melendez
- *Costa Rica*: Pablo Sauma and Juan Diego Trejos

# References by country

- *El Salvador*: Margarita Beneke, Nora Lustig and Jose Andres Oliva
- *Guatemala*: Maynor Cabrera, Nora Lustig and Hilcias Estuardo Moran
- *Mexico*: Scott, John. Redistributive Impact and Efficiency of Mexico's Fiscal System. In Lustig, Nora, Carola Pessino, and John Scott, editors, Fiscal Policy, Poverty and Redistribution in Latin America, Special Issue, *Public Finance Review*, May, Volume 42, Issue 3.
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# References

- Higgins, Sean and Nora Lustig. 2014. “Measuring Fiscal Impoverishment,” Working Paper, Tulane University.
- Higgins, Sean, Nora Lustig, Whitney Ruble and Tim Smeeding. 2013. “Comparing the Incidence of Taxes and Social Spending in Brazil and the United States.” CEQ Working Paper No 16, November
- Lustig, Nora and Sean Higgins. 2012. “Fiscal Mobility and the Poor: A New Approach. Tulane Economics Department Working Paper 1202, New Orleans, Louisiana, April
- Lustig, Nora, Carola Pessino, and John Scott, editors, “Fiscal Policy, Poverty and Redistribution in Latin America, Special Issue,” *Public Finance Review*, May, Volume 42, Issue 3.

## Acknowledgements

*Led by Nora Lustig, the Commitment to Equity (CEQ) framework was designed to analyze the impact of taxation and social spending on inequality and poverty in individual countries and to provide a roadmap for governments, multilateral institutions, and nongovernmental organizations in their efforts to build more equitable societies. Launched in 2008, the CEQ is a project of the Center for Inter-American Policy and the Department of Economics, Tulane University and its founding co-sponsor the Inter-American Dialogue. Since its inception, the CEQ has received financial support from Tulane University's Center for Inter-American Policy and Research, the School of Liberal Arts and the Stone Center for Latin American Studies as well as the Bill & Melinda Gates Foundation, the Canadian International Development Agency (CIDA), the Development Bank of Latin America (CAF), the General Electric Foundation, the Inter-American Development Bank (IADB), the International Fund for Agricultural Development (IFAD), the Norwegian Ministry of Foreign Affairs, OECD, the United Nations Development Programme's Regional Bureau for Latin America and the Caribbean (UNDP/RBLAC), and the World Bank.*

[www.commitmentoequity.org](http://www.commitmentoequity.org);

Thank you!