Taxes, Transfers, Inequality and the Poor in the Developing World

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Washington, DC
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Outline

- What is the Commitment to Equity (CEQ) project?
- Commitment to Equity Assessments: Methodological Highlights
- Commitment to Equity Assessments: Highlights of Results
  - Cross-country analysis
  - Country-specific analysis: Brazil, Ethiopia and Indonesia

Why do we need CEQ?

Three key indicators of a government's commitment to reducing inequalities and poverty

- The share of total income devoted to social spending
- How equalizing and pro-poor this spending is
- Who pays for what the government spends

COMMITMENT TO EQUITY

Specifically, suppose one wants to know…

- What is the impact of taxes and government transfers on inequality and poverty?
- Who are the net tax payers to the fiscal system?
- Are the poor impoverished by taxes net of cash transfers?
- How equitable is the use of government education and health services?

Suppose one wants to know…

- Is a specific fiscal intervention equalizing or unequalizing? What is its contribution?
- Is a specific intervention poverty-reducing or poverty-increasing? What is its contribution?
- How much of targeted benefits are leaked to the nonpoor?
- What is the coverage of benefits among the poor?

Suppose one wants to know…

- How do inequality and poverty change when you eliminate VAT exemptions?
- Who benefits from the elimination of user fees in primary education or the expansion of noncontributory pensions?
- Who loses from the elimination of energy subsidies?

What is CEQ: Description of Project

- The Commitment to Equity project (CEQ) was launched in 2008
- The CEQ project is an initiative of:
  - The Center for Inter-American Policy and Research (CIPR) and the Department of Economics, Tulane University, the Inter-American Dialogue and the Center for Global Development
- CEQ's goals are to:
  - Foster evidence-based policy discussion
  - Assist governments, multilateral institutions, and nongovernmental organizations in their efforts to build more equitable societies
- Main diagnostic instrument: CEQ Assessment

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What is CEQ: Core Team

- Director: Nora Lustig
- Technical Coordinator: Sean Higgins
- Project Coordinator: Samantha Greenspun
- Team: Rodrigo Aranda, Ali Enami, and Yang Wang
- Advisory Board: list on CEQ homepage
- Consultants: Jim Alm, Jean-Yves Duclos, Anthony Shorrocks and Stephen Younger
- Country teams: listed at the end of presentation

What is CEQ: Partnerships and Collaborations

- **World Bank:** 11 countries, background papers, joint papers, policy briefs and LEL (Equity Lab)
- I**DB:** 10 countries in LAC, by ethnicity and race, overview papers for LA
- **ICEFI:** 4 countries in Central America, rural-urban
- **IFAD:** 4 countries, rural-urban
- **UNDP:** Ecuador (top incomes) and Venezuela
- **Economic Research Forum:** Egypt and Iran
- **AfDB:** Tunisia
- **CADEP:** Paraguay
- **CBGA:** India
- **FUSADES:** El Salvador
- **REPOA:** Tanzania
- **University of Ghana:** Ghana
- **OECD:** chapter for flagship publication and project on redistribution and the middle-class
- **IMF:** chapter for edited volume
- **CAF:** background paper
- **ADB**: box for flagship publication
- **CEPAL**: box for flagship publication

What is CEQ: Funding

- Tulane University (2008 -)
  - Center for Inter-American Policy and Research
  - School of Liberal Arts
  - Stone Center for Latin American Studies

- Bill & Melinda Gates Foundation (US $581,162)
  - CEQ Handbook (text, master workbook and *ado* files)
  - CEQ Assessments in Ghana and Tanzania

- Canadian International Development Agency (CIDA), the Norwegian Ministry of Foreign Affairs, and the General Electric Foundation (2008-2011)

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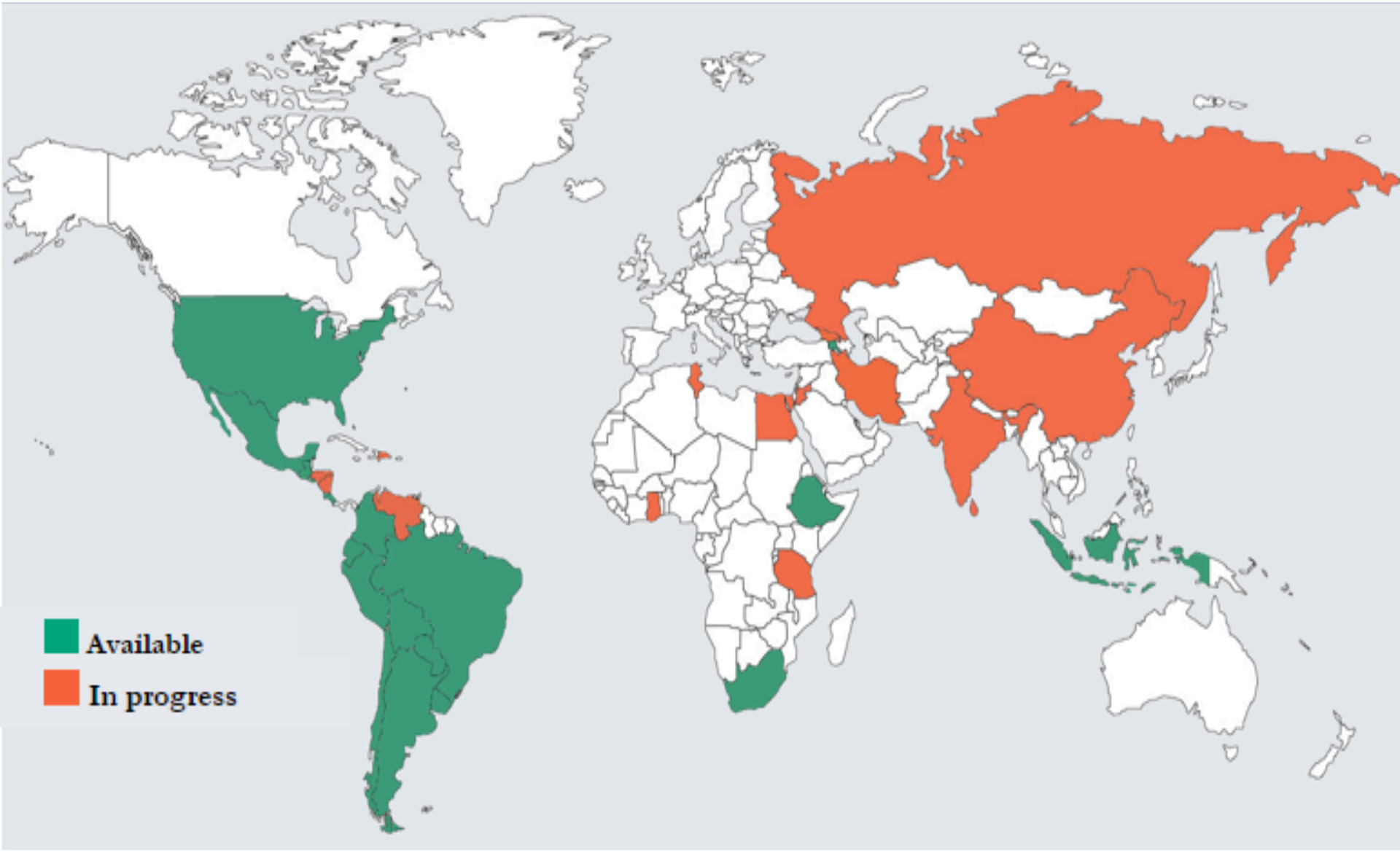
What is CEQ: Country Coverage

- 33 countries at different stages of completion
  - Asia…… 4
  - ECA……..3
  - LAC……17
  - MENA……4
  - SSA…….. 4
  - United States
- 17 CEQ Assessments have been completed

COMMITMENT TO EQUITY

www.commitmentoequity.org



➢ What is CEQ: Methodological Contributions

- Design of CEQ Assessments, including guidelines, Master Workbook and software
- Harmonization of concepts and methods
- Analytics of fiscal redistribution
- New measures: Fiscal Impoverishment and Fiscal Gains to the Poor

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What is CEQ: Advice & Technical Support

- Adapting methodology to country's idiosyncrasies
- Quality-control
- Interpretation of results
- Training
- Write-ups

What is CEQ: Outputs

- CEQ website www.commitmentoequity.org
  - Handbook
  - More than 20 Working Papers
  - Basic indicators (in editable excel)
- 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.
- ***New!***

  Inchauste, Gabriela, Nora Lustig, Mashekwa Maboshe, Catriona Purfield and Ingrid Wollard. 2015. *The Distributional Impact of Fiscal Policy in South Africa.* Policy Research Working Paper 7194, The World Bank, February

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➢ CEQ Assessment

Main diagnostic instrument of CEQ

- Comprehensive framework to analyze the effect of taxation and public spending on inequality and poverty
- Method: Fiscal Incidence analysis and qualitative diagnostic approach
- Application of a common methodology across countries makes cross-country comparisons more accurate
- Methodology is designed to be as comprehensive as possible without sacrificing detail in any particular component of the analysis

CEQ Assessment: Objectives

- What is the impact of taxes and transfers on inequality and poverty?
- How equalizing are taxes and public spending?
- How effective is the fiscal system in reducing inequality and poverty?
- Who bears the burden of taxes and receives the benefits?
- How equitable is the use of education and health services?
- Fiscal policy and rural/urban, gender and ethnic inequalities
- Identify areas of potential policy reform to enhance the capacity of the state to reduce inequality and poverty through taxes and transfers

➢ CEQ Assessment: Method

- Following Pechman's pioneer work, the CEQ relies on state-of-the art tax and benefit incidence analysis
- Uses conventional and newly developed indicators to assess progressivity, pro-poorness and effectiveness of taxes and transfers
- Allows to identify the contribution of individual fiscal interventions to equity and poverty reduction objectives

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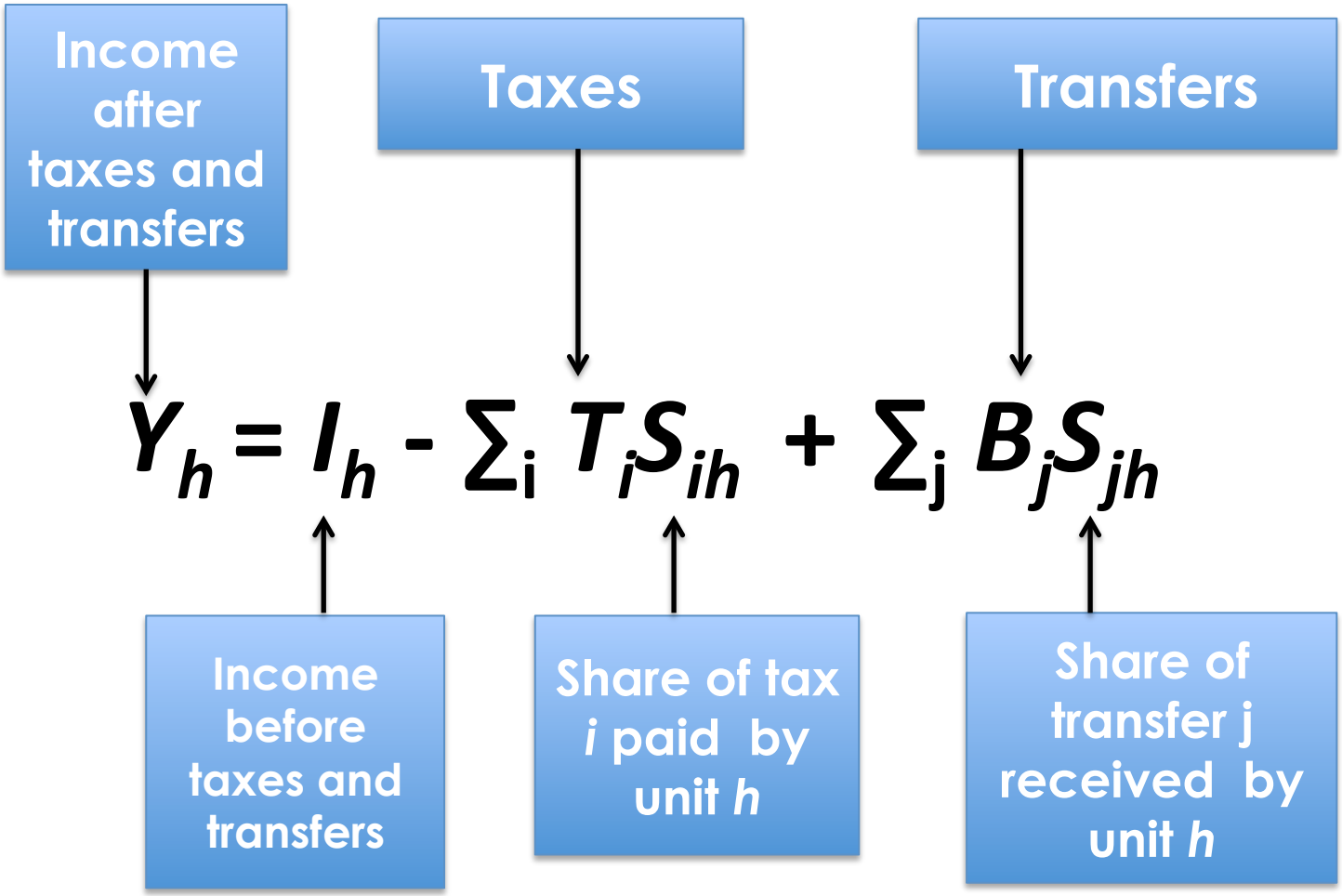
CEQ Assessments and Fiscal Incidence Analysis

- In order to answer the key questions regarding fiscal policy and redistribution, we need the income of individuals before and after fiscal interventions
- Method: fiscal incidence analysis
- Fiscal incidence analysis consists of methods to allocate taxes and public spending to individuals so that one can compare pre-fiscal incomes with incomes after taxes and transfers

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 B_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) => Incidence
- To generate the after or post taxes and transfers income…

Fiscal Incidence Equation



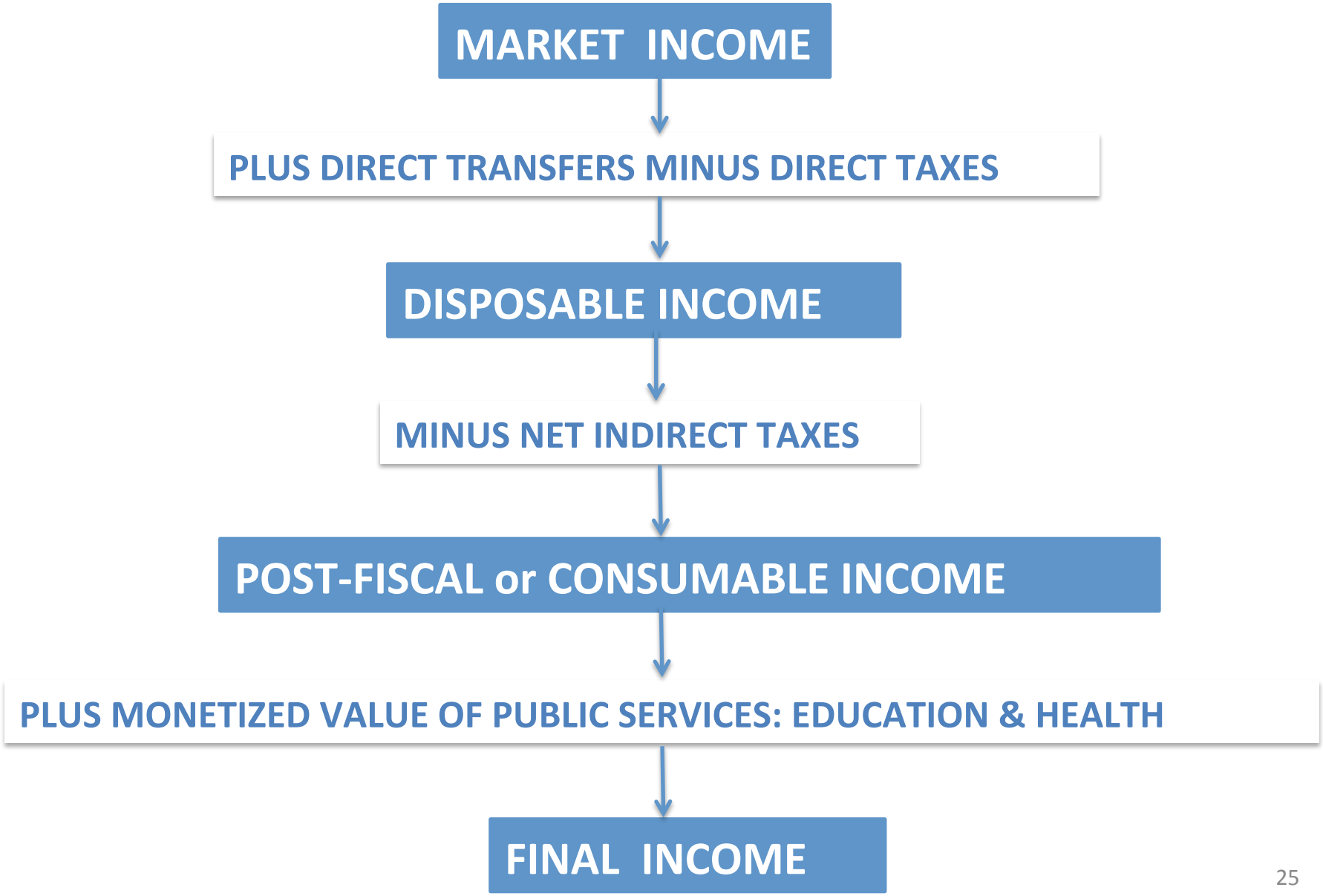
Fiscal Interventions

- Taxes
  - Direct taxes: mainly PIT (miss top incomes except in tax information-based analysis)
  - Contributions to pensions and social insurance systems
  - Indirect taxes on consumption: VAT, excise taxes, tariffs

Fiscal Interventions

- Transfers
  - Direct cash transfers
  - Non-cash direct transfers such as school uniforms and breakfast
  - Indirect subsidies
  - In-kind transfers such as spending on education and health

Construction of Income Concepts



➢ Fiscal Incidence in CEQ Assessments

- Accounting approach
  - no behavioral
  - no general equilibrium effects and
  - no intertemporal effects
  - but it incorporates assumptions to obtain economic incidence (not statutory)
- Point-in-time
- Mainly average incidence; a few cases with marginal incidence
- 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

Fiscal Incidence in CEQ Assessments

- **Comprehensive** standard fiscal incidence analysis of current systems: direct personal and indirect taxes (no corporate taxes); cash and in-kind transfers (public services); indirect subsidies

- **Comparable** harmonized definitions and methodological approaches to facilitate cross-country comparisons

- **Credibility** is enhanced by a careful internal validation (with experts) and external validation(through comparisons with other countries)

➢ Allocation Methods

- Direct Identification in microdata
  - However, results must be checked: how realistic are they?

- If information not directly available in microdata, then:
  - Simulation
  - Imputation
  - Inference
  - Prediction
  - Alternate Survey
  - Secondary Sources

Tax Shifting Assumptions
(a la Pechman)

- Economic burden of direct personal income taxes is borne by the recipient of income
- Burden of payroll and social security taxes is assumed to fall entirely on workers
- Consumption taxes are assumed to be shifted forward to consumers.
- These assumptions are strong because they imply that labor supply is perfectly inelastic and that consumers have perfectly inelastic demand
- In practice, they provide a reasonable approximation (with important exceptions such as when examining effect of VAT reforms), and they are commonly used

➢ Tax Evasion Assumptions: Case Specific

- Income taxes and contributions to SS:
  - Individuals who do not participate in the contributory social security system are assumed not to pay them

- Consumption taxes
  - Place of purchase: informal markets are assumed not to charge them
  - Some country teams assumed small towns in rural areas do not to pay them

➢ Monetizing in-kind transfers

- Incidence of public spending on education and health followed so-called "benefit or expenditure incidence" or the "government cost" approach.
- In essence, we use per beneficiary input costs obtained from administrative data as the measure of average benefits.
- This approach amounts to asking the following question:
  - ➢ How much would the income of a household have to be increased if it had to pay for the free or subsidized public service at the full cost to the government?
  - ➢ Some countries use the "actual consumption" while others "the value of insurance" approach

➢ Scenarios and Robustness Checks

- Benchmark scenario
- Sensitivity to:
  - Changing the original income by which hh are ranked: e.g., market income plus contributory pensions; disposable income
  - Using consumption vs. income
  - Per capita vs. equivalized income or consumption
  - Different assumptions on scaling-down or up
  - Different assumptions on take-up of transfers and tax shifting and evasion
  - Alternative valuations of in-kind services
  - Other sensitivity scenarios: country-specific

Indicators

- Inequality and poverty:
  - Gini, Theil, Kuznetz ratios, ineq of opportunity
  - Headcount, poverty gap, squared poverty gap (international and national poverty lines)
  - Impoverishment and fiscal mobility
  - Inequality of Opportunity
- Effectiveness and Efficiency
  - Change in inequality or poverty divided by corresponding budget share or total spent
  - Poverty-reduction efficiency indicators
  - Tax productivity indicators

Indicators

- Progressivity
  - Incidence by quantile or income group
  - Concentration Shares
  - Concentration Curves
  - Concentration Coefficients, Kakwani, and Reynolds-Smolensky Index
- Vertical Equity and Reranking Effects

Indicators

- Coverage of social programs by quantile and income group
- Average per capita transfer received by the poor
- Share of benefits going to the nonpoor
- Average per capita transfer received by the nonpoor
- Gross and net enrollment indicators by income group

➢ Indicators

- Contribution to Redistribution and Poverty-reduction
  - Classifying interventions by whether they are equalizing or unequalizing
  - Classifying interventions by whether they are equalizing or unequalizing
  - Ranking interventions by their marginal contribution to changes in inequality
  - Ranking interventions by their marginal contribution to changes in poverty

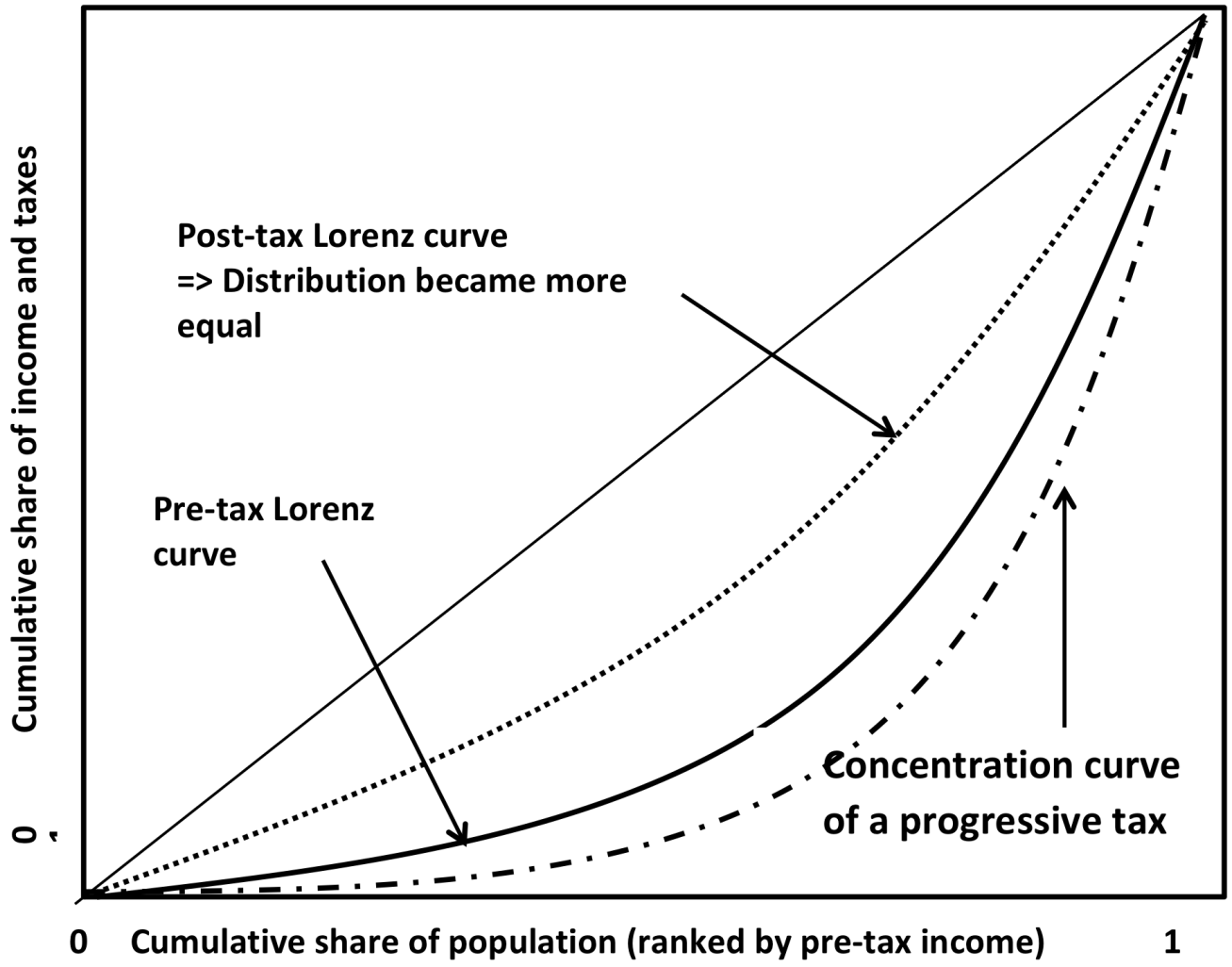
Fundamental Distinction

- Fiscal system with a single intervention
- Fiscal system with multiple interventions

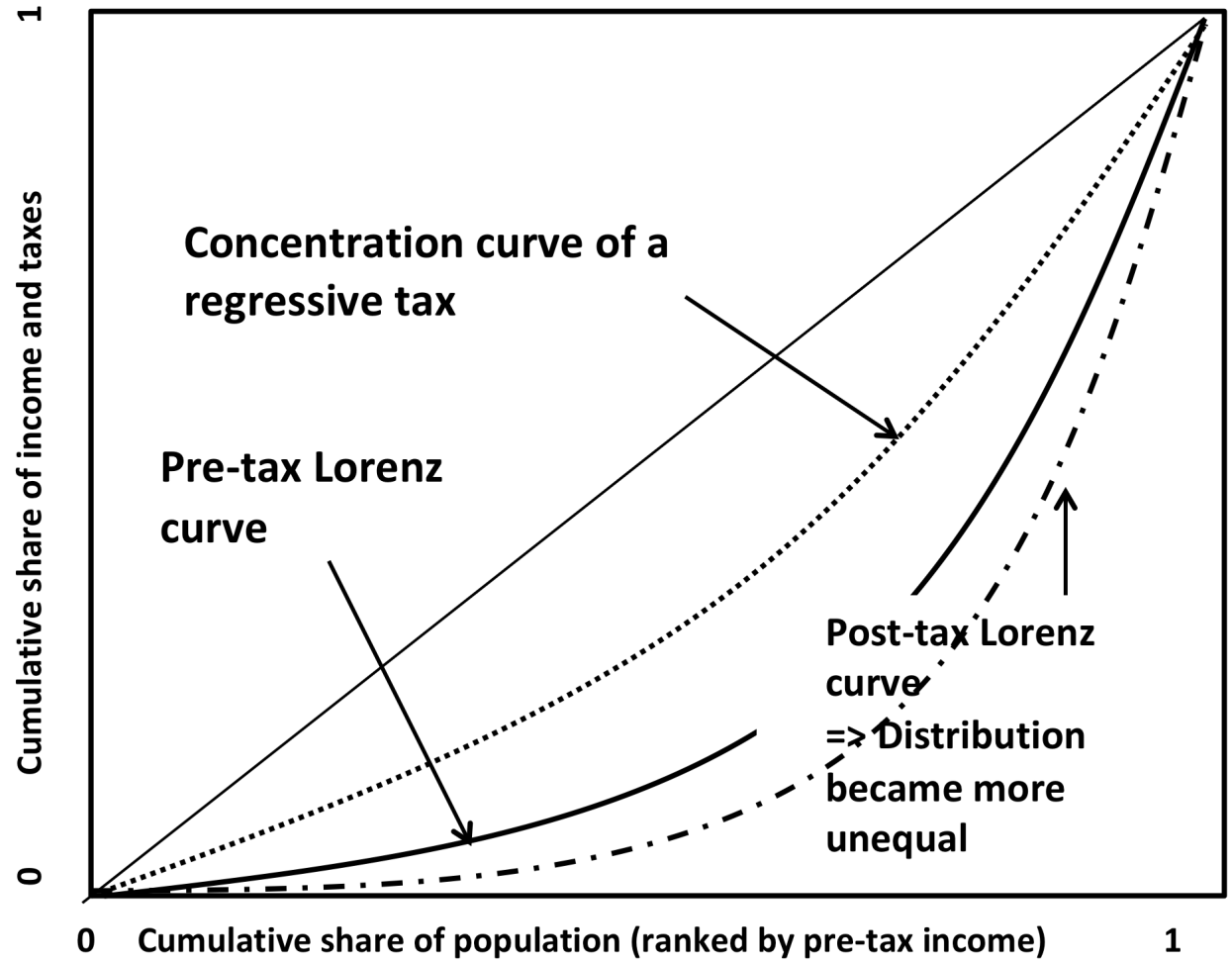
Single Intervention: Tax

- Progressivity measures
  - Concentration curve
  - Concentration coefficient
  - Kakwani Index

Concentration Curve Progressive Tax

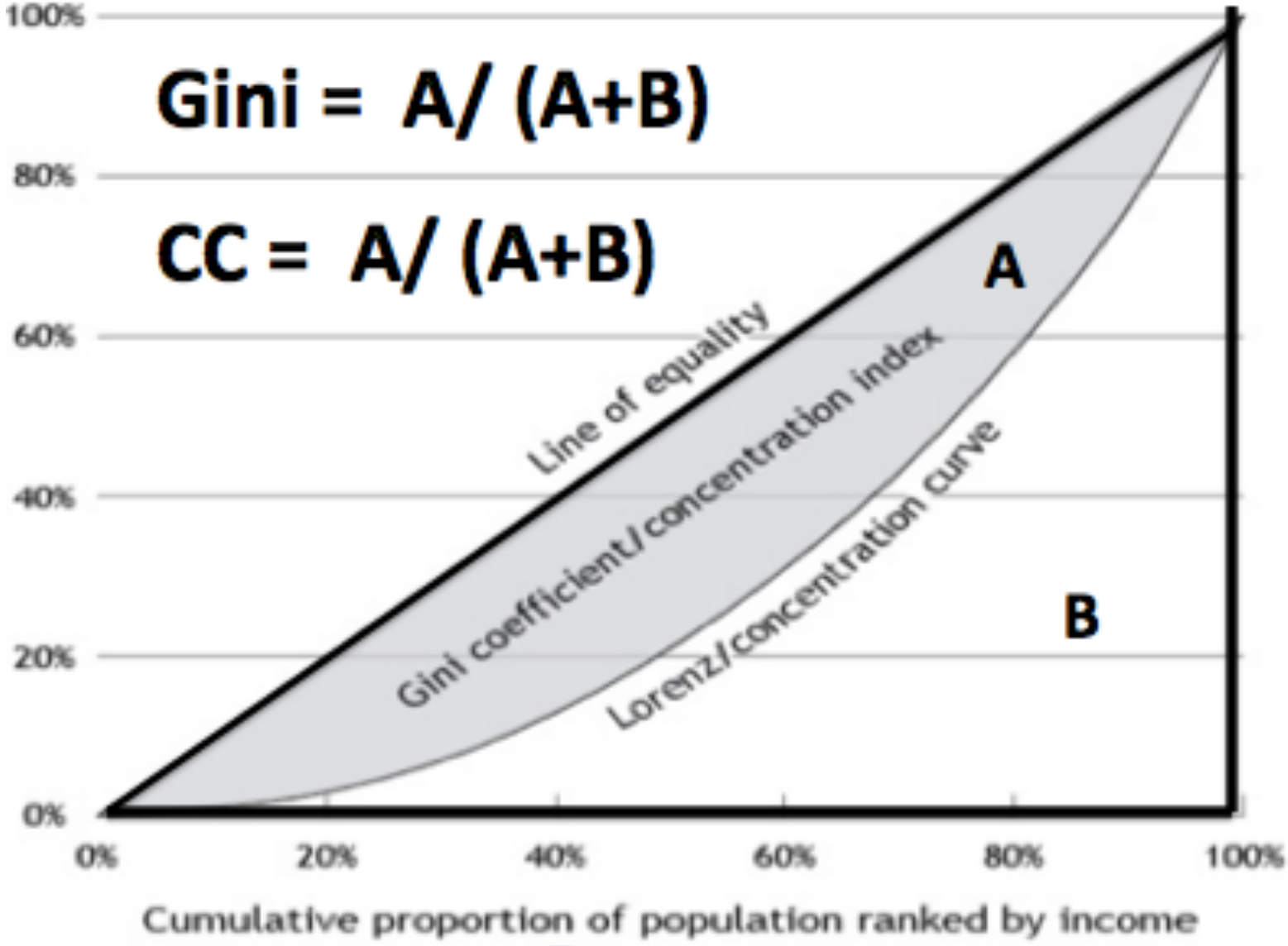


Concentration Curve



Concentration Coefficient: CC

Vertical Axis
Cumulative proportion of income, tax or transfer



Kakwani Index: Tax

The Kakwani index of progressivity of a tax ***t*** is defined as:

$$K_t = CC_t - G_x$$

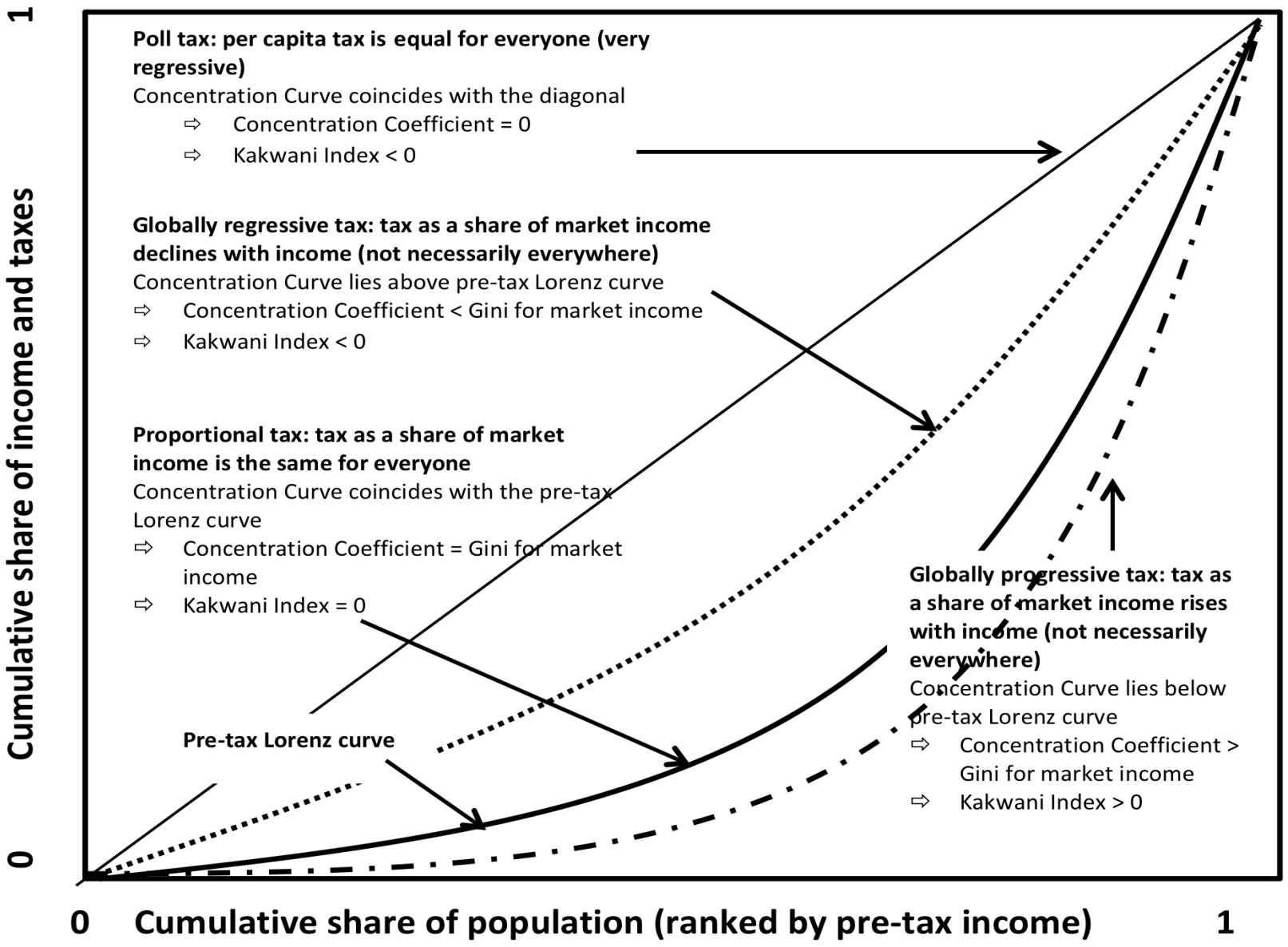
Where:

- G_x is the Gini coefficient of pre-tax income
- CC_t is the concentration coefficient of the tax ***t***

Kakwani Index

- Progressive Tax: $K_t = CC_t - G_x > 0$
- Proportional Tax: $K_t = CC_t - G_x = 0$
- Regressive Tax: $K_t = CC_t - G_x < 0$

Progressivity of Taxes: A Diagrammatic Representation



Conclusion

In a world with just a *single* tax

- A necessary and sufficient condition for a tax to be equalizing is to have a positive Kakwani index

- A necessary and sufficient condition for a tax to be unequalizing is to have a negative Kakwani index

Single Intervention: Transfer

- Progressivity measures
  - Concentration curve
  - Concentration coefficient
  - Kakwani Index

Kakwani Index: Transfer

The Kakwani index of progressivity of a transfer **B** is defined as:

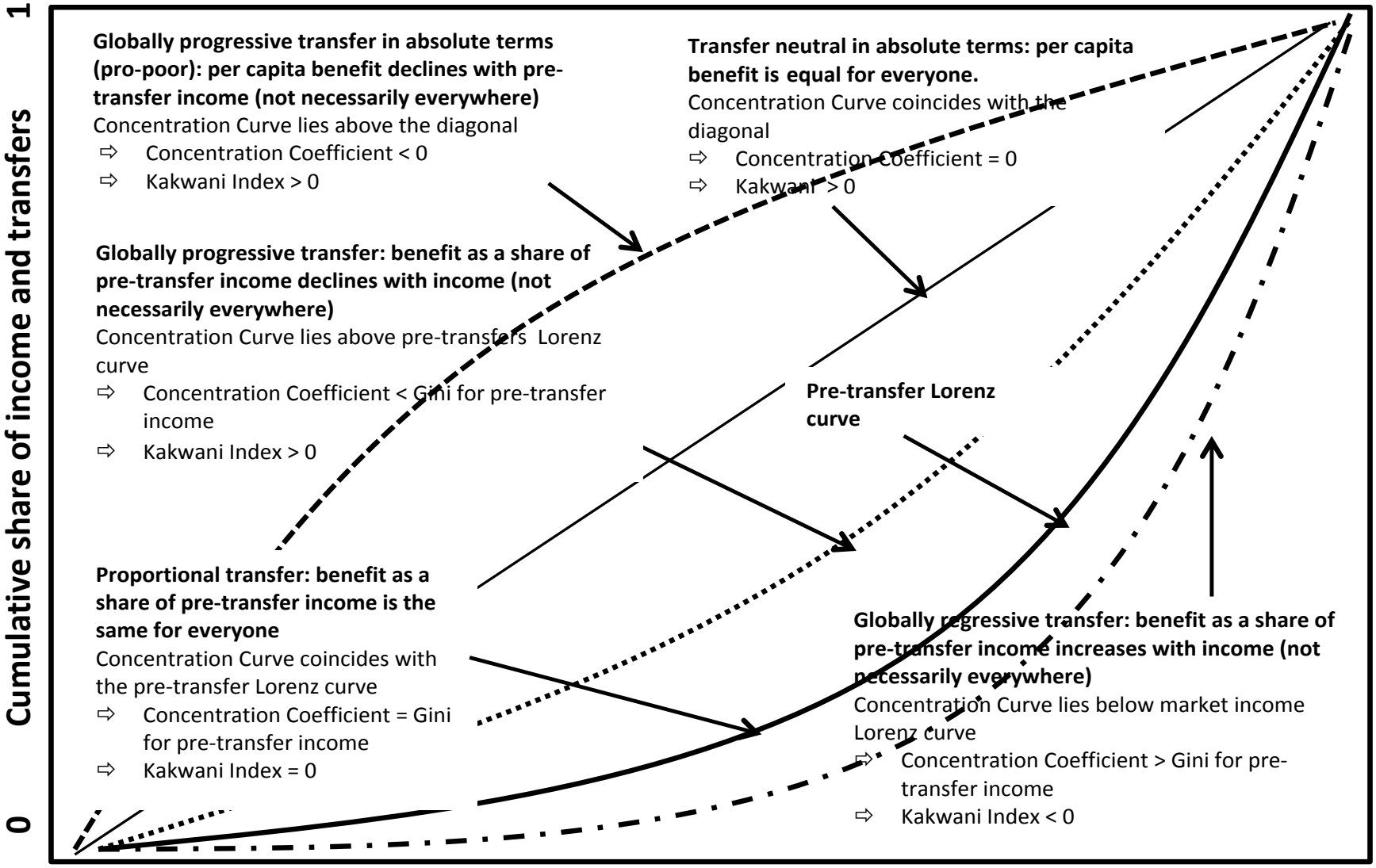
$$K_B = G_x - CC_B$$

Where:

- G_x is the Gini coefficient of pre-tax income
- CC_B is the concentration coefficient of the transfer **B**

➢ Note that the Gini coefficient and the concentration coefficient are in reversed order from the Kakwani index for a tax

Progressivity of Transfers: A Diagrammatic Representation



CEQ Logo: Can you guess what it symbolizes?

Progressivity: Everywhere vs. Global

- A tax can be progressive and equalizing even if it is not progressive *everywhere* as long as it is *globally* progressive

- The toy example below illustrates this point

Toy Example: An Everywhere vs. Globally Progressive Tax

	Everywhere Progressive Tax						
Population	**Pre-tax Income**	**Lorenz Curve Pre-tax**	**Tax Rate Everywhere Progressive Tax**	**Tax paid**	**Post-tax Income**	**Lorenz Curve Post-tax**	**Difference between post- and pre-tax Lorenz curves**
1	$10.00	10%	0%	$0.00	$10.00	13%	2.50%
2	$20.00	30%	10%	$2.00	$18.00	35%	5.00%
3	$30.00	60%	20%	$6.00	$24.00	65%	5.00%
4	$40.00	100%	30%	$12.00	$28.00	100%	0.00%
	$100.00		20%	$20.00	$80.00		

	Globally Progressive Tax						
Population	**Pre-tax Income**	**Lorenz Curve Pre-tax**	**Tax Rate Progressive Not Everywhere**	**Tax paid**	**Post-tax Income**	**Lorenz Curve Post-tax**	**Difference between post- and pre-tax Lorenz curves**
1	$10.00	10%	0%	$0.00	$10.00	13%	2.50%
2	$20.00	30%	10%	$2.00	$18.00	35%	5.00%
3	$30.00	60%	0%	$0.00	$30.00	73%	12.50%
4	$40.00	100%	45%	$18.00	$22.00	100%	0.00%
	$100.00		20%	$20.00	$80.00		

Impact on Inequality Depends On…

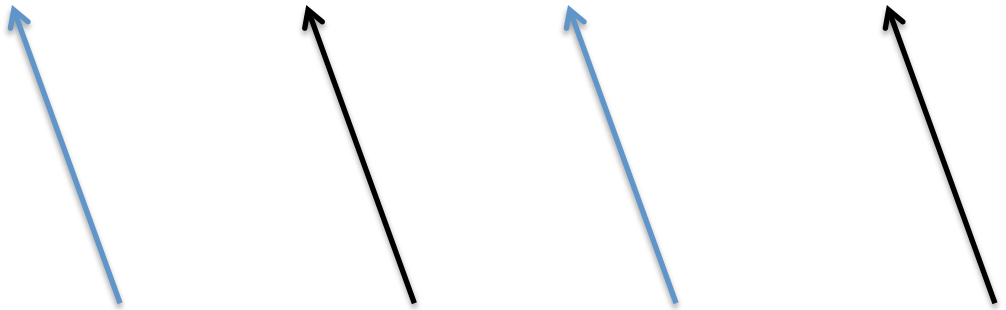
- Progressivity of the tax or the transfer
- Level of the tax or the transfer

➢ A large regressive tax can be more equalizing than a small progressive one as shown in next slide

Redistributive Effect and the Progressivity and Level of Taxes

	Gross Income		Tax A=50.5%		Net Income under A		Tax B=1%		Net Income under B	
	Income	Distribution	Tax	Distribution	Income	Distribution	Tax	Distribution	Income	Distribution
1	21	21%	1	2%	20	40%	0	0%	21	21%
2	80	79%	50	98%	30	60%	1	100%	79	79%
Total	101	100%	51	100%	50	100%	1	100%	100	100%

Source: Duclos and Tabi, 1996, Table 1.



Fundamental Distinction

- Fiscal system with a single intervention
- Fiscal system with multiple interventions

COMMITMENT TO EQUITY

Fiscal Policy and Inequality
Three Key Questions

- Does the net fiscal system decrease inequality?
- Is a particular tax or transfer equalizing or unequalizing?
- What is the contribution of a particular tax or transfers (or any combination of them) to the change in inequality?

Does the net fiscal system decrease inequality?

Let's define the Redistributive Effect of the net fiscal system as

$$RE_N = G_x - G_N$$

Where G_x *and* G_N are the Gini coefficient before and after the tax and the transfer, respectively

Does the net fiscal system decrease inequality?

From Lambert (2001), we know that $\boldsymbol{RE_N}$ is equal to the weighted sum of the redistributive effect of taxes and transfers

$$\boldsymbol{RE_N = \frac{(1-g)RE_t + (1+b)RE_B}{1-g+b}}$$

Where

- $\boldsymbol{RE_t}$ and $\boldsymbol{RE_B}$ are the Redistributive Effect of the tax and the transfer, respectively
- **g** and **b** are the tax and transfer level: i.e., total taxes and total transfers divided by total pre-tax and pre-transfer income, respectively

Does the net fiscal system decrease inequality?

For the net fiscal system to be equalizing:

$$RE_N = \frac{(1-g)RE_t + (1+b)RE_B}{1-g+b} > 0$$

Condition 1:

$$\rightarrow RE_t > -\frac{(1+b)}{(1-g)} RE_B$$

Does the net fiscal system decrease inequality?

		Transfer	
		Regressive	Progressive
Tax	Regressive	Never Equalizing	Equalizing only if Condition 1 holds
	Progressive	Equalizing only if Condition 1 holds	Always Equalizing

Condition 1:

$$\rightarrow RE_t > -\frac{(1+b)}{(1-g)} RE_B$$

Is a particular tax or transfer equalizing?

- If there is a single intervention in the system, any of the progressivity measures discussed earlier will give an unambiguous answer

- If there is a tax **and** a transfer, then this is no longer the case

  - A regressive tax can be equalizing and the reduction in inequality be larger with the tax than without it

Lambert's Conundrum

	1	2	3	4	Total
Original income x	10	20	30	40	100
Tax Liability t(x)	6	9	12	15	42
Benefit level b(x)	21	14	7	0	42
Post-benefit income	31	34	37	40	142
Final income	25	25	25	25	100

Source: Lambert, 2001, Table 11.1, P. 278

Lambert's Conundrum

- The Redistributive Effect of the tax in this example is equal to -0.05, highlighting their regressivity

- The Redistributive Effect of the transfer is equal to 0.19

➢ Yet, the Redistributive Effect of the net fiscal system is 0.25, higher than the effect without the taxes!

Lambert's Conundrum Path Dependency

- If a tax is regressive vis-à-vis the original income but progressive with respect to the less unequally distributed post-transfer income

➢ Regressive taxes *can* exert an equalizing effect over an above the effect of progressive transfers

When could a regressive tax exert an equalizing force?

For the reduction in inequality to be higher with the tax than without it, the following condition must hold:

$$RE_N = \frac{(1-g)RE_t + (1+b)RE_B}{1-g+b} > RE_B$$

Condition 2

$$\rightarrow RE_t > -\frac{(g)}{(1-g)}RE_B$$

Is a tax equalizing?
Answer for a system with a tax and a transfer

Adding a tax that is:		Transfer: Regressive	Transfer: Progressive
Tax: Regressive		Never more equalizing	More equalizing only if Condition 2 holds
Tax: Progressive		More equalizing only if Condition 2 holds	Always more equalizing

Condition 2

$$\rightarrow RE_t > -\frac{(g)}{(1-g)} RE_B$$

Equalizing Regressive Taxes Exist in Real Life

- The US and the UK had regressive equalizing taxes in the past (O'Higgins & Ruggles, 1981 and Ruggles & O'Higgins, 1981)

- Chile's 1996 fiscal system had equalizing regressive taxes (Engel et al., 1999)
  - Redistributive Effect of Net Fiscal System (taxes and transfers together = 0.0583 (decline in Gini points)
  - Redistributive Effect of System with Taxes only = - 0.0076
  - Redistributive Effect of System with Transfers but without Taxes = 0.0574

➢ Note that 0.0583 > 0.0574

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Developing Countries: CEQ 17

1. Armenia
2. Bolivia
3. Brazil
4. Chile
5. Colombia
6. Costa Rica
7. Ecuador
8. El Salvador
9. Ethiopia
10. Guatemala
11. Indonesia
12. Jordan (preliminary)
13. Mexico
14. Peru
15. South Africa
16. Sri Lanka (preliminary)
17. Uruguay

Source: Lustig (2015a)

Household Surveys

Armenia: Integrated Living Conditions Survey, 2011 (I)
Bolivia: Encuesta de Hogares, 2009 (I)
Brazil: Pesquisa de Orçamentos Familiares, 2009 (I)
Chile: Encuesta de Caracterización Social (CASEN), 2009 (I)
Colombia: Encuesta de Calidad de Vida, 2010 (I)
Costa Rica: Encuesta Nacional de Hogares, 2010 (I)
Ecuador: Encuesta Nacional de Ingresos y Gastos de los Hogares Urbano y Rural, 2011-2012 (I)
El Salvador: Encuesta De Hogares De Propositos Multiples, 2011 (I)
Ethiopia: Ethiopia Household Consumption Expediture Survey and Ethiopia Welfare Monitoring survey, 2011 (C)
Guatemala: Encuesta Nacional de Ingresos y Gastos Familiares, 2010 (I)
Indonesia: Survei Sosial-Ekonomi Nasional, 2012 (C)
Jordan: Household Expenditure and Income Survey, 2010 (I)
Mexico: Encuesta Nacional de Ingreso y Gasto de los Hogares, 2010 (I)
Peru: Encuesta Nacional de Hogares, 2009 (I)
South Africa: Income and Expenditure Survey and National Income Dynamics Study, 2010-2011 (I)
Sri Lanka: Household Income and Expenditure Survey, 2009-2010, (I)
Uruguay: Encuesta Continua de Hogares, 2009 (I)

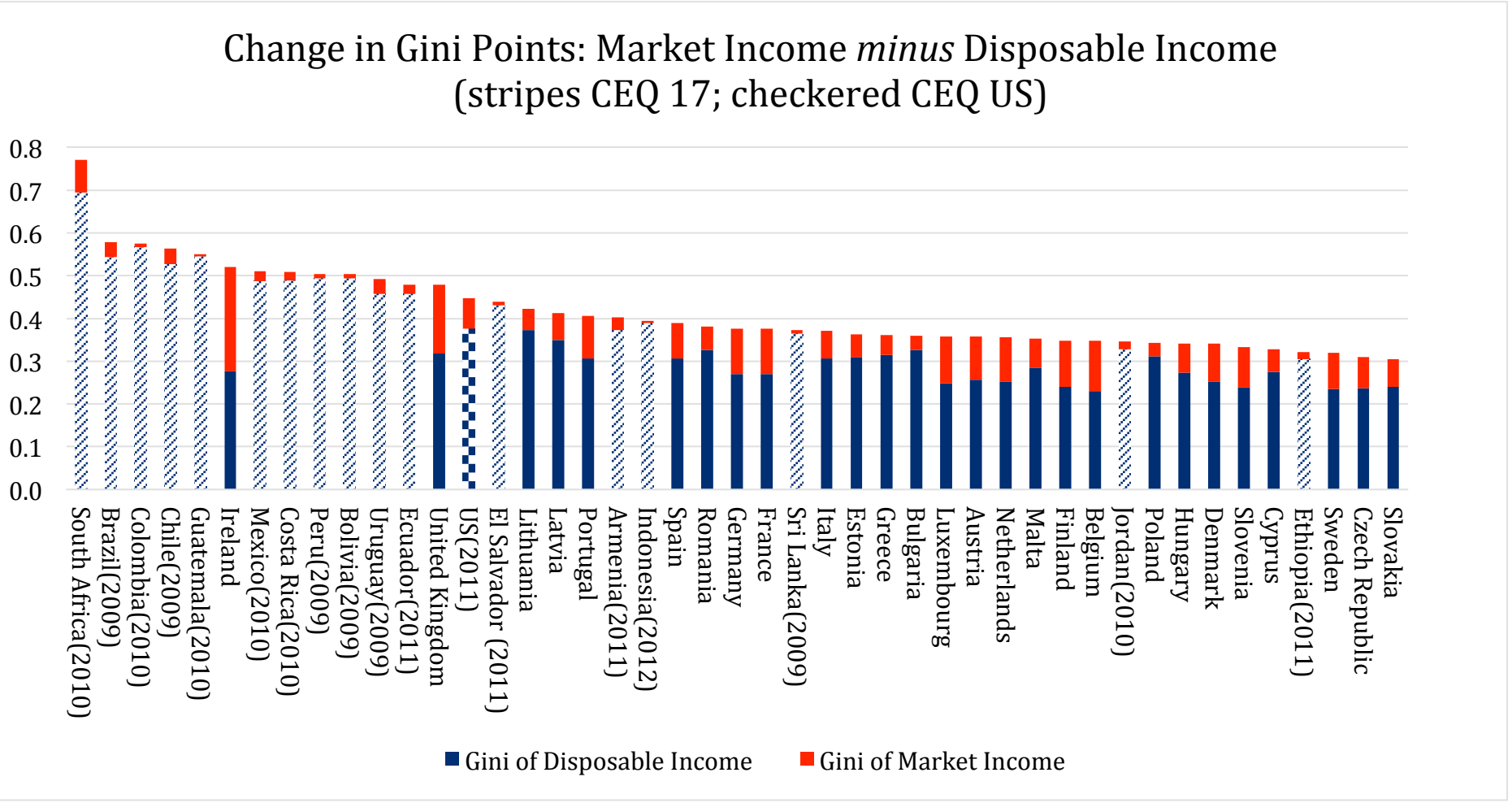
Note: The letters "I" and "C" indicate that the study used income or consumption data, respectively.

Robin Hood or Robin Hood Paradox
(Meltzer-Richard vs. Peter Lindert)

- Do more unequal countries spend more on social programs?

- Do more unequal countries redistribute more?
  - preliminary results

Redistributive Effect in Rich and Developing Countries

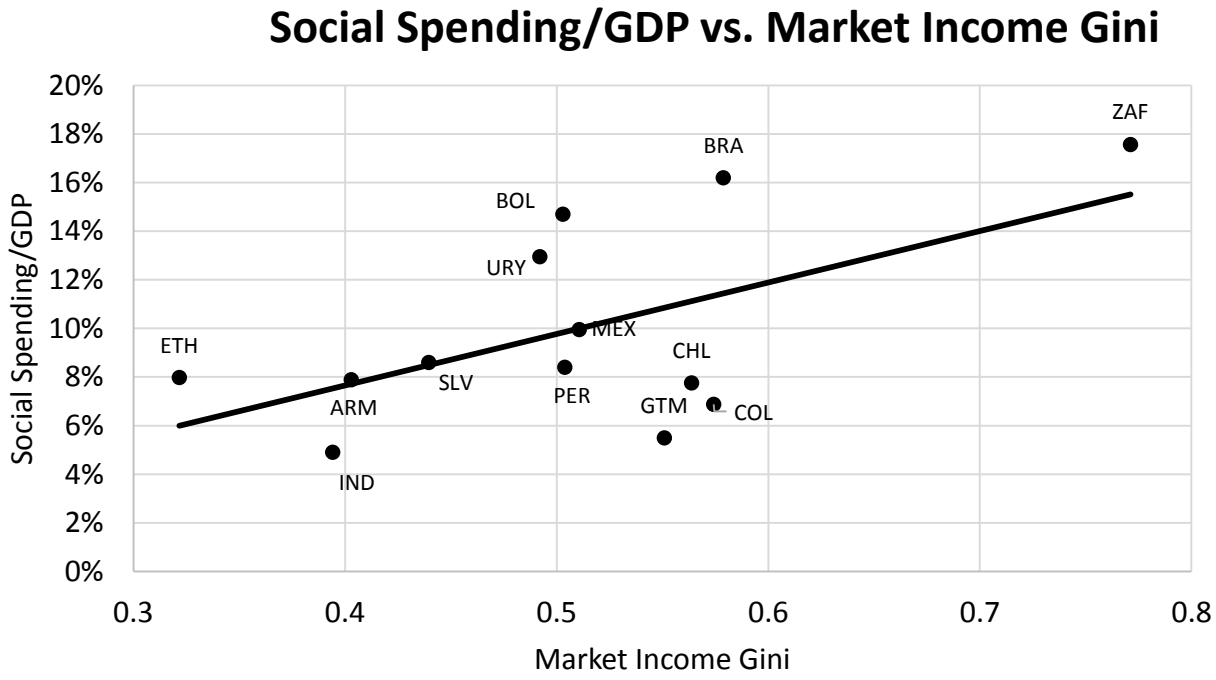


Sources:
CEQ 17: Lustig (2015a)
US: Higgins et al. Forthcoming in Review of Income and Wealth
Rest: EUROMOD 2013 Gini series: https://www.iser.essex.ac.uk/euromod/statistics

Cross-country Analysis: CEQ 17

Do more unequal *developing* countries spend more on social programs?

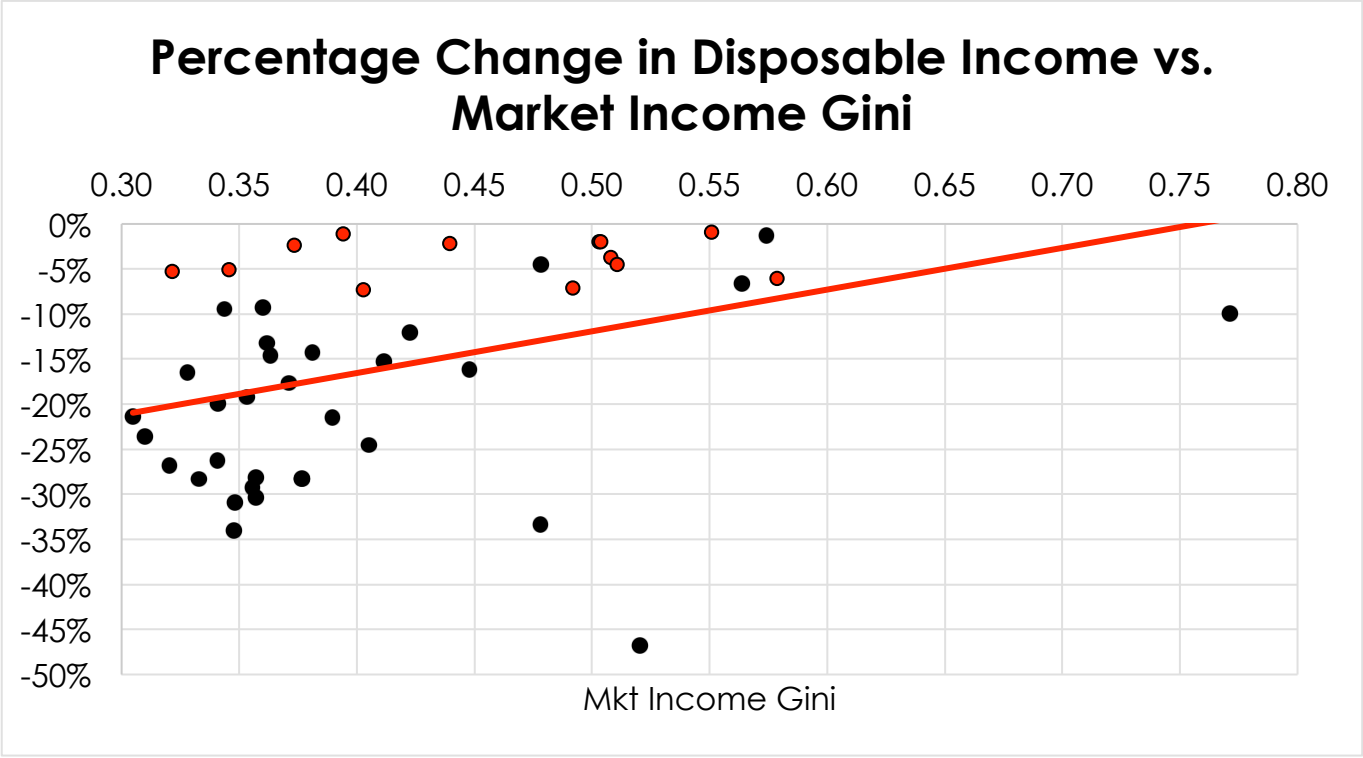
- **Yes**



Source: Lustig (2015a)

Do more unequal countries redistribute more?

- No, if rich and developing countries together

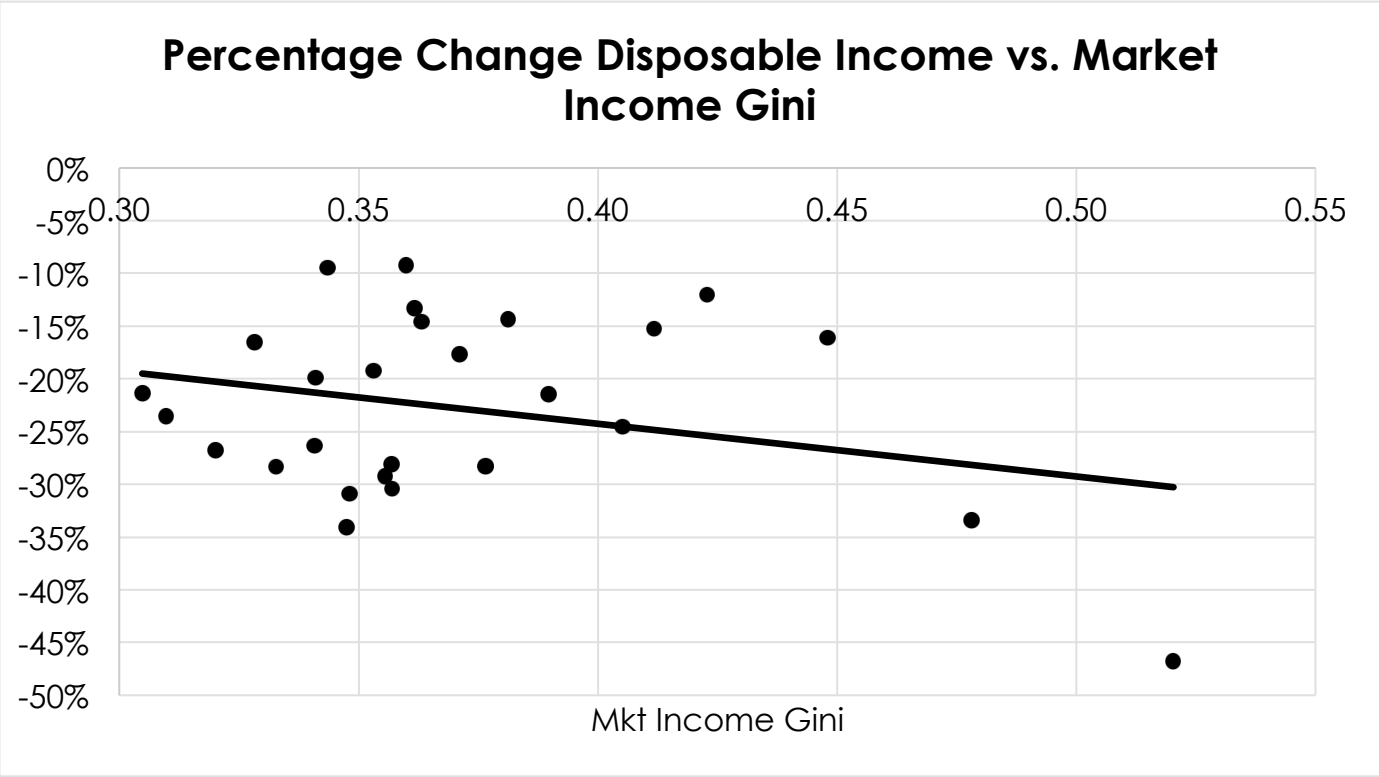


Cross-country Analysis: Rich Countries and CEQ 17 (in red dots)

Source: Lustig (2015a)

Do more unequal *rich* countries redistribute more?

- **Yes (graphical "proof")**



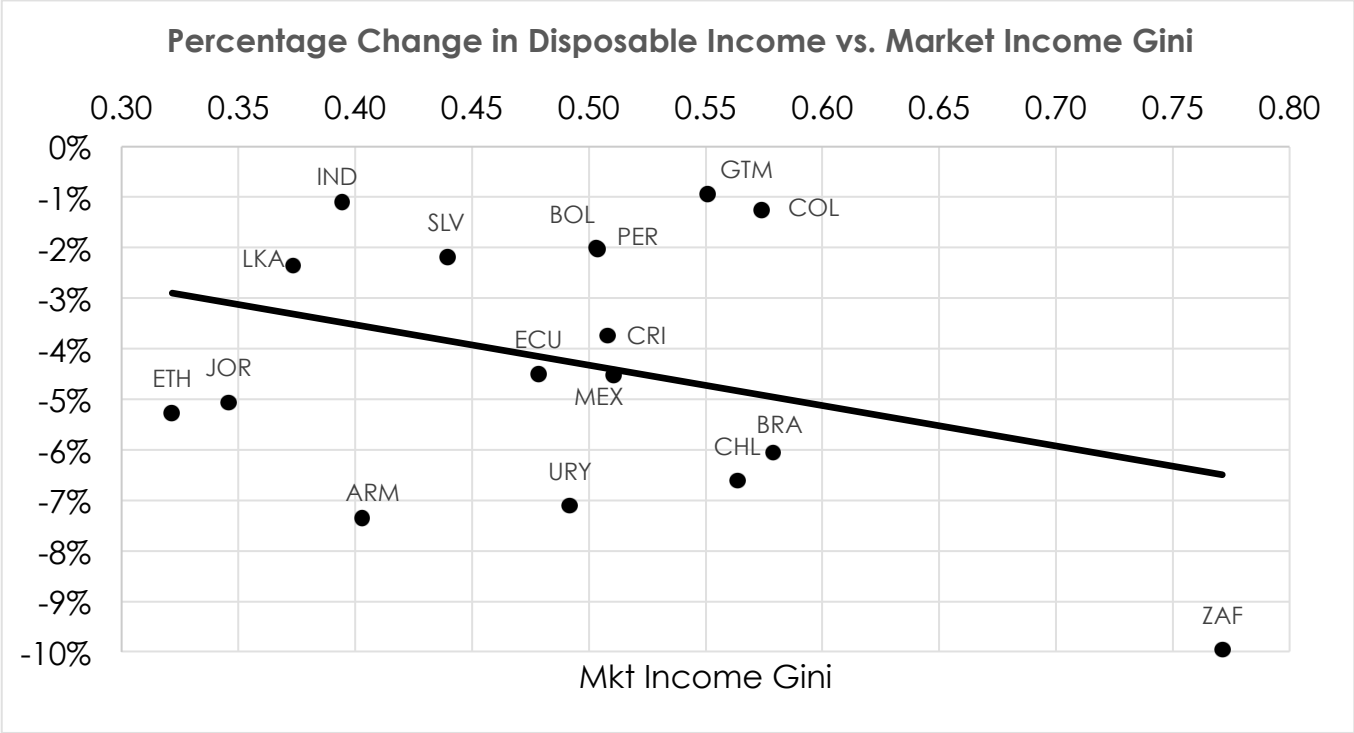
- US: Higgins et al. Forthcoming in Review of Income and Wealth
- Rest: EUROMOD 2013 Gini series: https://www.iser.essex.ac.uk/euromod/statistics

Source: Lustig (2015a)

Cross-country Analysis: CEQ 17
Do more unequal *developing* countries redistribute more?

COMMITMENT TO EQUITY

- **Yes, but sensitive to measure (percentage points and %), sample (South Africa); not always statistically significant**



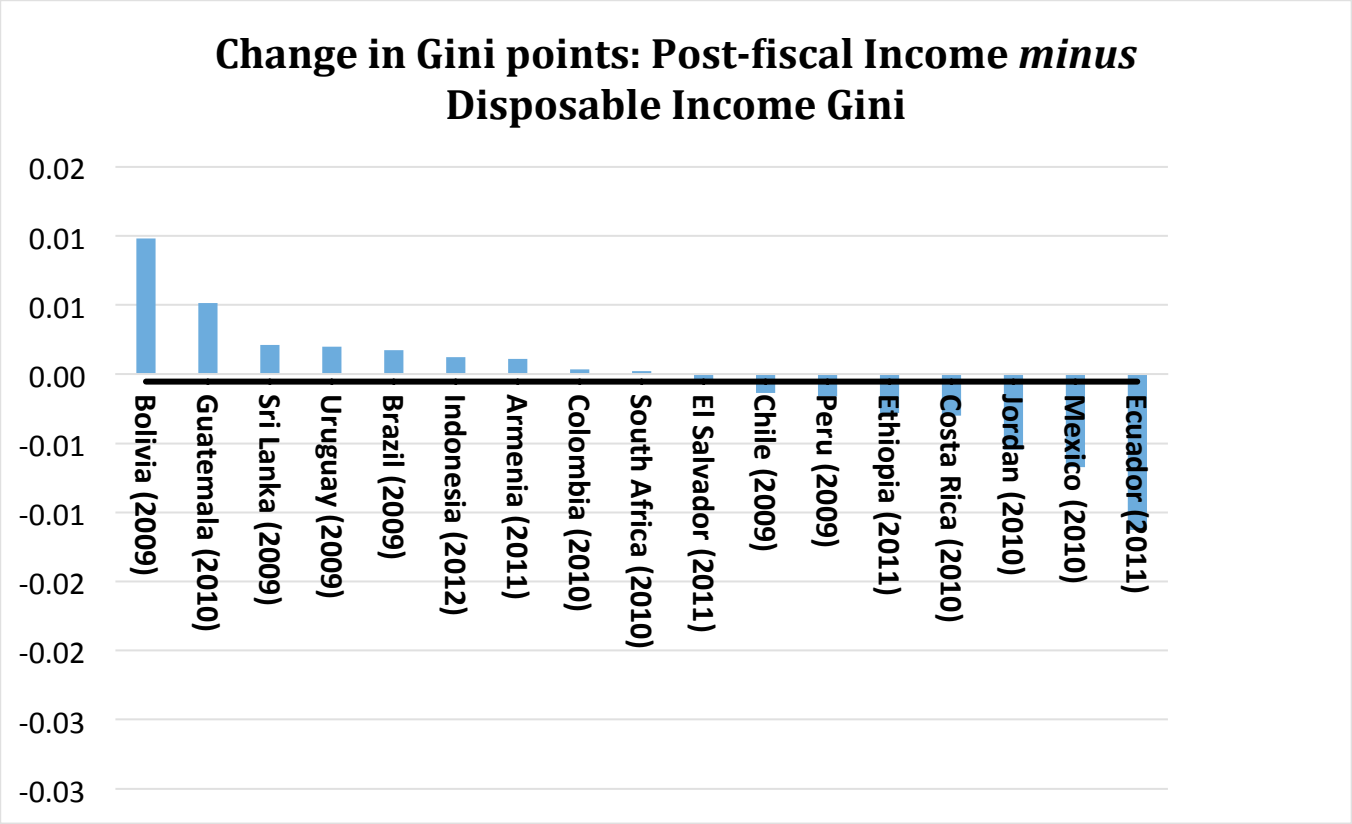
Source: Lustig (2015a)

Cross-country Analysis: CEQ 17
Are net indirect taxes unequalizing?
Do they increase poverty?

- In 7 countries their marginal contribution is unequalizing: Armenia, Bolivia, Brazil, Guatemala, Indonesia, Sri Lanka and Uruguay
- In 6 countries they increase poverty over and above market income poverty: Armenia, Bolivia, Brazil, Ethiopia, Guatemala and Sri Lanka

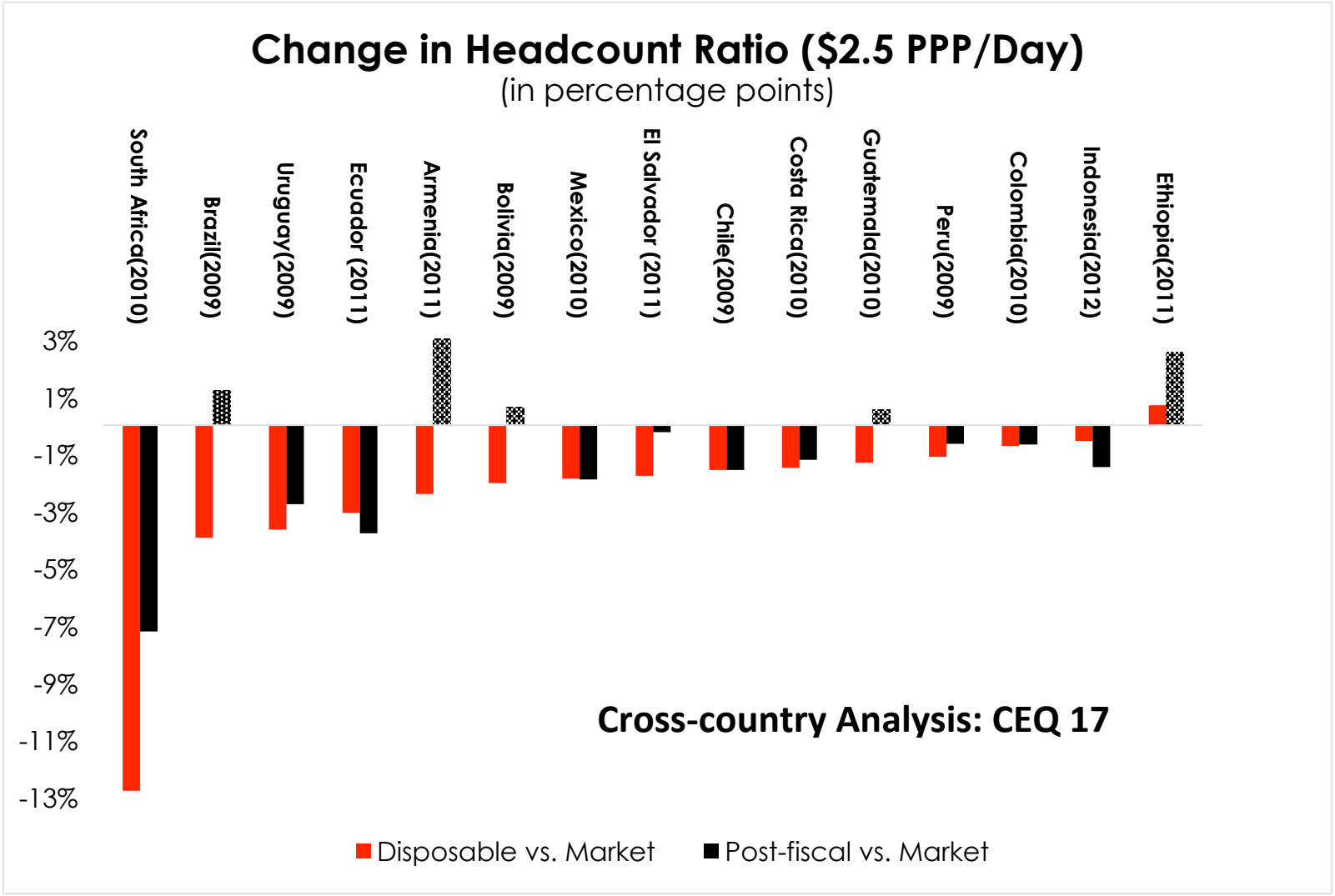
Source: Lustig (2015a)

Cross-country Analysis: CEQ 17
Are net indirect taxes unequalizing?



Source: Lustig (2015a)

Cross-country Analysis: CEQ 17
Do net indirect taxes increase poverty?



Source: Lustig (2015a)

Cross-country Analysis: CEQ 13
How pro-poor is spending on education and health?

	Educ Total			Pre-school			Primary			Secondary			Tertiary				Health		
	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Regressive CC positive AND higher than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini
Armenia (2011)	+				+		+			+					+			+	
Bolivia (2009)		+		+			+			+					+			+	
Brazil (2009)	+			+			+			+					+		+		
Chile (2009)	+			+			+			+					+		+		
Colombia (2010)	+			+			+			+					+		+		
El Salvador (2011)	+			+			+				+				+*				+
Ethiopia (2011)			+	na				+				+				+			+
Guatemala (2010)		+		+			+				+					+			+
Indonesia (2012)		+		na			+				+					+			+
Mexico (2010)	+			+			+			+					+			+	
Peru (2009)	+			+			+			+					+				+
South Africa (2010)	+			+			+			+					+		+		
Uruguay (2009)	+			+			+			+					+*		+		

*CC is almost equal to market income Gini coefficient

Source: Lustig (2015b)

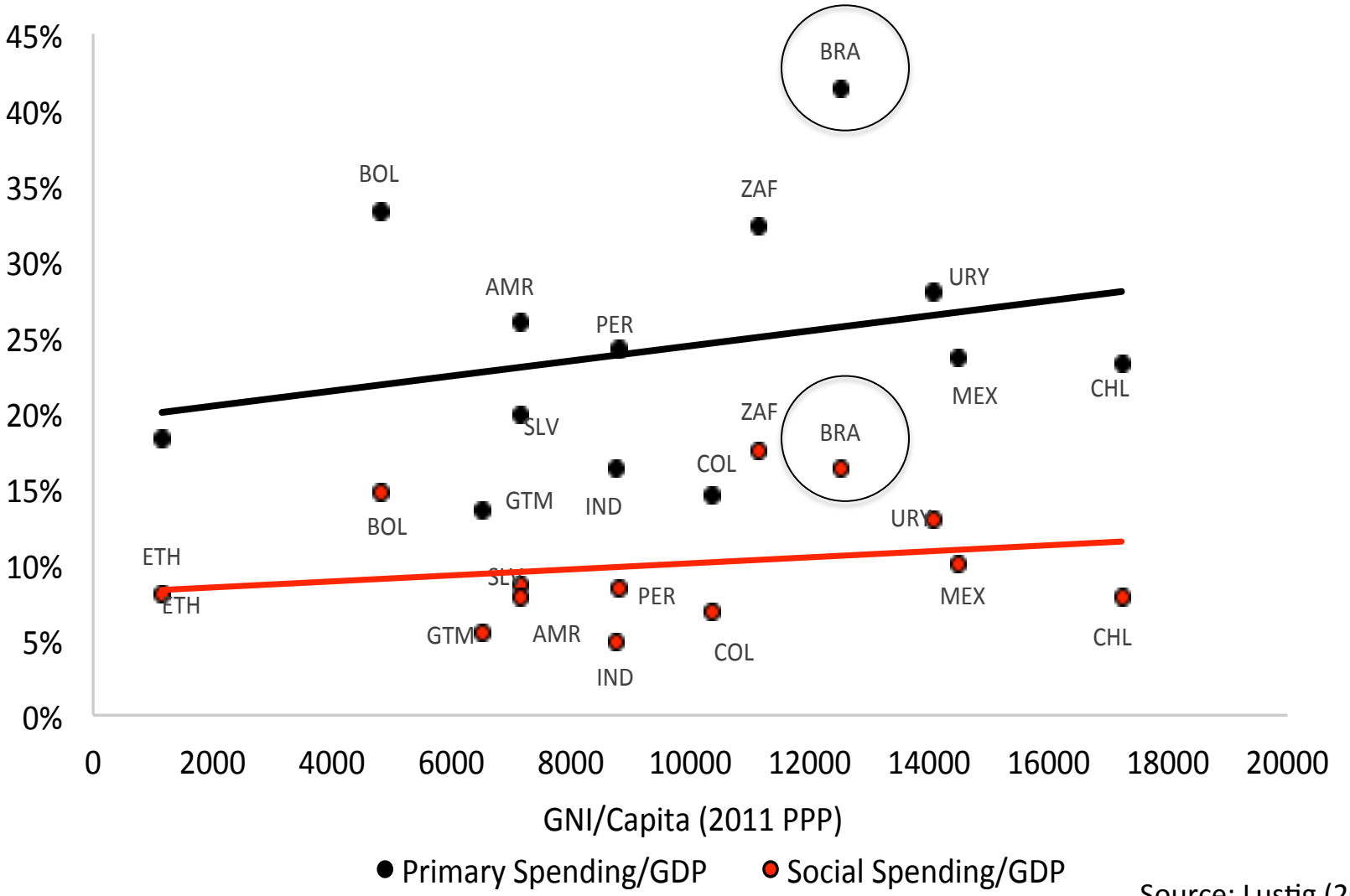
Outline

- What is the Commitment to Equity (CEQ) project?
- Commitment to Equity Assessments: Methodological Highlights
- Commitment to Equity Assessments: Highlights of Results
  - Cross-country analysis
  - Country-specific analysis: Brazil, Ethiopia and Indonesia

ZOOMING IN BRAZIL

Source: Higgins and Pereira (2014) and Lustig (2015a, b, c)

Primary and Social Spending/GDP vs GNI/capita



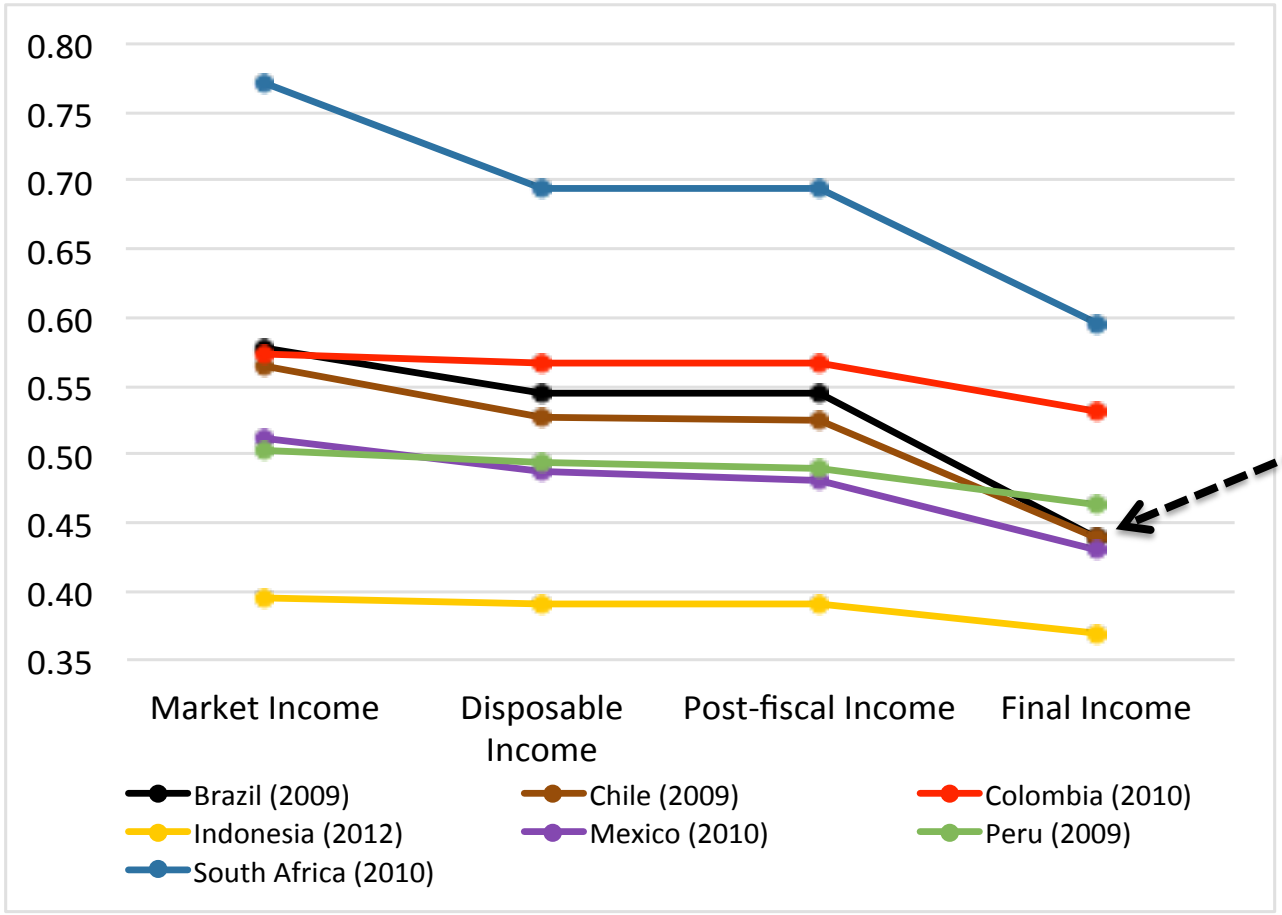
Source: Lustig (2015a)

Suppose you want to know…

- What is the impact of taxes and government transfers on inequality and poverty?
- What is the contribution of direct taxes and direct transfers to the change in inequality?
- Who (which income category) are the net tax payers to the fiscal system?
- Are the poor impoverished by taxes net of cash transfers?

Fiscal Redistribution: Brazil, Chile, Colombia, Indonesia, Mexico and South Africa

Gini Coefficient, circa 2010

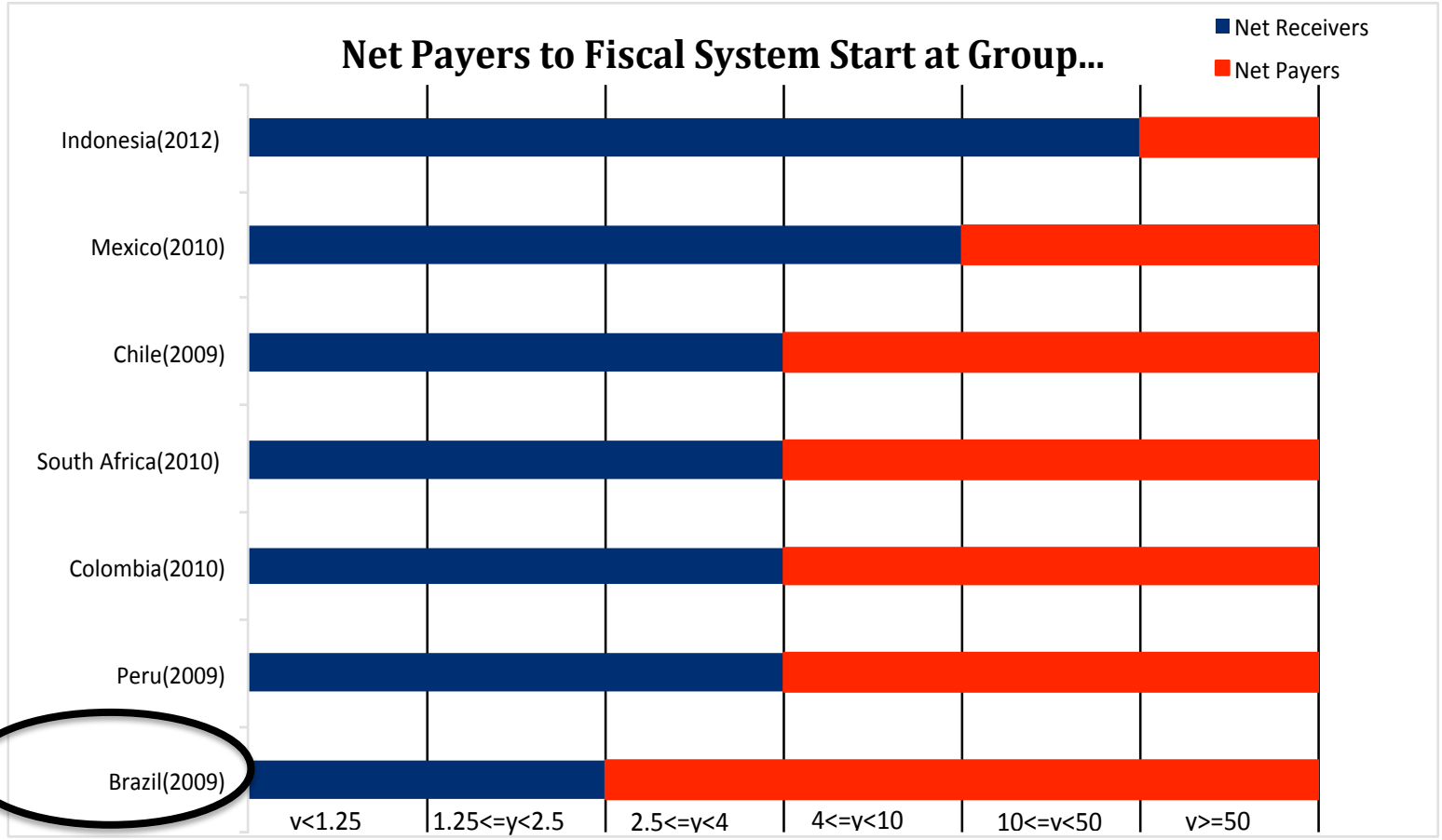


Source: Lustig (2015a)

Suppose you want to know…

- Who are the net tax payers to the fiscal system?
- Are the poor impoverished by taxes net of cash transfers?
- What is the impact of taxes and government transfers on poverty?

Net Receivers and Net Payers to the Fiscal System by Income Category (circa 2010)



- Brazil: Net payers to the fisc start in the moderate poverty income group

Source: Lustig (2015a)

- Are the poor impoverished by taxes net of cash transfers?

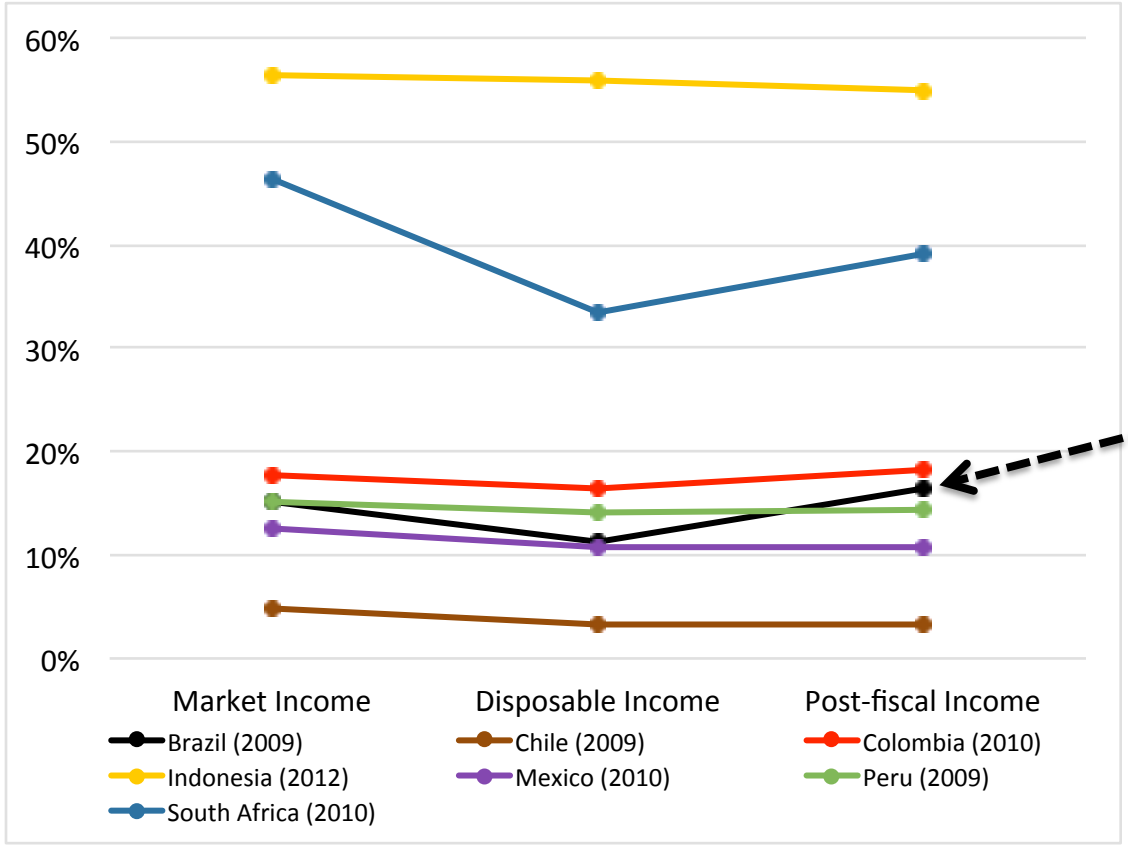
➢ Yes

- 36.8% of post-fisc poor are fiscally impoverished
- Total fiscal impoverishment over USD $700 million
- Impoverished pay $0.19 per person per day (10% of their incomes) in net taxes on average

Source: Higgins and Lustig (2014)

Fiscal Poverty Reduction: Brazil, Chile, Colombia, Indonesia, Mexico and South Africa

Headcount Ratio ($2.50/day ppp poverty line), circa 2010



Source: Lustig (2015a)

Suppose you want to know…

- Is spending on education and health pro-poor? Pro-poor is defined as the case in which per capita spending tends to fall with income

➢ Yes, for the most part

- Except for tertiary education, spending on education is pro-poor
- Spending on health is pro-poor
- *Pro-poor* or the middle-classes opting out of poor quality services

Progressivity and Pro-poorness of Education and Health Spending, circa 2010 (Brazil highlighted in yellow)

	Educ Total			Pre-school			Primary			Secondary			Tertiary				Health		
	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Regressive CC positive AND higher than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini
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Bolivia (2009)		+		+			+			+					+			+	
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Chile (2009)	+			+			+			+					+		+		
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Ethiopia (2011)			+	na				+				+				+			+
Guatemala (2010)		+		+			+				+					+			+
Indonesia (2012)		+		na			+				+					+			+
Mexico (2010)	+			+			+			+					+			+	
Peru (2009)	+			+			+			+					+				+
South Africa (2010)	+			+			+			+					+		+		
Uruguay (2009)	+			+			+			+					+*		+		

Brazil: Summing-up

Inequality

- The net fiscal system is quite equalizing in Brazil, especially when compared with countries that start at similar levels of inequality like Colombia
- Direct taxes, direct transfers and in-kind transfers are equalizing
- Net Indirect taxes are unequalizing but slightly

Poverty

- Net indirect taxes are quite devastating for poverty
  - Poverty is higher than market income poverty
  - Net payers to the fiscal system start as low as the third decile
  - More than a third of the poor are made poorer through the effect of indirect taxes

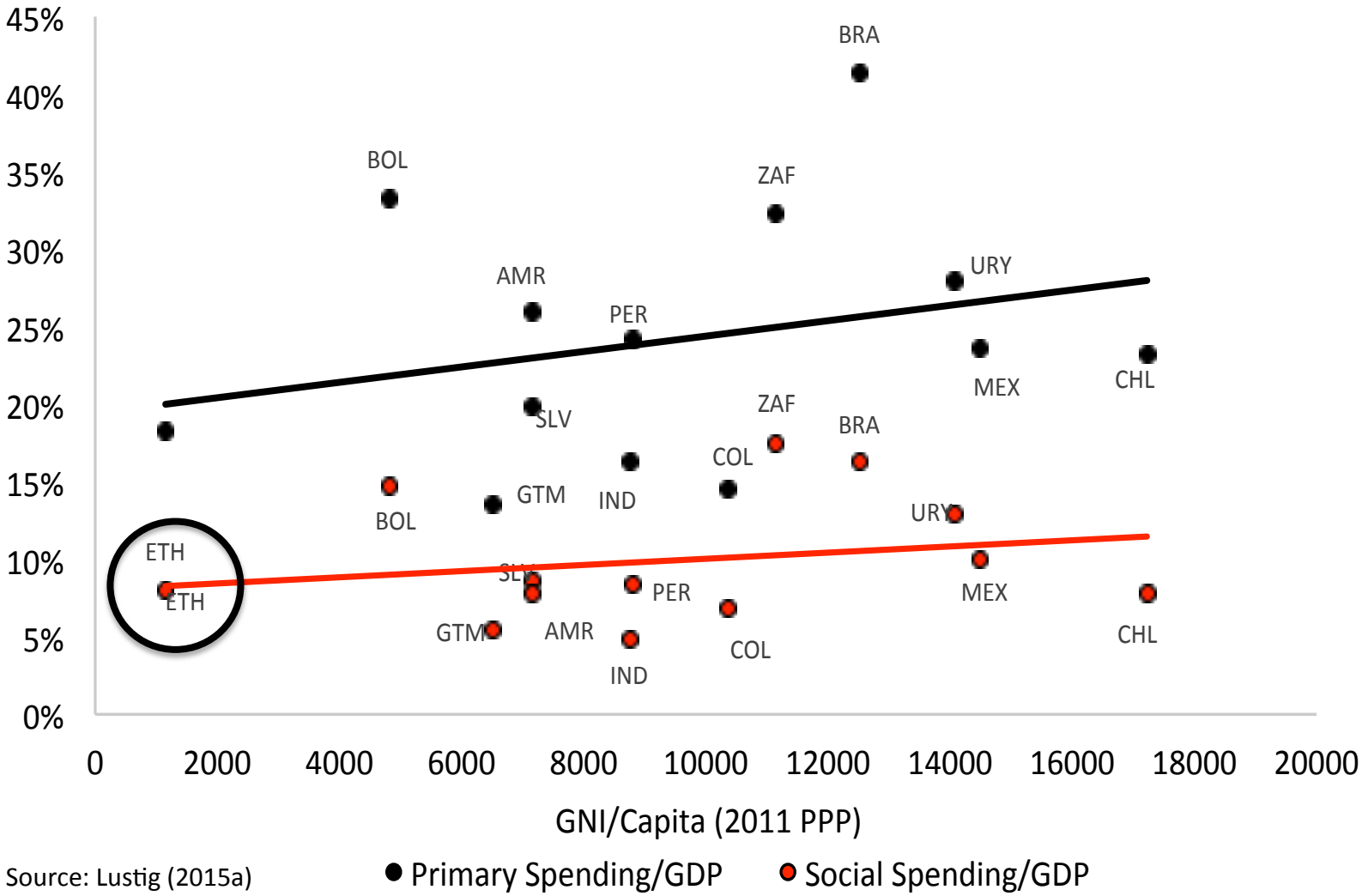
Use of services

- Mostly pro-poor
- Opting-out of middle-classes due to poor quality

ZOOMING IN ETHIOPIA

Source: Higgins and Pereira (2014) and Lustig (2015a, b, c)

Primary and Social Spending/GDP vs GNI/capita

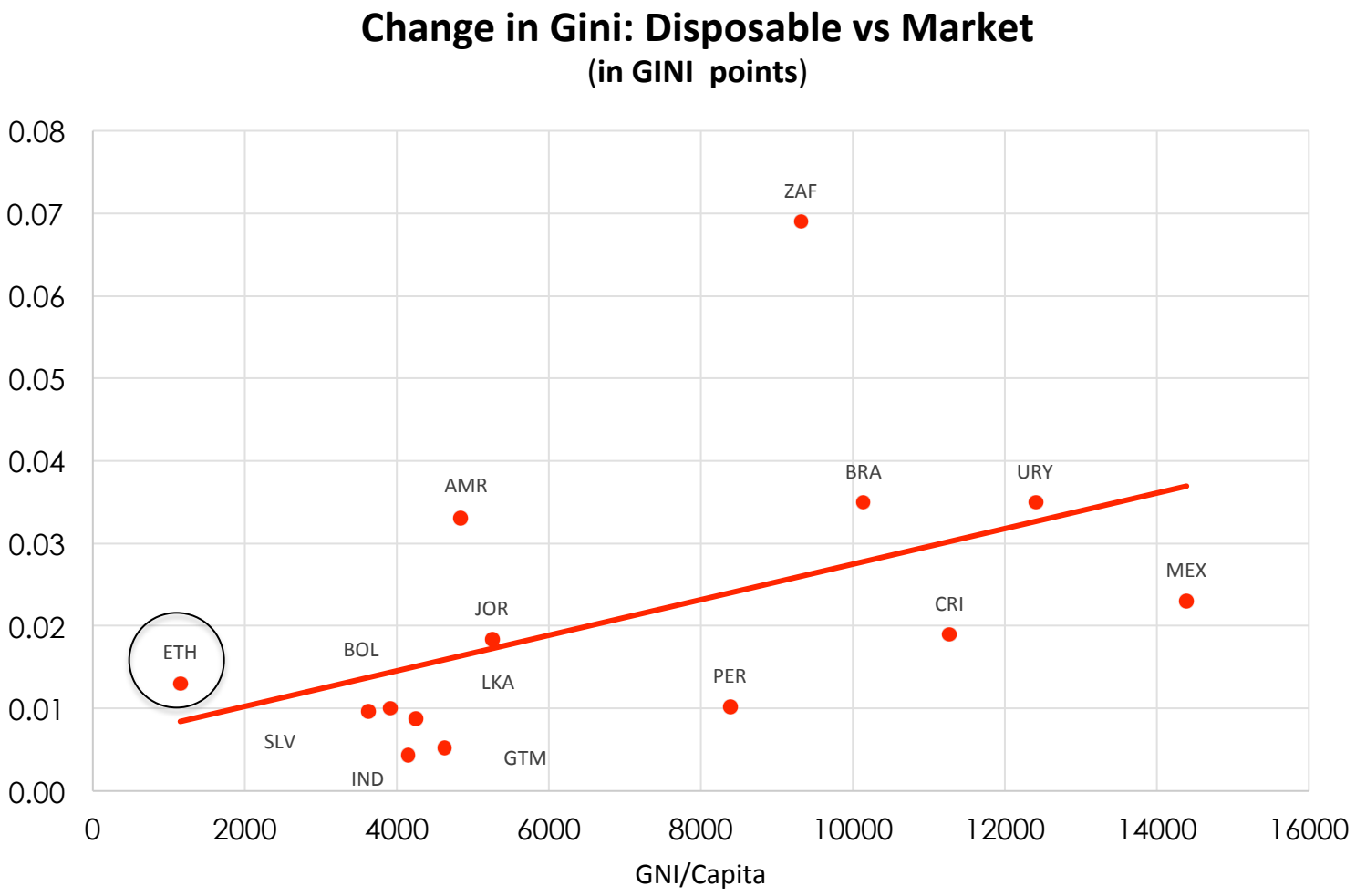


Source: Lustig (2015a)

Suppose you want to know…

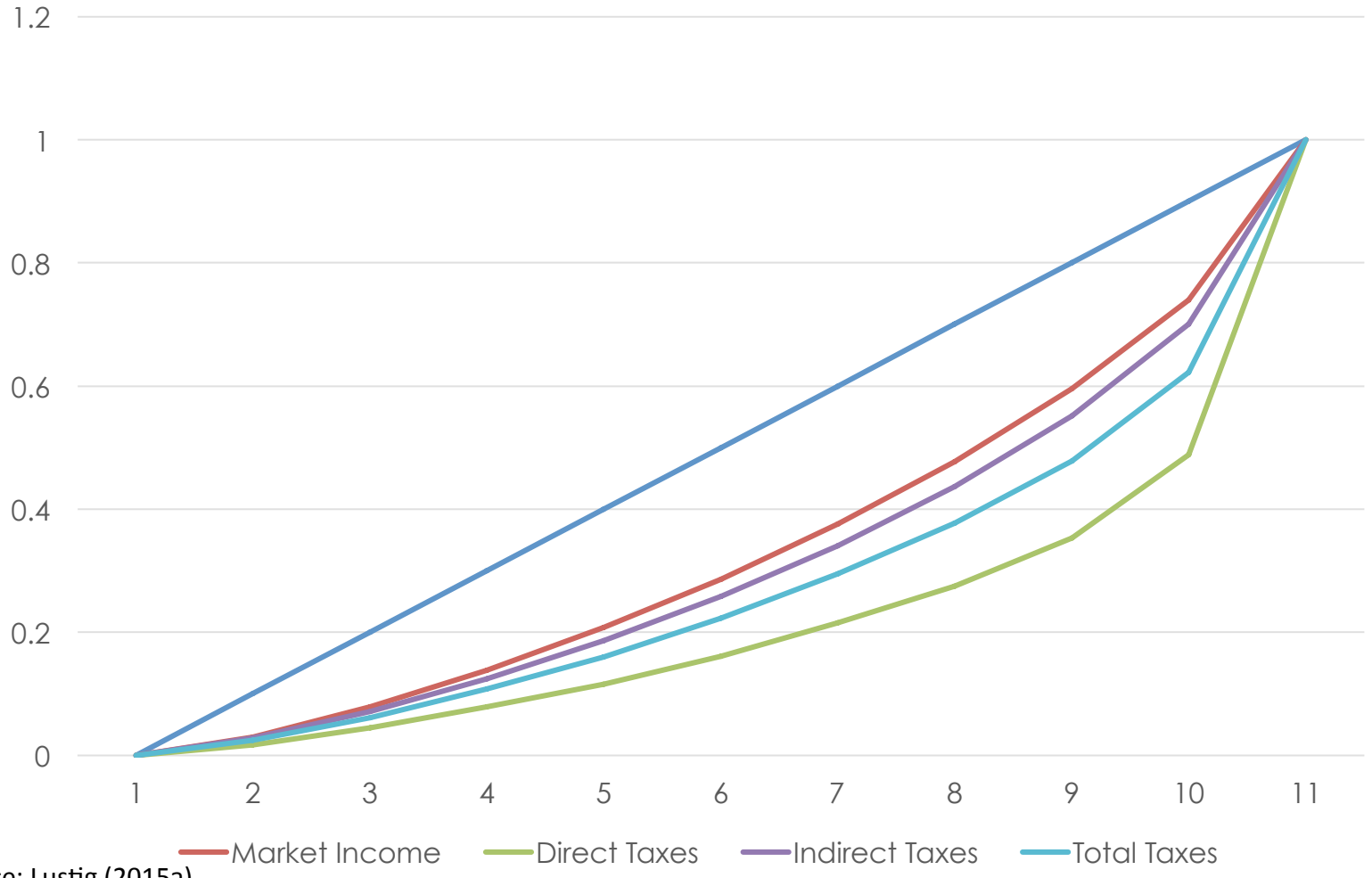
- What is the impact of taxes and government transfers on inequality and poverty?
- Who are the net tax payers to the "fisc"?
- Are the poor impoverished by taxes net of cash transfers?

Redistribution in Ethiopia is above prediction…



Source: Lustig (2015a)

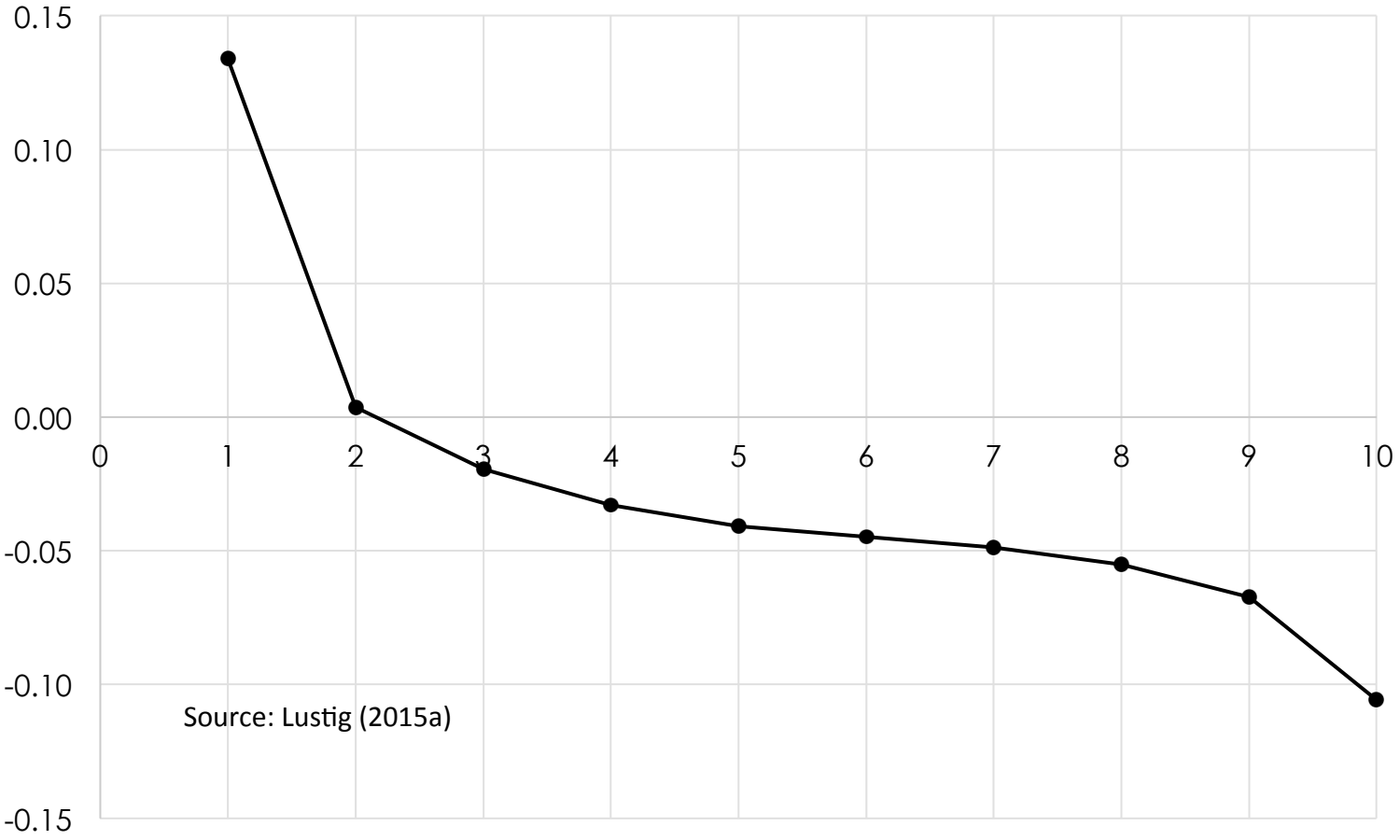
Direct taxes AND consumption taxes are PROGRESSIVE and EQUALIZING



Source: Lustig (2015a)

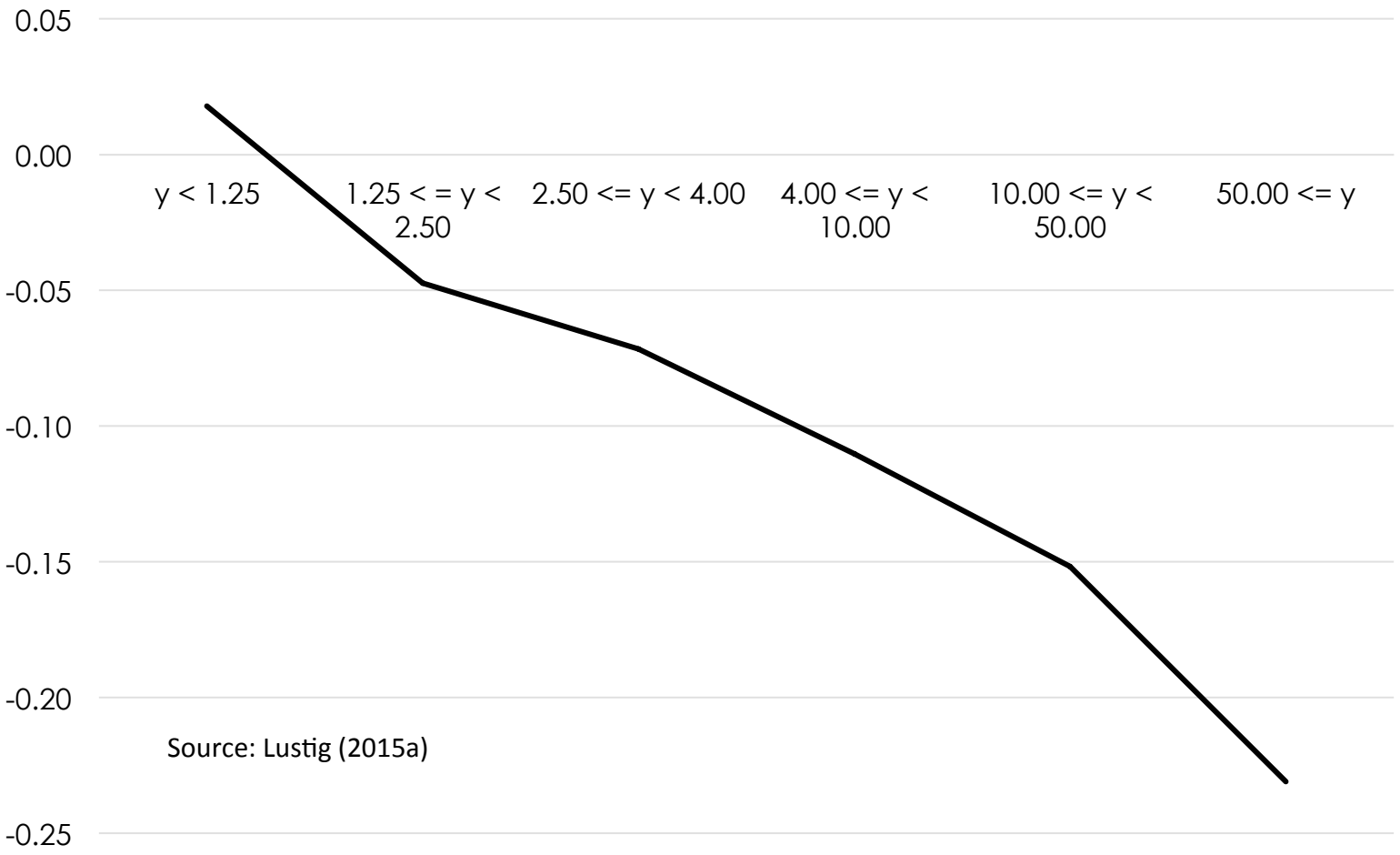
However, except for the bottom 10 percent, all deciles are net payers to the fisc…

Ethiopia: Net Payers to the Fiscal System Start at Decile...

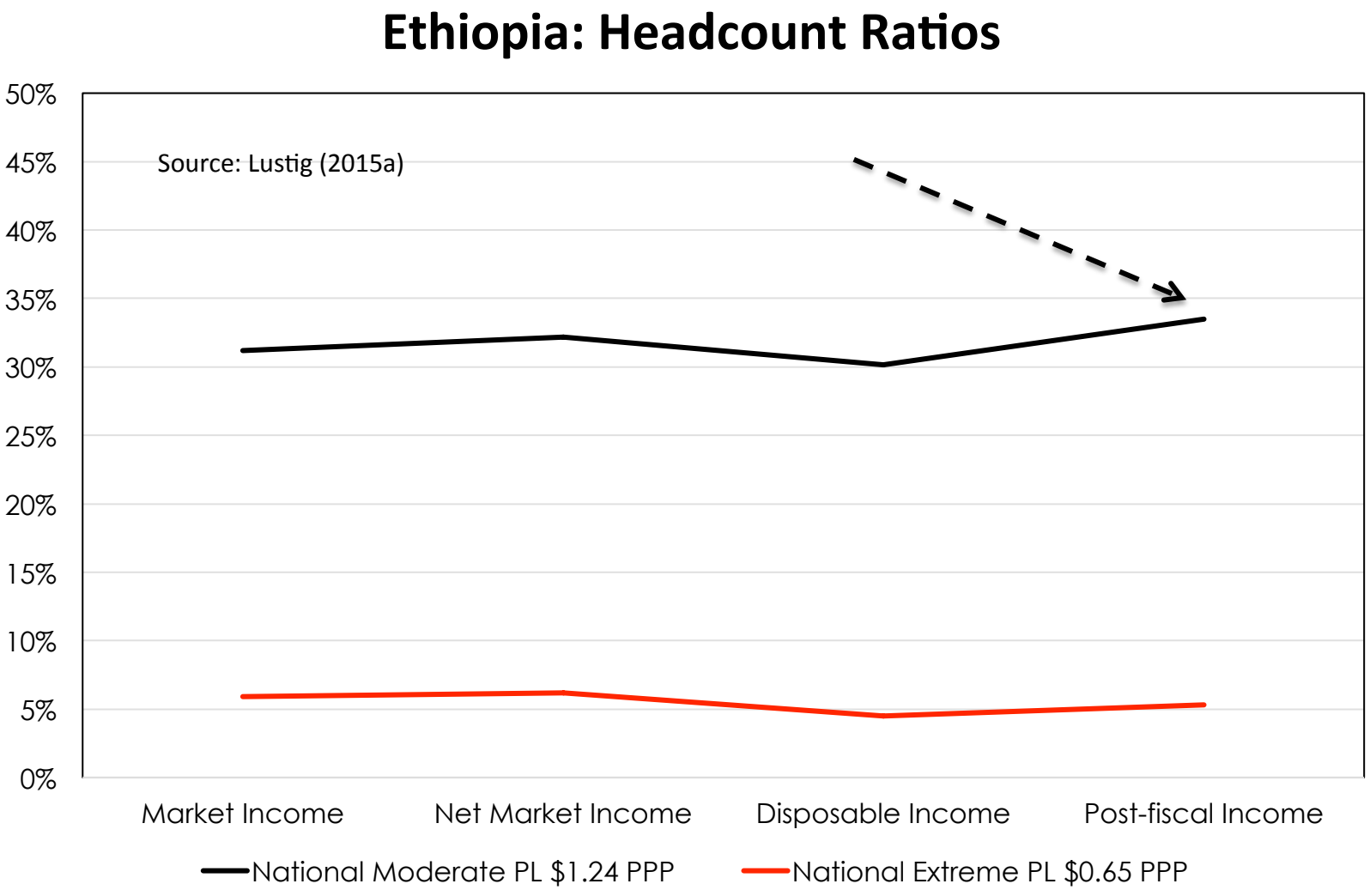


Except for the bottom income category (<US$1.25/day), the rest are net payers to the fisc…

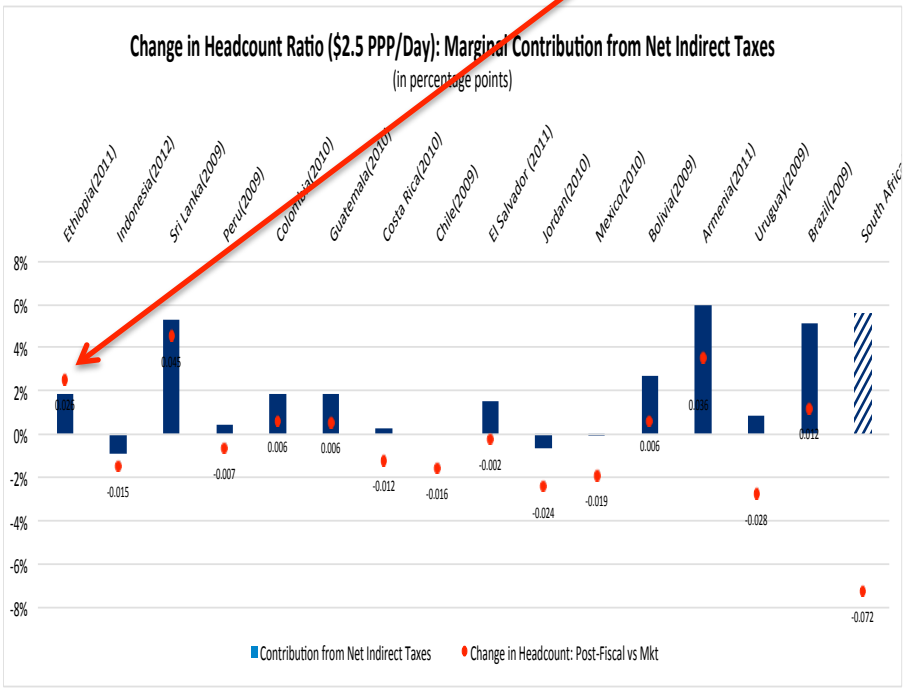
Ethiopia: Net Payers to the Fiscal System Start at Income Category...

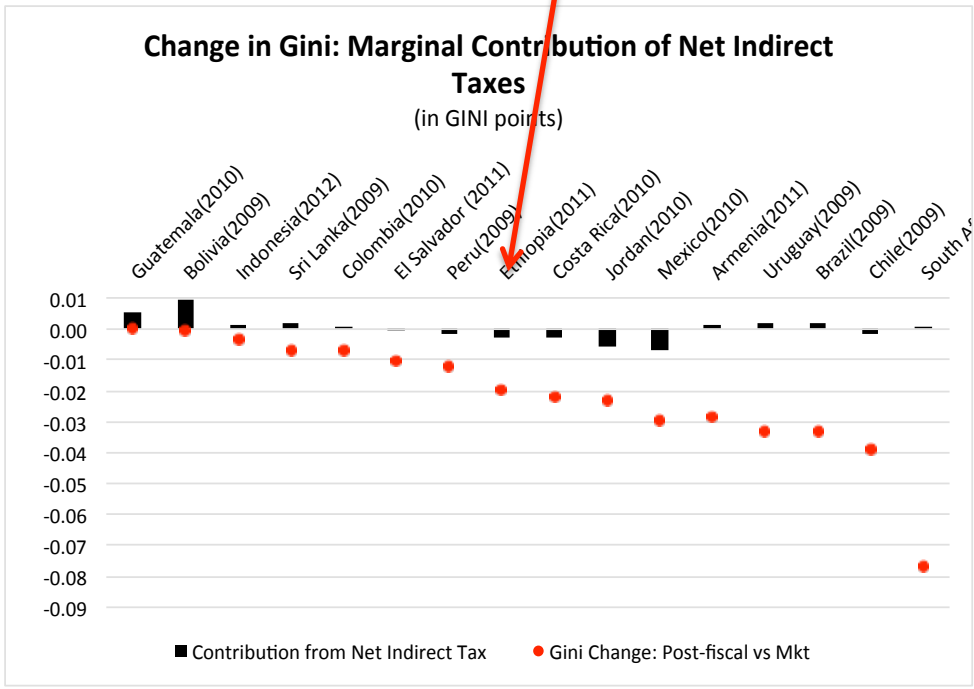


In Ethiopia, post-fiscal poverty is higher than pre-fisc poverty even when using the official US $1.24 (daily ppp) moderate poverty (black line)



Note that Net Indirect Taxes can be equalizing and yet poverty increasing: Ethiopia





Source: Lustig (2015a)

Suppose you want to know…

Since many of the poor are net payers into the fiscal system:

- How pro-poor is the use of government education and health services?

COMMITMENT TO EQUITY

Progressivity and Pro-poorness of Education and Health Spending, circa 2010 Ethiopia highlighted in yellow

	Educ Total			Pre-school			Primary			Secondary			Tertiary				Health		
	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini	Regressive CC positive AND higher than market income Gini	Pro-poor CC is negative	Same per capita for all; CC =0	Progressive CC positive but lower than market income Gini
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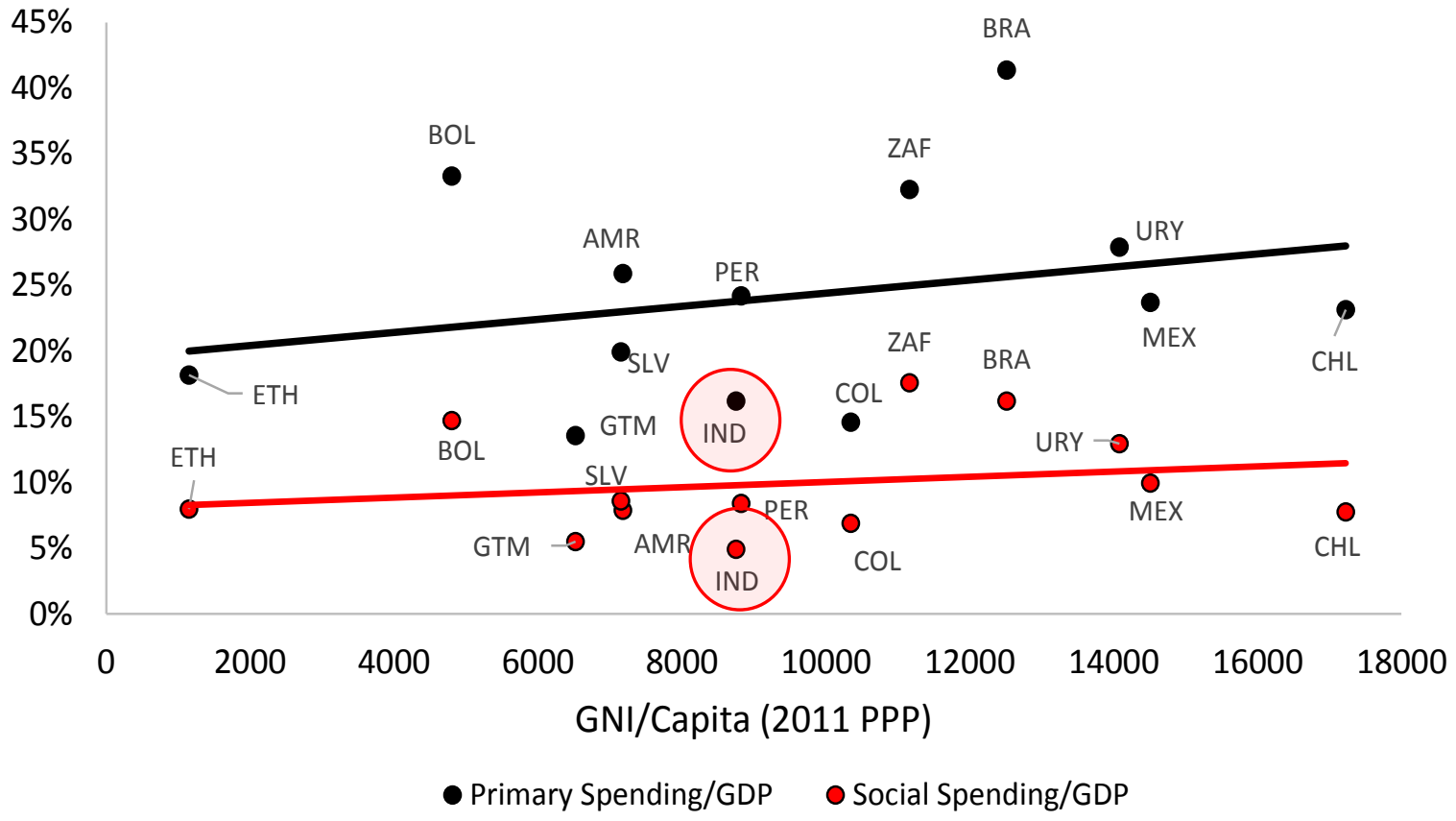
Chile (2009)	+			+			+			+					+		+		
Colombia (2010)	+			+			+			+					+		+		
El Salvador (2011)	+			+			+				+				+*				+
Ethiopia (2011)			+	na				+				+				+			+
Guatemala (2010)		+		+			+				+					+			+
Indonesia (2012)		+		na			+				+					+			+
Mexico (2010)	+			+			+			+					+			+	
Peru (2009)	+			+			+			+					+				+
South Africa (2010)	+			+			+			+					+		+		
Uruguay (2009)	+			+			+			+					+*		+		

Source: Lustig (2015b)

ZOOMING IN INDONESIA

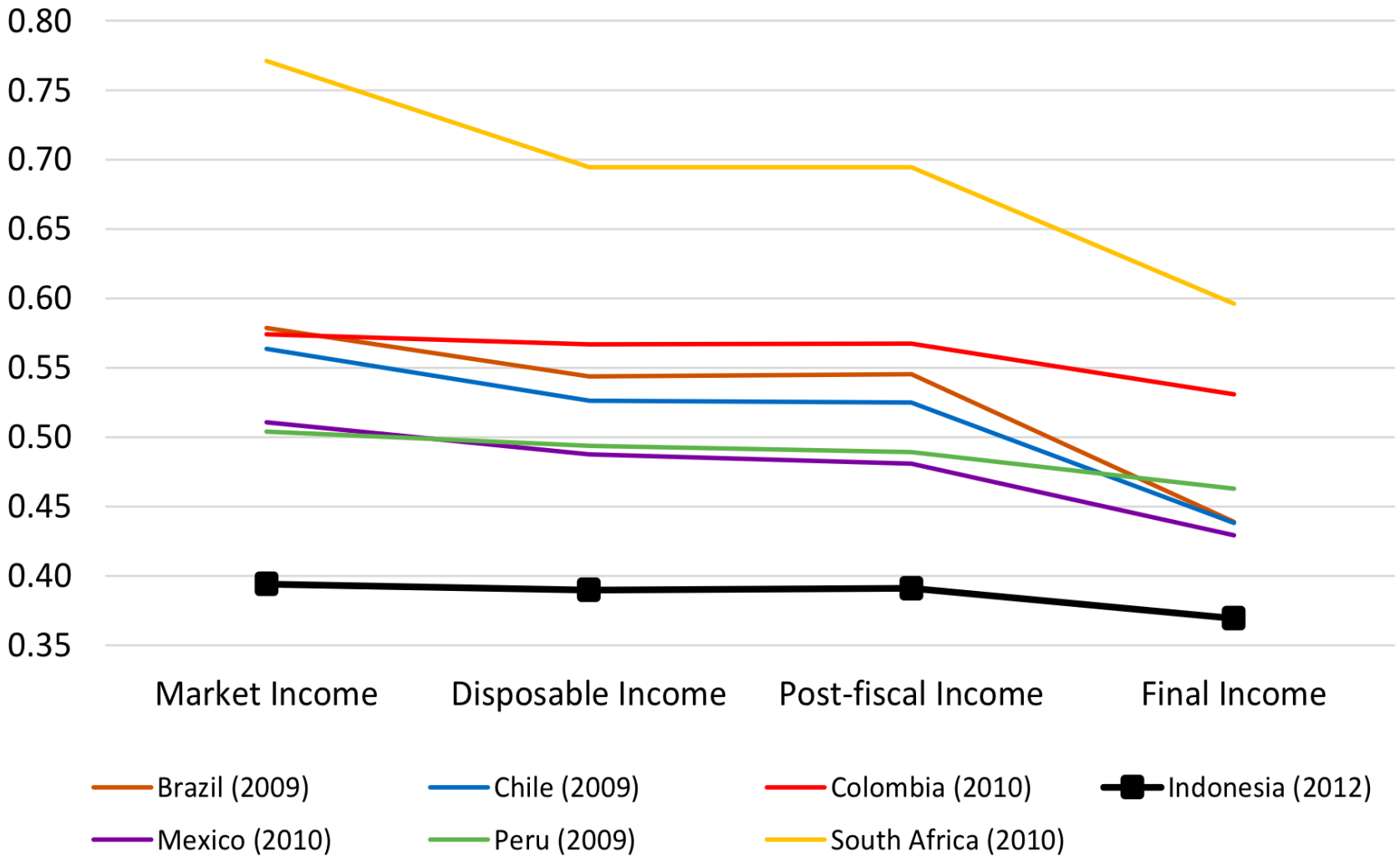
Source: Higgins and Pereira (2014) and Lustig (2015a, b, c)

Primary and Social Spending/GDP vs GNI/capita



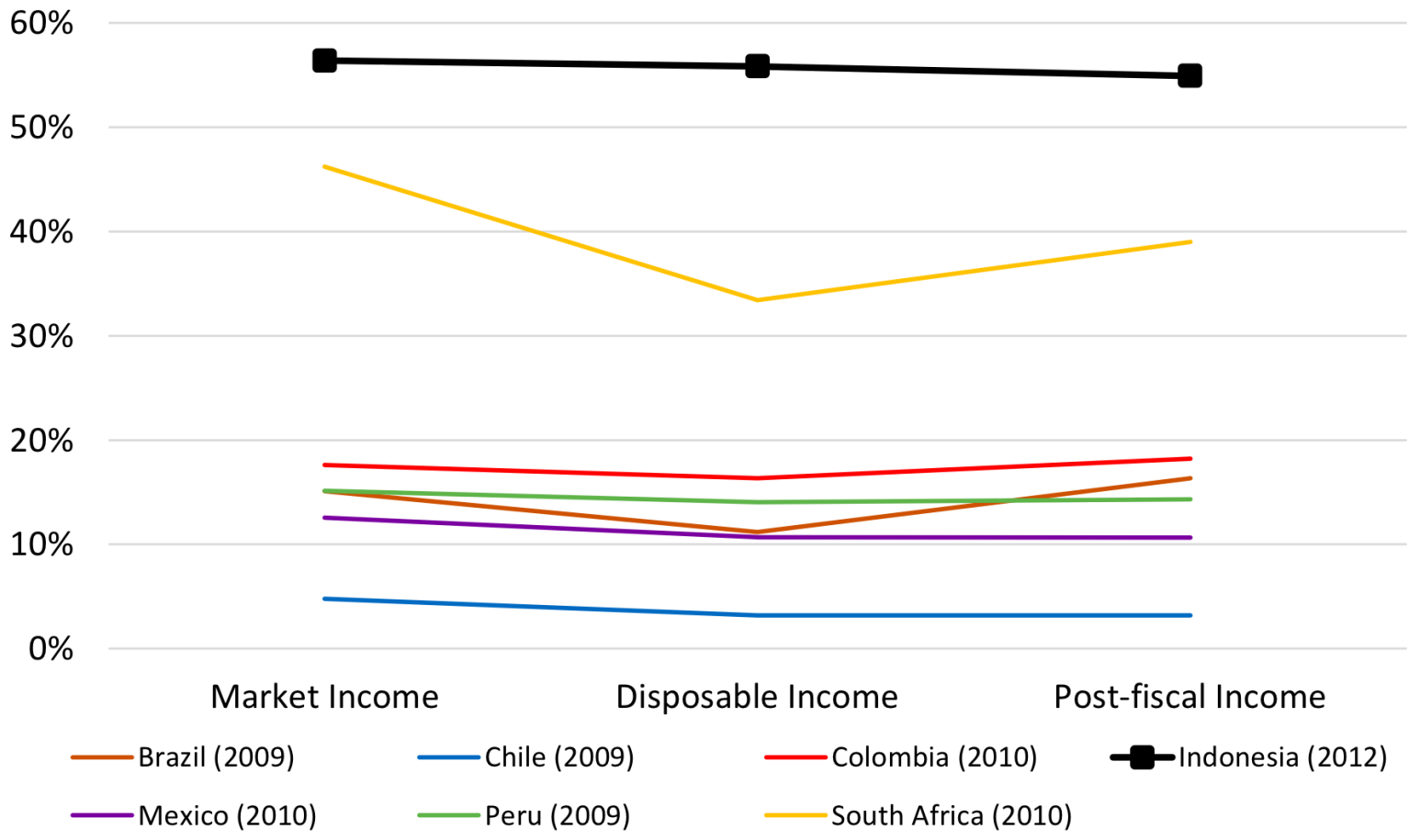
Source: Lustig (2015a)

Gini Coefficient for Each Income Concept (circa 2010)



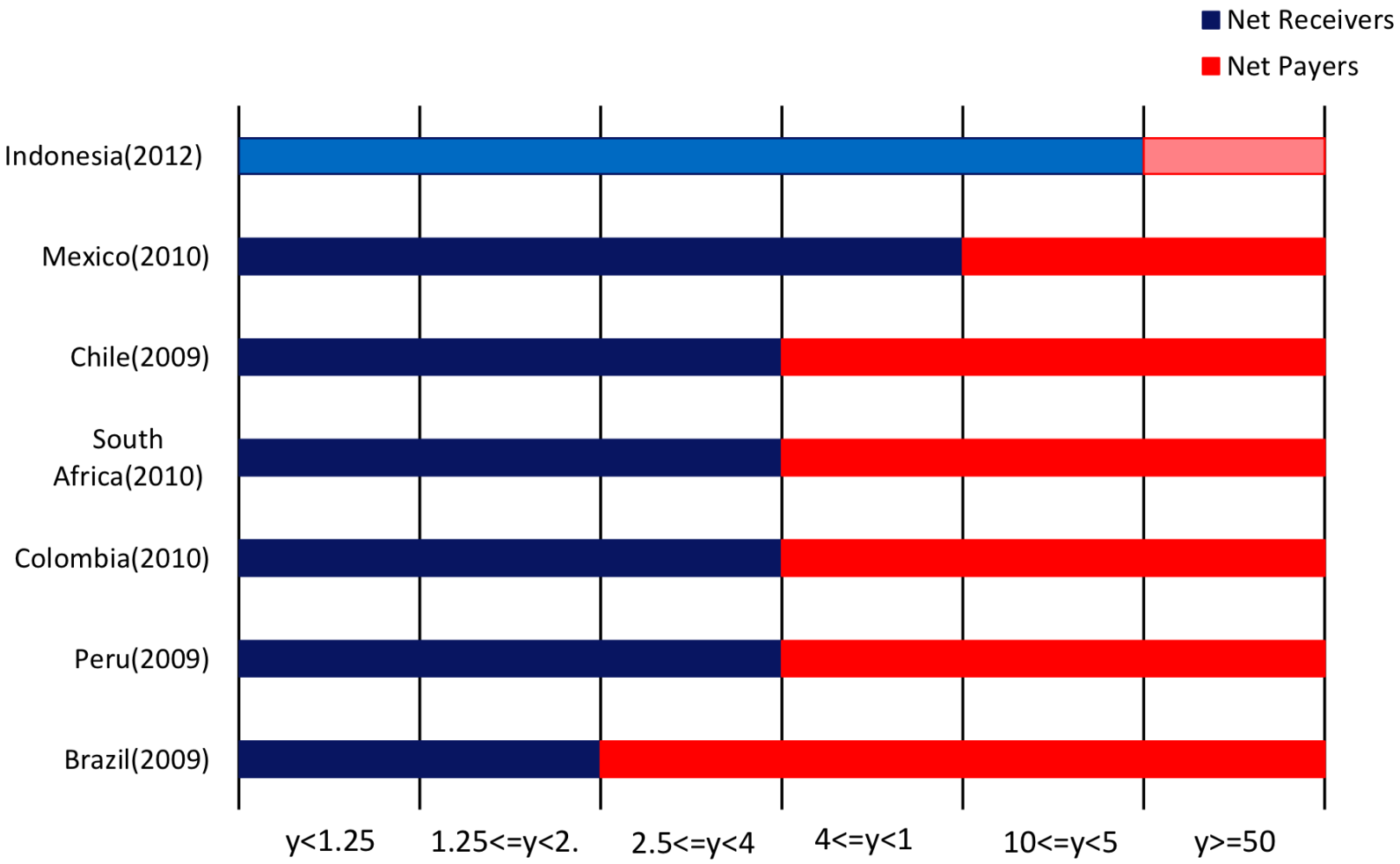
Source: Lustig (2015a)

Headcount Ratio (circa 2010; Poverty Line at US$2.50/day in 2005 ppp)



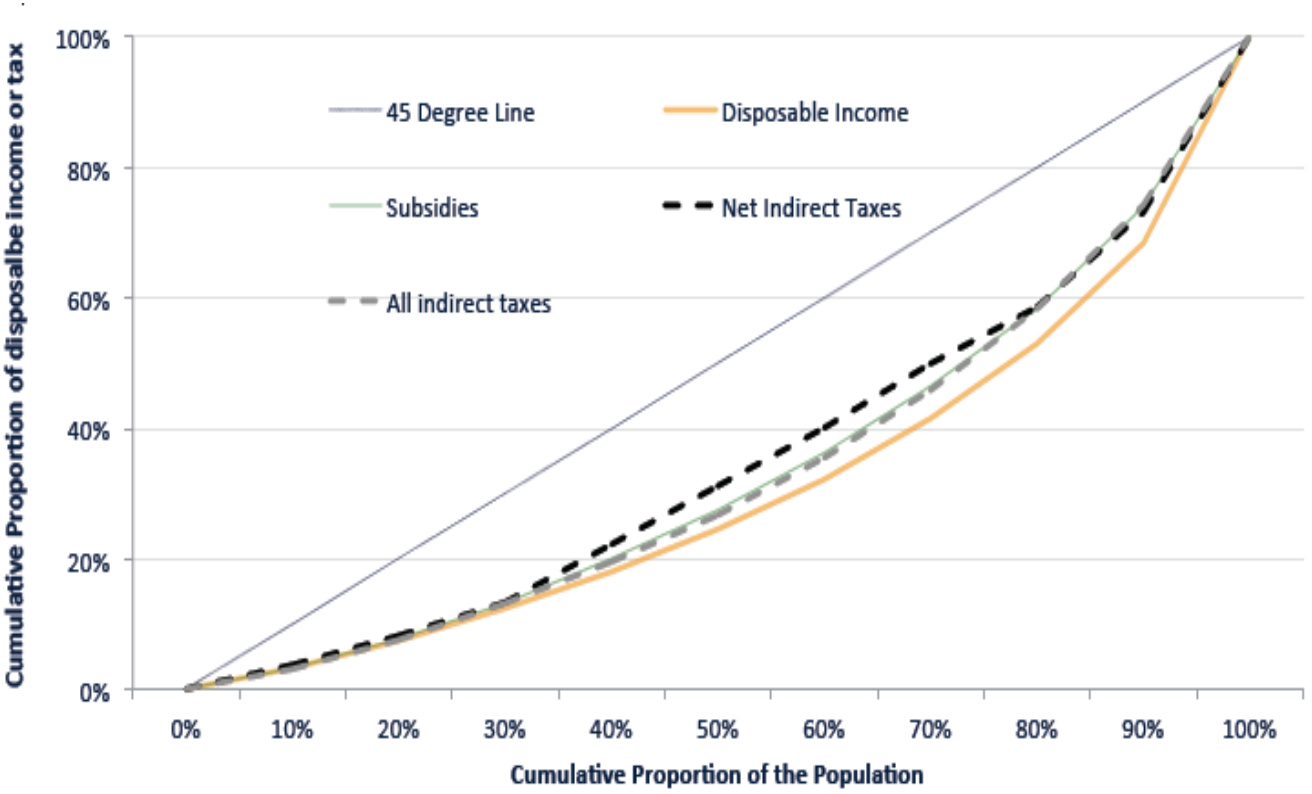
Source: Lustig (2015a)

Net Payers to the Fiscal System (circa 2010)



Source: Lustig (2015a)

CEQ Indonesia
Note: Regressive indirect taxes are equalizing over and above the impact of subsidies alone (Lustig, 2015a)



Source: Jellema et al., 2014

Is a tax equalizing?
Answer for a system with multiple interventions

Adding a tax that is:		Transfer: Regressive	Transfer: Progressive
Tax	Regressive	Never more equalizing	More equalizing only if Condition 2 holds
Tax	Progressive	More equalizing only if Condition 2 holds	Always more equalizing

Indonesia: Indirect Taxes are in this box

Condition 2

$$\rightarrow RE_t > -\frac{(g)}{(1-g)} RE_B$$

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Also, please cite: CEQ Country Master Workbooks and Papers
(Year of Survey; C=consumption & I=income)
(Master Workbook, MWB, Version)

COMMITMENT TO EQUITY

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10. **Indonesia (2012; C) :** Jon Jellema and Matthew Wai-Poi. 2014. CEQ Master Workbook, Tulane University and The World Bank (February 18, 2014)
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Thank you!