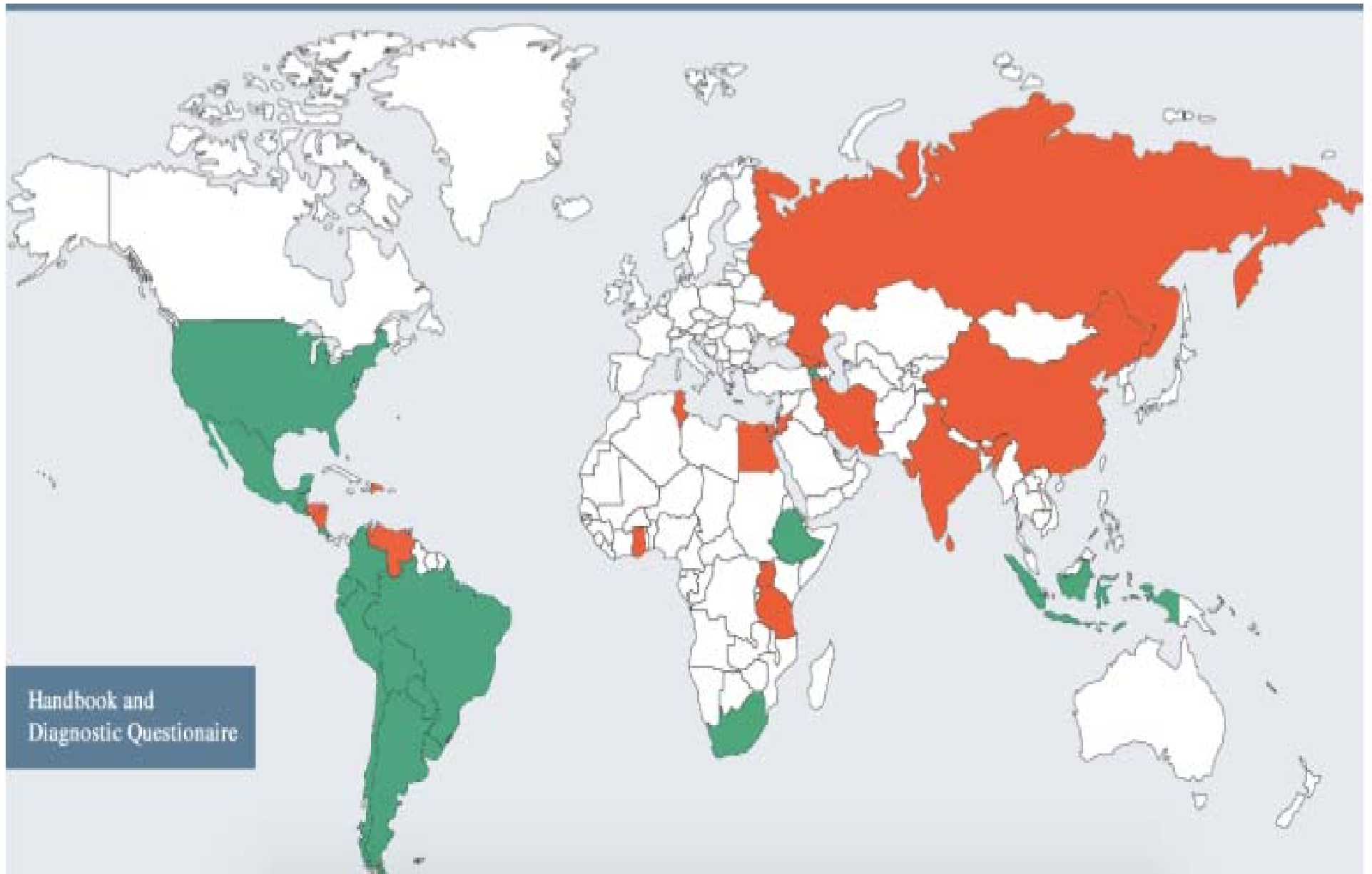


**Fiscal Policy, Inequality and Poverty in  
Middle Income Countries:  
Brazil, Chile, Colombia, Indonesia, Mexico,  
Peru and South Africa**

**Nora Lustig**

**Tulane University, CGD, IAD**

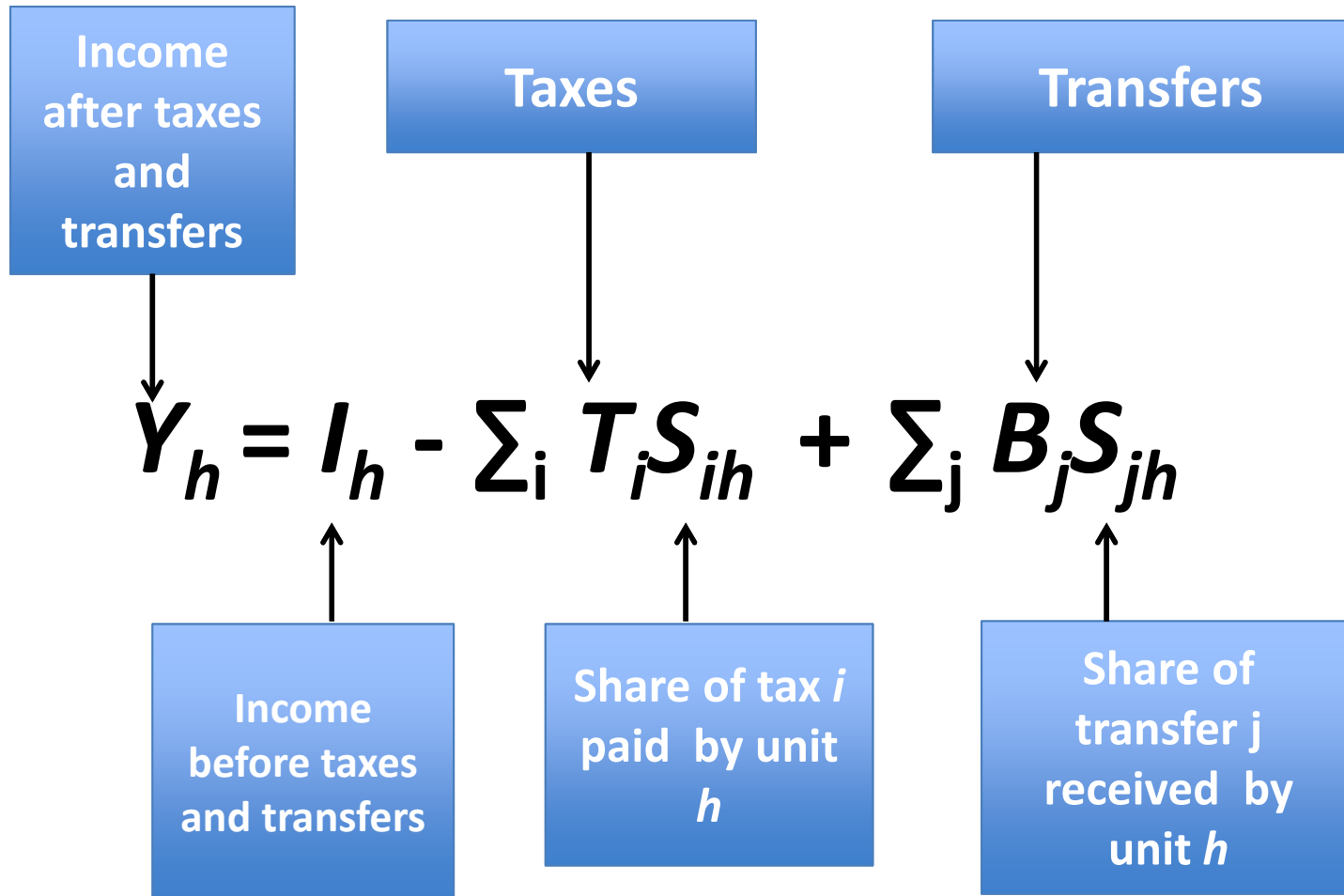
**Towards Poverty and Inequality  
Reduction in Colombia:  
Analyzing the 2012's Tax Reform  
World Bank, November 17, 2015**



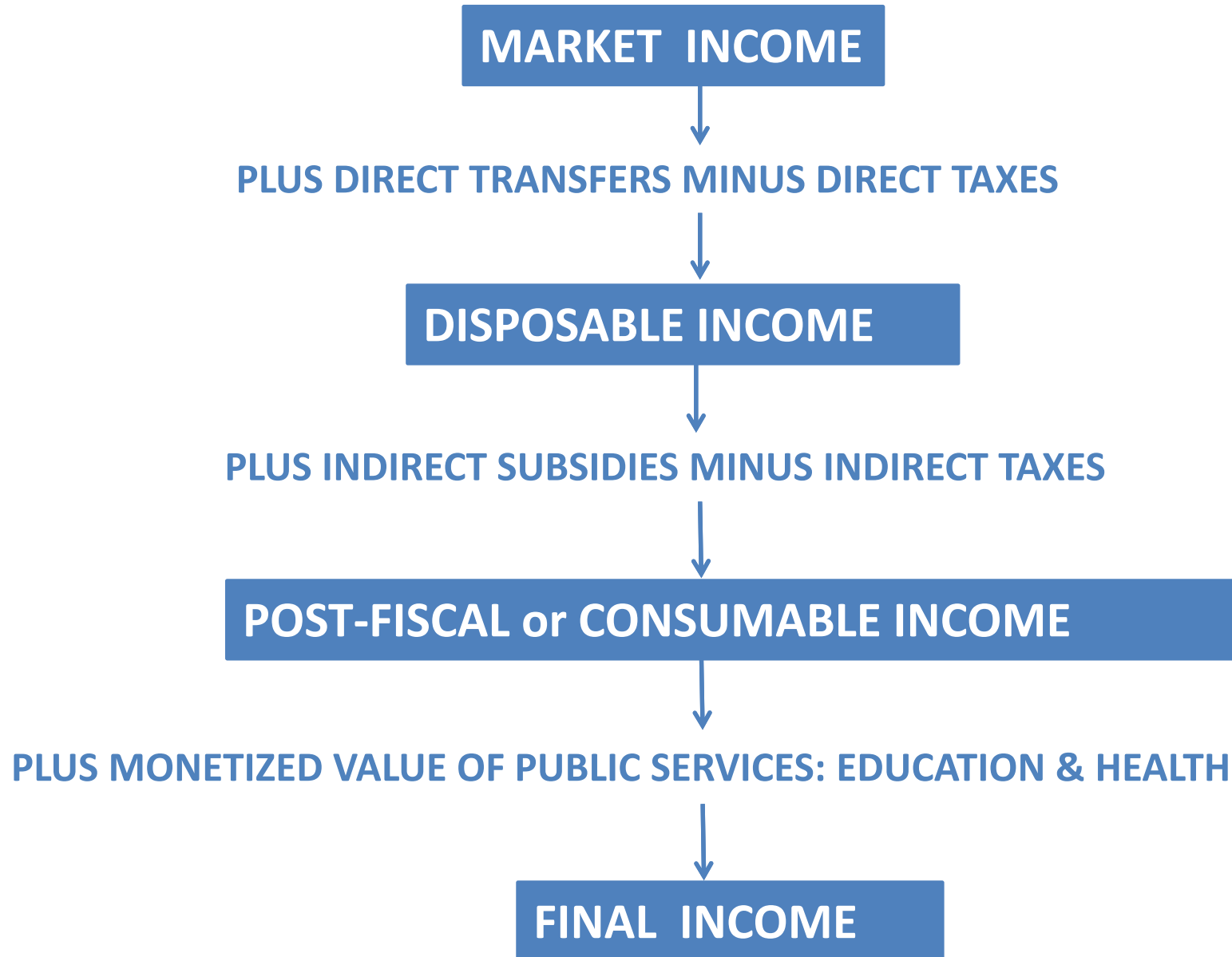
Handbook and  
Diagnostic Questionnaire

**[www.commitmenttoequity.org](http://www.commitmenttoequity.org)**

# CEQ Assessment: Fiscal Incidence Analysis



# CEQ Assessment: Income Concepts



**Fiscal Policy, Inequality and Poverty in  
Middle Income Countries:  
Brazil, Chile, Colombia, Indonesia,  
Mexico, Peru and South Africa**

## Based on:

- 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.

## 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. **Colombia (2010, I): Melendez, Marcela and Nora Lustig. 2014. CEQ Masterworkbook, Tulane University (November 21, 2014)**
5. **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)



7. **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.
8. **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)
9. **Ethiopia (2010/11; C):** Tassew Woldehanna, Ruth Hill, Gabriela Inchauste, EyasuTsehay, and Nora Lustig. 2014. Chapter 5, Ethiopia Poverty Assessment, World Bank (April 30, 2014)
10. **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)
11. **Indonesia (2012; C) :** Jon Jellema and Matthew Wai-Poi. 2014. CEQ Master Workbook, Tulane University and The World Bank (February 18, 2014)
12. **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)

- 13. 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)
- 14. South Africa (2010; I):** 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. (May 5, 2014)
- 15. United States (2011; I):** Higgins, Sean, Nora Lustig, Whitney Ruble and Timothy Smeeding (forthcoming) *Comparing the Incidence of Taxes and Social Spending in Brazil and the United States*, Review of Income and Wealth
- 16. 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)

# Household Surveys Used in Country Studies

1. **Armenia:** Integrated Living Conditions Survey, 2011 (I)
2. **Bolivia:** Encuesta de Hogares, 2009 (I)
3. **Brazil:** Pesquisa de Orçamentos Familiares, 2009 (I)
4. **Chile:** Encuesta de Caracterización Social (CASEN), 2009 (I)
5. **Colombia:** Encuesta de Calidad de Vida, 2010 (I)
6. **Costa Rica:** Encuesta Nacional de Hogares, 2010 (I)
7. **Ecuador:** Encuesta Nacional de Ingresos y Gastos de los Hogares Urbano y Rural, 2011-2012 (I)
8. **El Salvador:** Encuesta De Hogares De Propósitos Múltiples, 2011 (I)
9. **Ethiopia:** Ethiopia Household Consumption Expenditure Survey and Ethiopia Welfare Monitoring survey, 2011 (C)
10. **Guatemala:** Encuesta Nacional de Ingresos y Gastos Familiares, 2010 (I)
11. **Indonesia:** Survei Sosial-Ekonomi Nasional, 2012 (C)
12. **Mexico:** Encuesta Nacional de Ingreso y Gasto de los Hogares, 2010 (I)
13. **Peru:** Encuesta Nacional de Hogares, 2009 (I)
14. **South Africa:** Income and Expenditure Survey and National Income Dynamics Study, 2010-2011 (I)
15. **Uruguay:** Encuesta Continua de Hogares, 2009 (I)

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

**Table 1: Inequality and poverty measures 1997-2012**

		2001	2003	2008	2010	2012
<b>Inequality measures</b>						
Gini		0.565	0.543	0.558	0.553	0.534
Theil		0.676	0.596	0.651	0.648	0.580
Ratio p90/p10		12.8	11.6	12.7	12.0	11.2
<b>Poverty measures</b>						
2.5 PPP	Headcount Index	39.0	31.1	24.4	19.6	17.5
	Poverty gap	18.6	12.6	10.0	7.4	6.7
	Squared poverty gap	12.3	7.2	5.8	4.1	3.8
4 PPP	Headcount Index	60.3	52.0	41.6	36.5	32.9
	Poverty gap	30.6	23.7	18.8	15.2	13.7
	Squared poverty gap	20.1	14.2	11.2	8.6	7.9

Source: SEDLAC (CEDLAS and World Bank) consulted in July 2014. Poverty lines are in daily purchasing power dollars of 2005

# Measuring the Social State

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

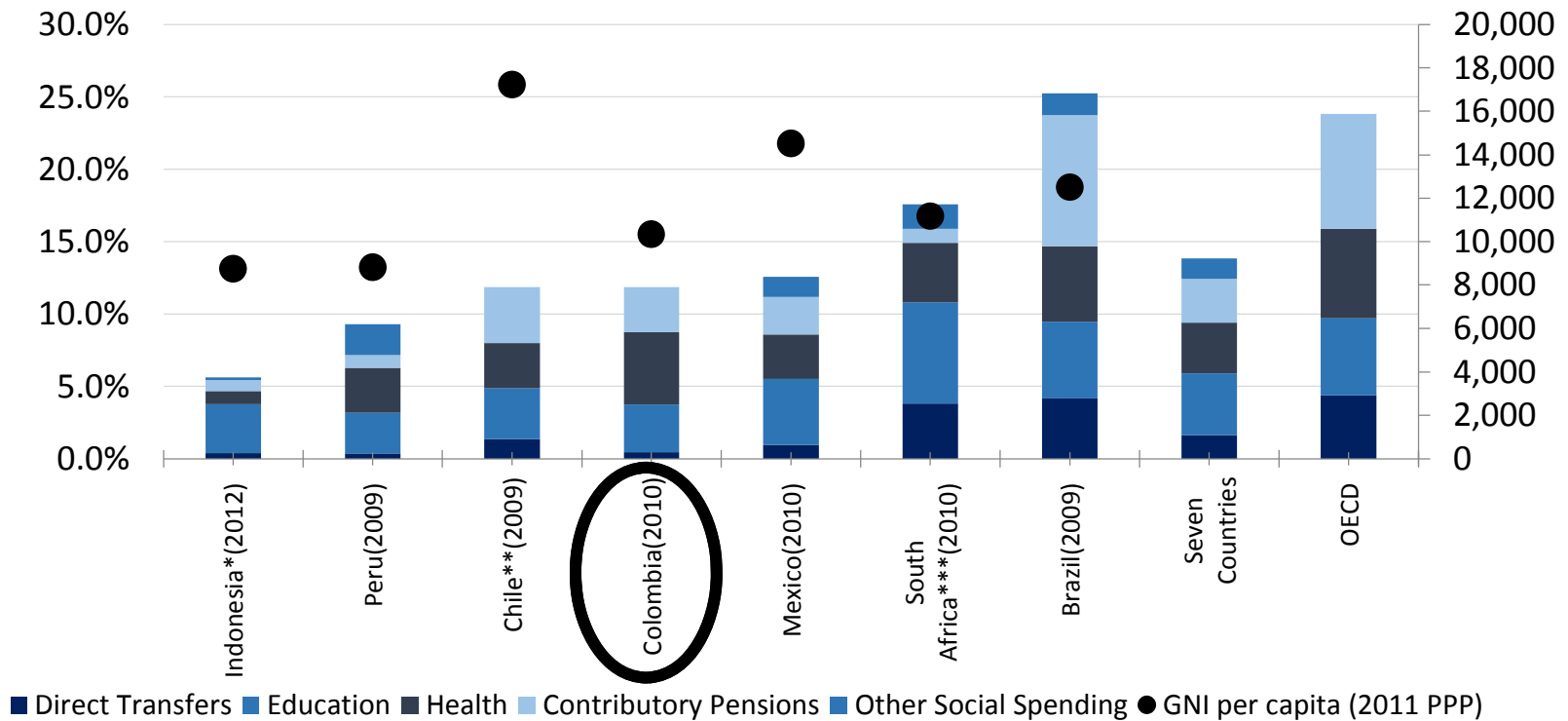
- The share of total income devoted to social spending and how it is financed
- How equalizing and pro-poor net spending is
- Who pays for what the government spends

# **Size and Composition of Government Social Spending and Revenues**

**Figure 1: Size and composition of government budgets (circa 2010)**

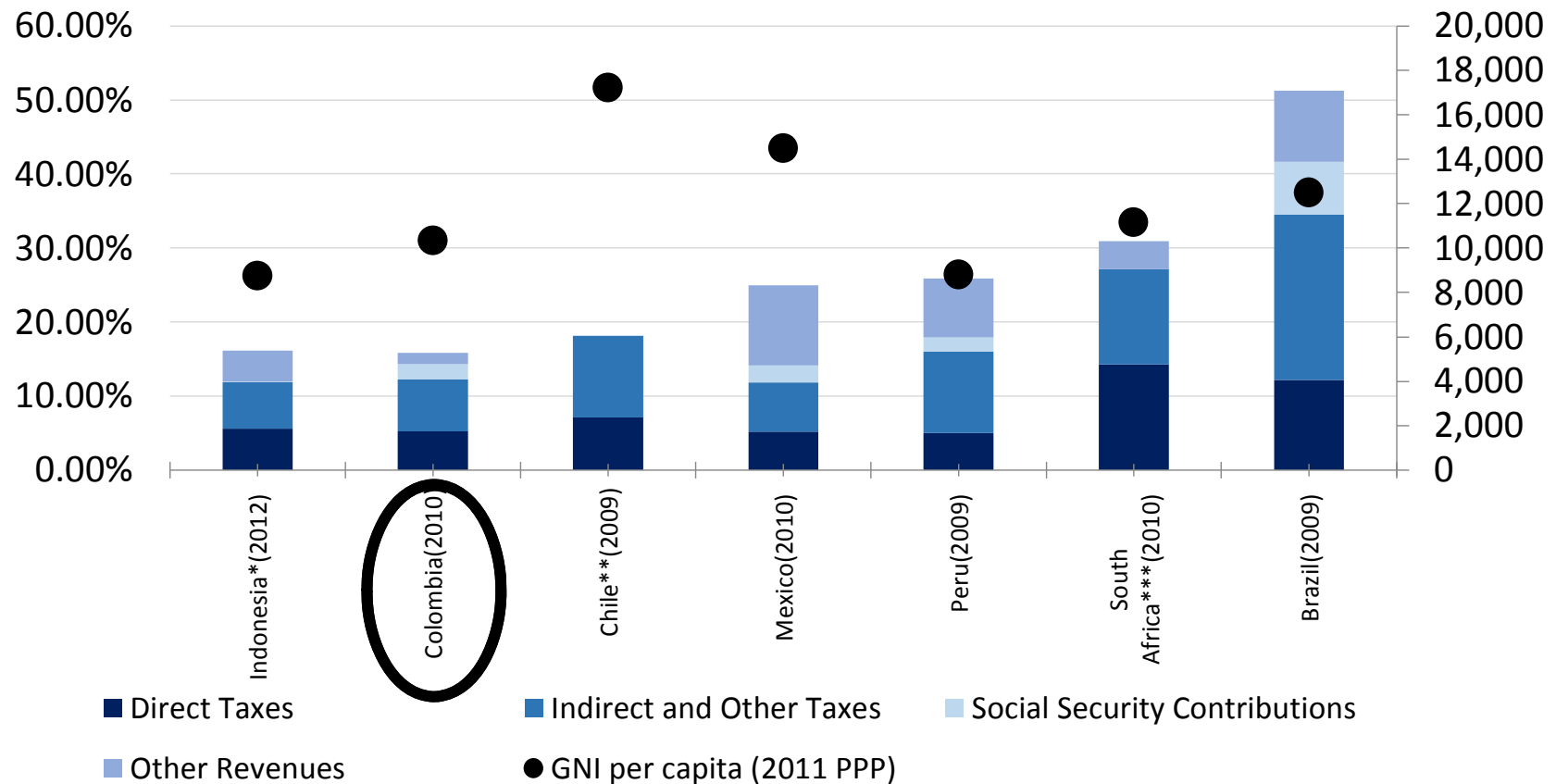
Panel a: Composition of Social Spending as a Share of GDP

(ranked by social spending/GDP)



## Panel b: Composition of Total Government Revenues as a Share of GDP

(ranked by total government revenue/GDP)

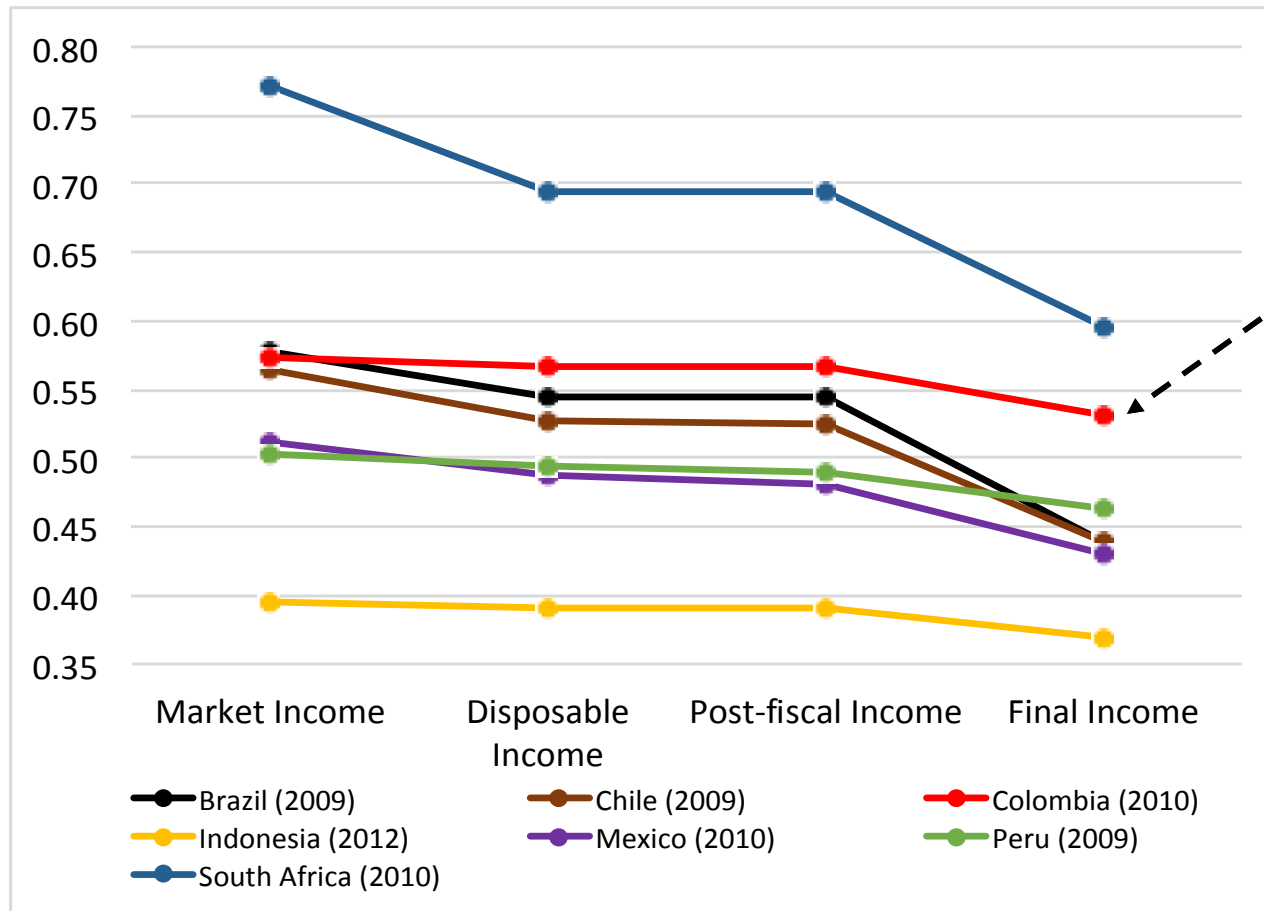




# **Fiscal Policy and Inequality**

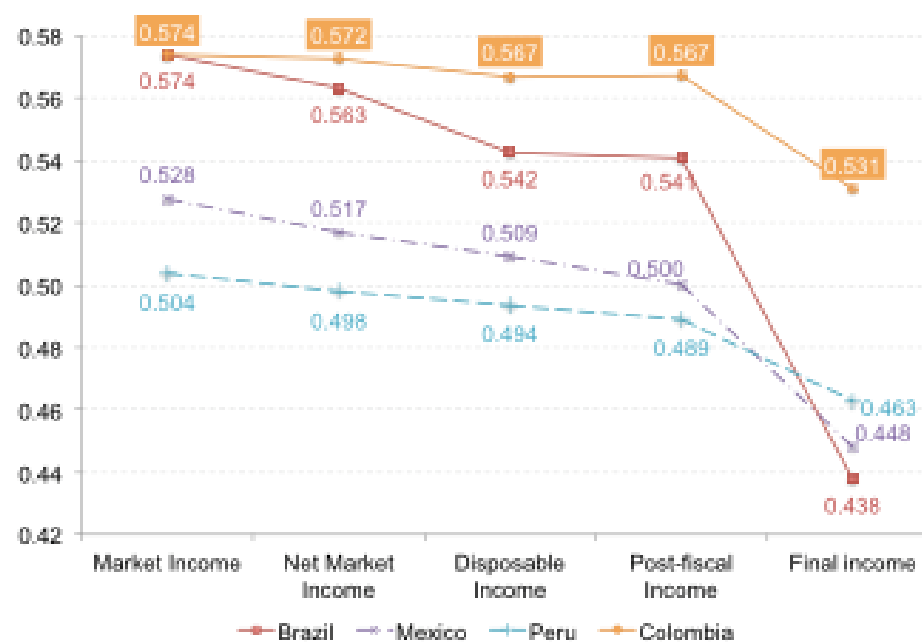
# Fiscal Redistribution: Brazil, Chile, Colombia, Indonesia, Mexico and South Africa

Gini Coefficient, circa 2010



Source: Lustig (2015a)

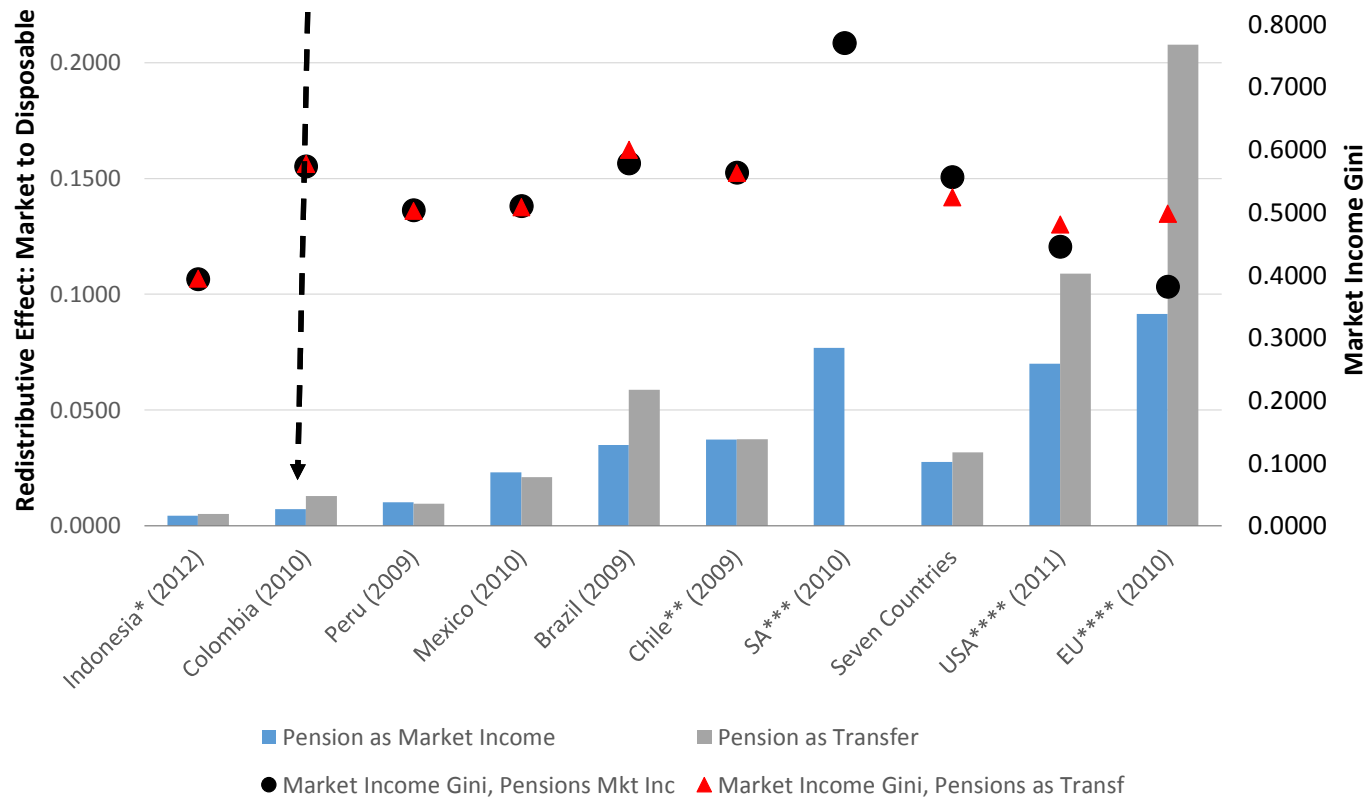
**Figure 1: Gini coefficient of each income concept: Brazil (2009), Colombia (2010), Mexico (2009) and Peru (2009)**



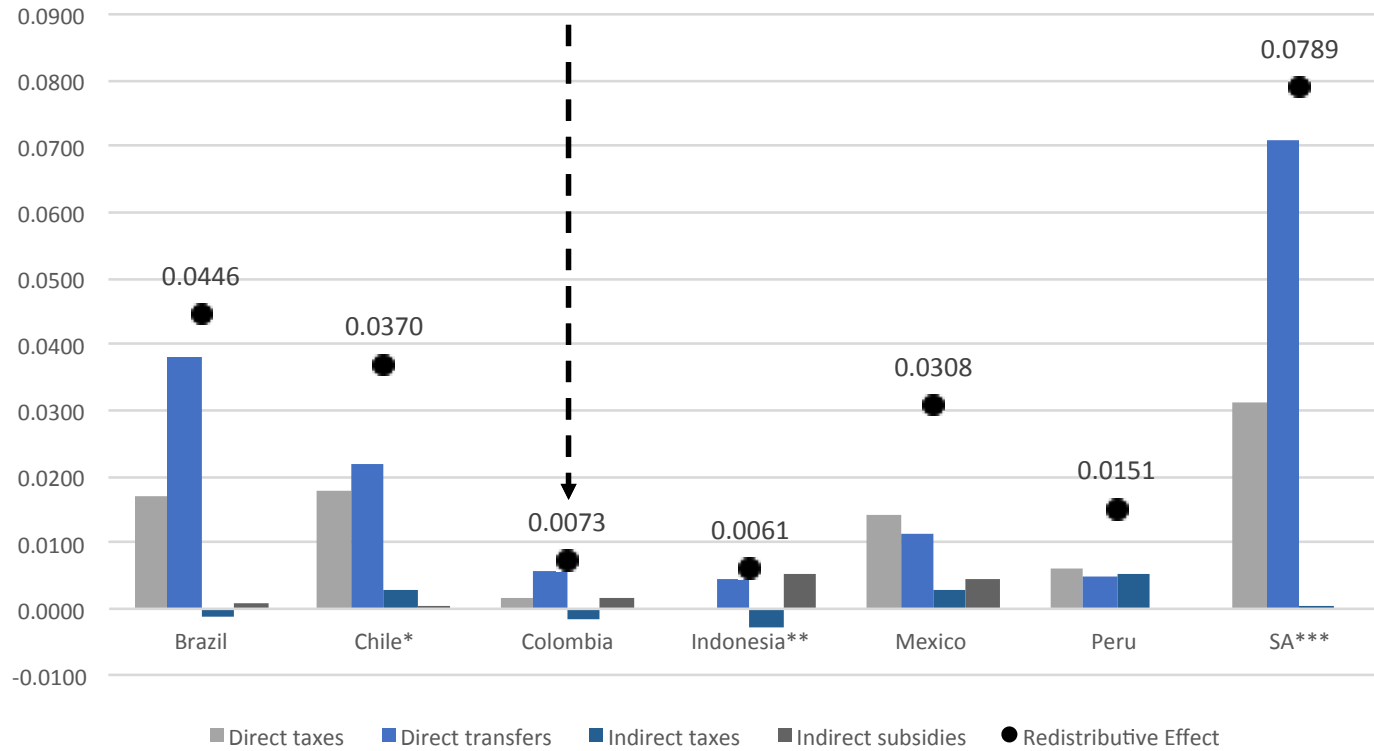
Source: Brazil: Higgins and Pereira (2014), Colombia: Lustig and Melendez (2014), Mexico: Scott (2014), Peru: Jaramillo (2014). For definitions of income concepts, see Lustig and Higgins (2013).  
 Note: In parenthesis year of household survey.

## Redistributive Effect: Brazil, Chile, Colombia, Indonesia, Mexico, Peru, South Africa EU and the United States

(Change in Gini Points: Market to Disposable Income; circa 2010)



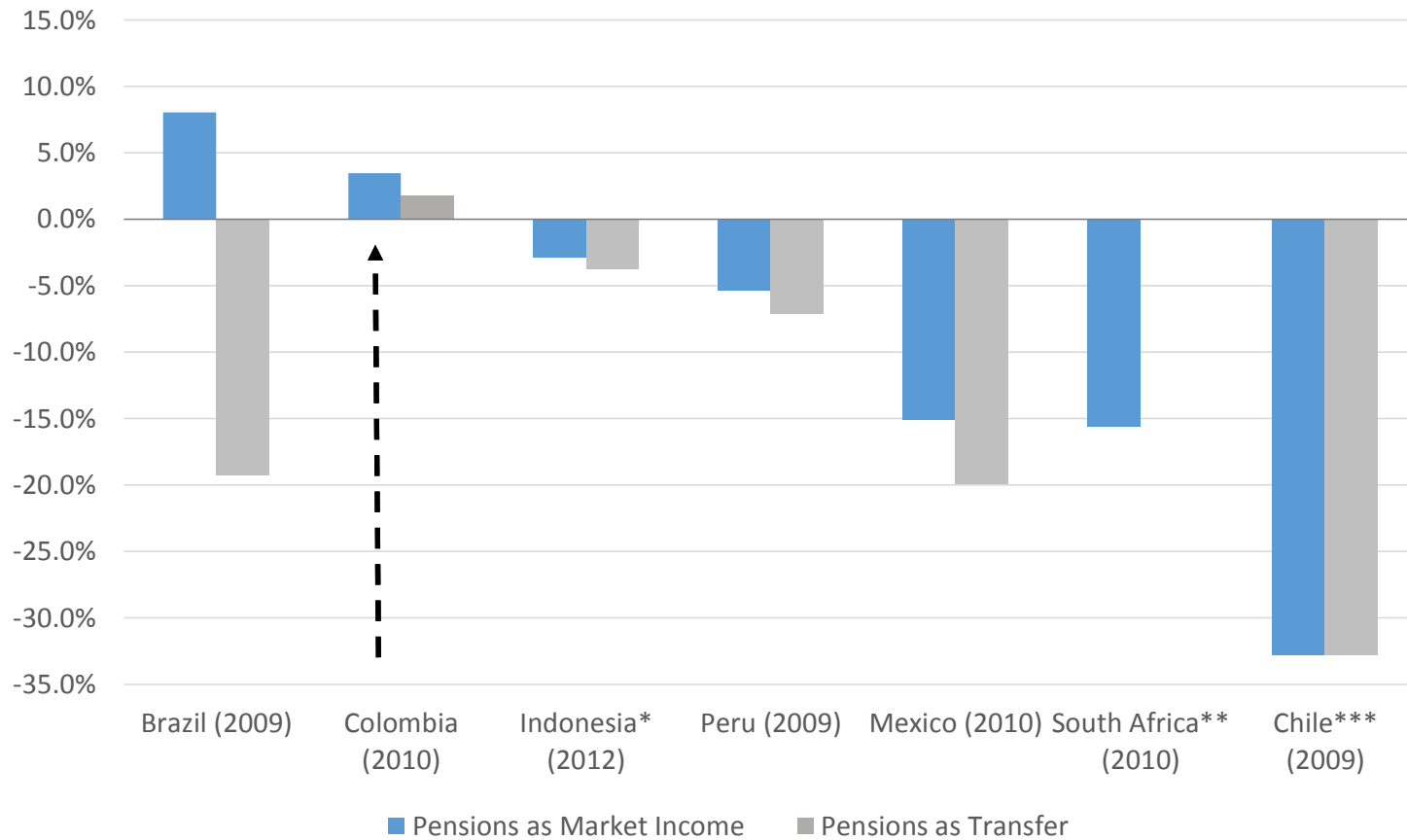
## Redistributive Effect from Market to Post-Fiscal



# **Fiscal Policy and Poverty Reduction**

## Fiscal Policy and Poverty Reduction (circa 2010)

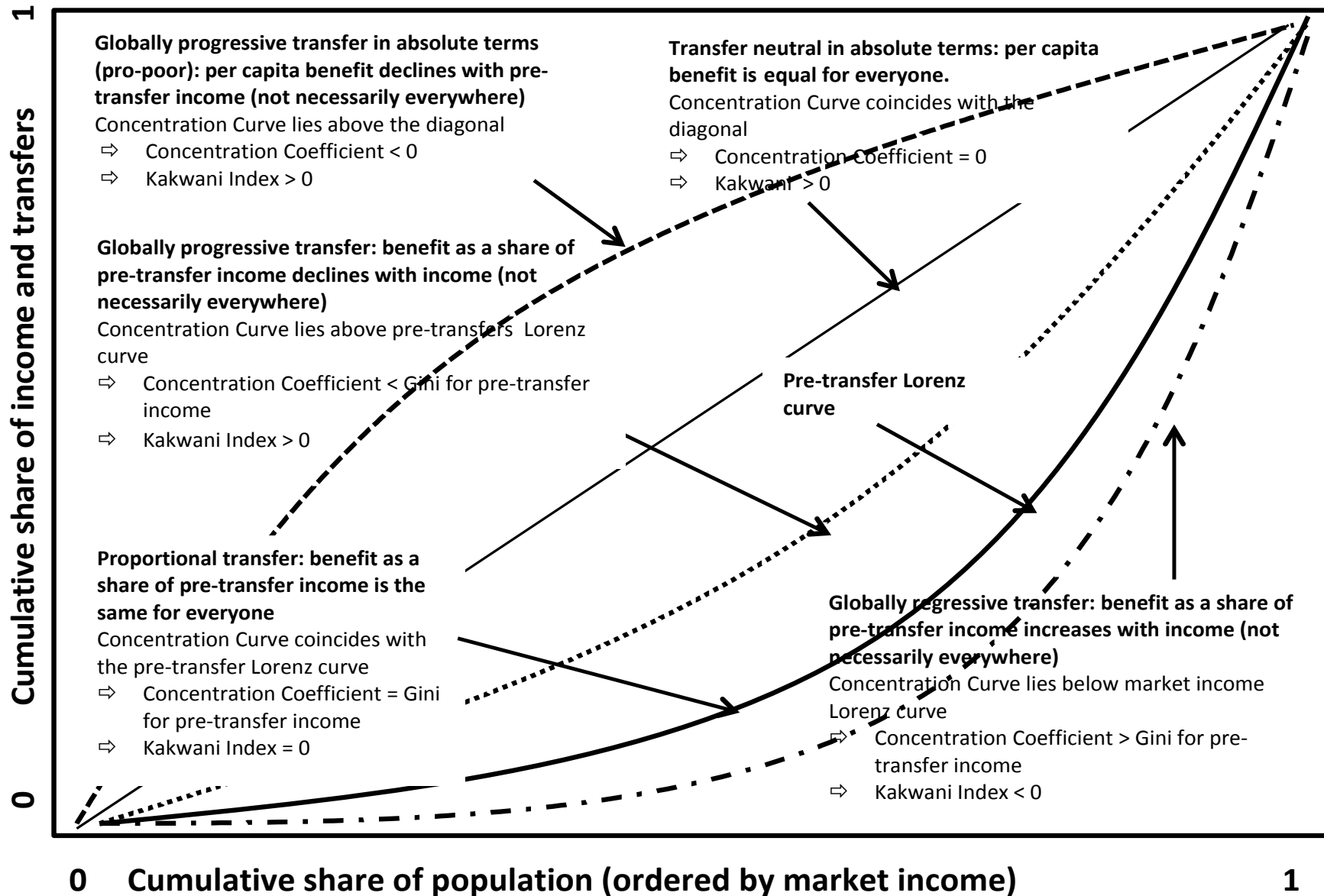
(Change in Headcount Ratio from Market to Post-fiscal Income for Pensions in Market Income and Pensions in Transfers; in %) <sup>a</sup>



# **Spending on Education and Health: How Pro-poor?**



# Progressivity of Transfers: A Diagrammatic Representation



**Table 7: Concentration Shares for Top Decile and Bottom Forty and Twenty Percent: Brazil, Colombia, Mexico and Peru**

	Market Income	Direct Taxes and Contributions	Flagship CCT	All Direct Transfers	Indirect Subsidies	Indirect Taxes	In-kind Education	In-kind Health	All Transfers (excluding all Taxes)	All Transfers (excluding all Taxes) plus Indirect Subsidies	All Taxes (Direct and Indirect)	Final Income
<b>BRAZIL<sup>1</sup></b>												
<b>(2009)</b>												
Top 10	45.3%	66.4%	0.3%	16.4%	3.2%	41.1%	7.3%	2.0%	8.1%	8.1%	49.2%	36.0%
Bottom 40	8.5%	3.0%	85.7%	39.4%	60.5%	11.2%	52.1%	45.6%	46.3%	46.4%	8.7%	17.1%
Bottom 20	2.4%	0.6%	57.3%	22.0%	33.4%	3.8%	29.1%	21.8%	24.5%	24.6%	2.9%	7.3%
<b>COLOMBIA</b>												
<b>(2010)</b>												
Top 10	46.4%	53.2%	0.7%	2.2%	8.0%	23.9%	5.2%	2.9%	4.4%	4.6%	35.8%	43.7%
Bottom 40	9.5%	3.9%	71.1%	68.8%	34.6%	16.4%	46.3%	57.0%	50.9%	50.2%	12.8%	12.2%
Bottom 20	2.8%	0.7%	42.5%	41.1%	15.7%	6.4%	24.4%	30.9%	27.5%	27.0%	4.9%	4.4%
<b>MEXICO</b>												
<b>(2010)</b>												
Top 10	39.4%	62.2%	0.3%	6.1%	20.4%	39.6%	6.1%	11.0%	7.9%	9.6%	49.8%	34.2%
Bottom 40	11.5%	1.4%	80.9%	63.3%	23.6%	10.2%	45.1%	37.5%	44.2%	41.3%	6.2%	16.1%
Bottom 20	3.5%	0.2%	53.3%	40.6%	9.5%	3.0%	22.7%	18.4%	23.0%	21.1%	1.8%	6.1%
<b>PERU<sup>2</sup></b>												
<b>(2009)</b>												
Top 10	38.3%	91.7%	0.1%	0.7%	none	37.0%	4.0%	14.8%	9.0%	9.0%	45.5%	35.8%
Bottom 40	11.4%	0.0%	90.7%	78.8%	none	9.3%	51.8%	27.1%	41.7%	41.7%	7.8%	13.6%
Bottom 20	3.5%	0.0%	66.3%	49.0%	none	2.3%	26.7%	11.9%	21.3%	21.3%	2.0%	4.8%

Source: Brazil: Higgins and Pereira (2014), Colombia: Lustig and Melendez (2014), Mexico: Scott (2014), Peru: Jaramillo (2014). For definitions of income concepts, see Lustig and Higgins (2013)

Note: In parenthesis year of household survey.

# Progressivity and Pro-poorness of Education and Health Spending. Summary of Results

	Educ&total			Pre\$chool			Primary			Secondary			Tertiary			Health			
	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini	Regressive&CC&& positive&out& higher&han& market& income&Gini	Pro\$poor&CC&& negative	Same&er& capita&or&all& CC&&	Progressive&CC&& positive&out& lower&han& market& income&Gini
Brazil&(2009)	+			+			+			+					+		+		
Chile&(2009)	+			+			+			+					+		+		
Colombia&(2010)	+			+			+			+					+		+		
Indonesia&(2012)		+		na			+				+				+				+
Mexico&(2010)	+			+			+			+					+			+	
Peru&(2009)	+			+			+			+					+				+
South&Africa&(2010)	+			+			+			+					+		+		

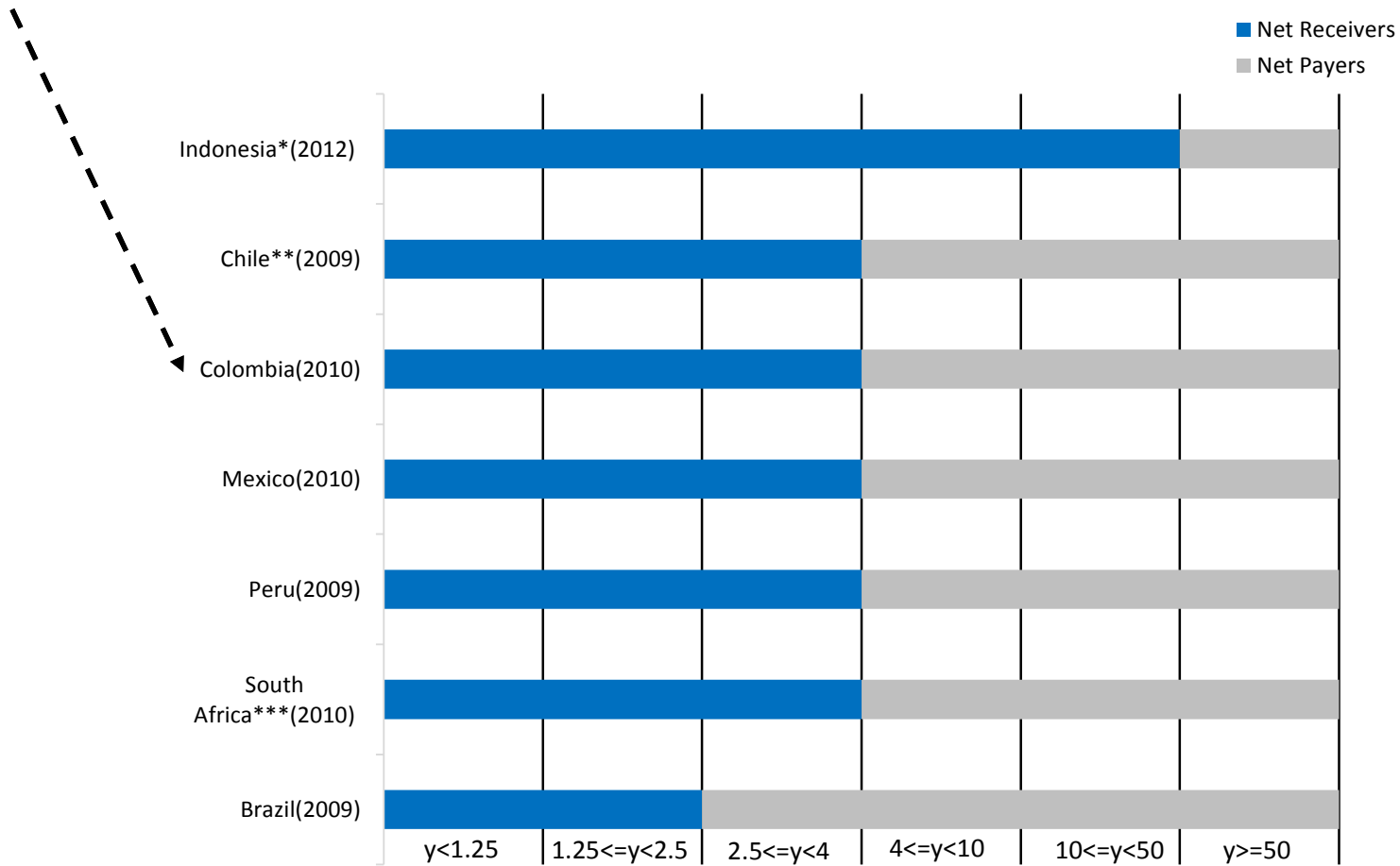
\*CC&& almost equal to market income Gini coefficient

If the Concentration Coefficient is higher or equal to 0.5 but not higher than 0.5, it was considered equal to 0.

**Who pays for what the  
government spends?**

## Net Payers to the Fiscal System (circa 2010)

Panel a: Pensions as Market Income



Source: Lustig (2015b)

# What Type of Social State Emerges from Country Studies Combined?

If you cite any of the following slides, please refer to:

Lustig, Nora. 2015b. 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.

# What Kind of Social State in XXI Century?

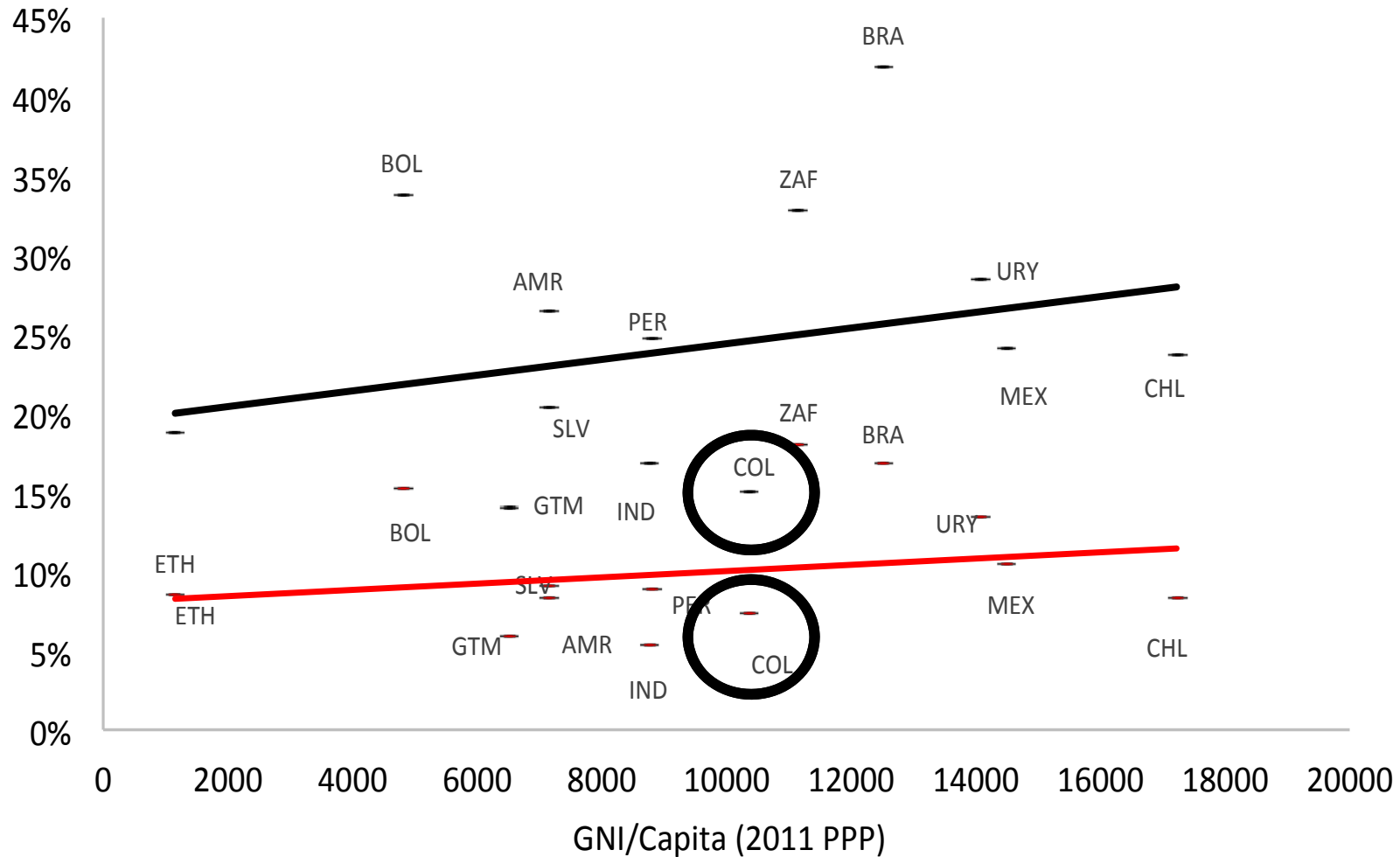
- Lindert (2004)
  - Extent of tax-based redistributive spending depends on democracy, demography and **development**
  - In the past, Robin Hood paradox: more unequal, less redistributive.
- To note: Colombia stands out as an under-performer throughout

# **Do Richer Countries Spend More on the Social State?**

Yes



## Primary and Social Spending/GDP vs GNI/capita



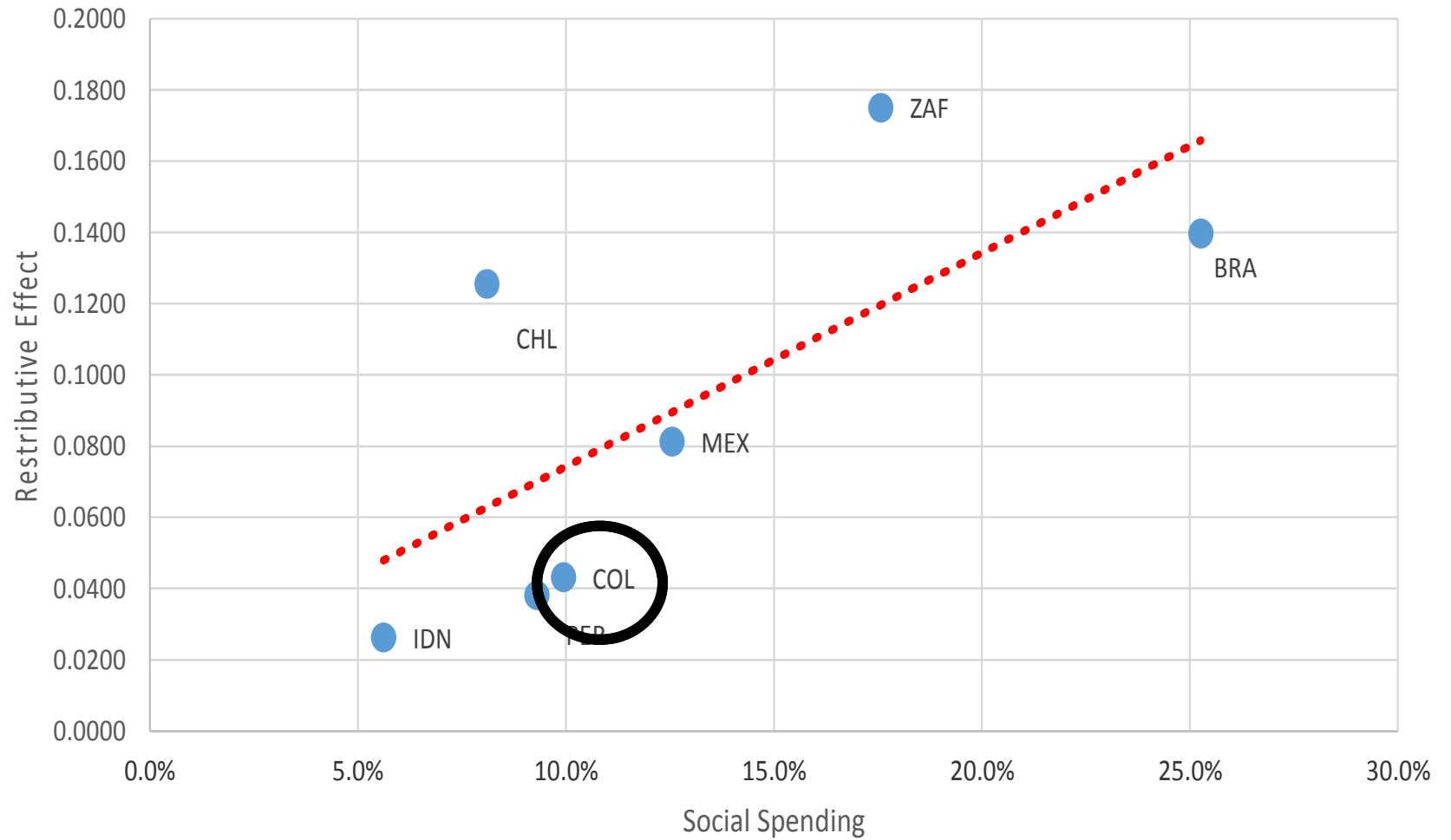
Source: Lustig (2015a)

● Primary Spending/GDP ● Social Spending/GDP

# **Do Countries that Spend More, Redistribute More?**

Yes

Figure 4. Redistribution and social spending, 2010

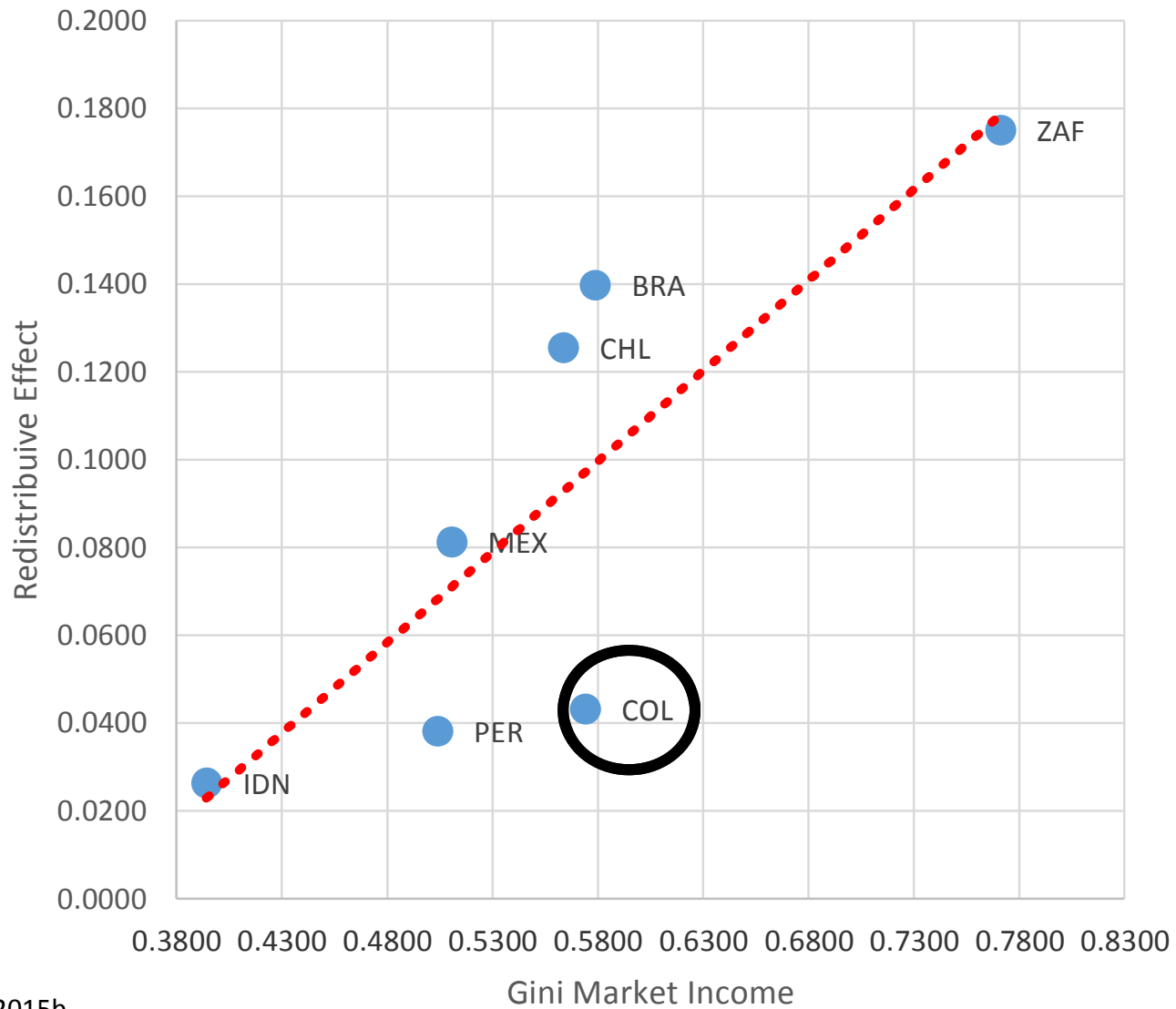


Source: Lustig (2015b)

# **Do More Unequal Countries Redistribute More?**

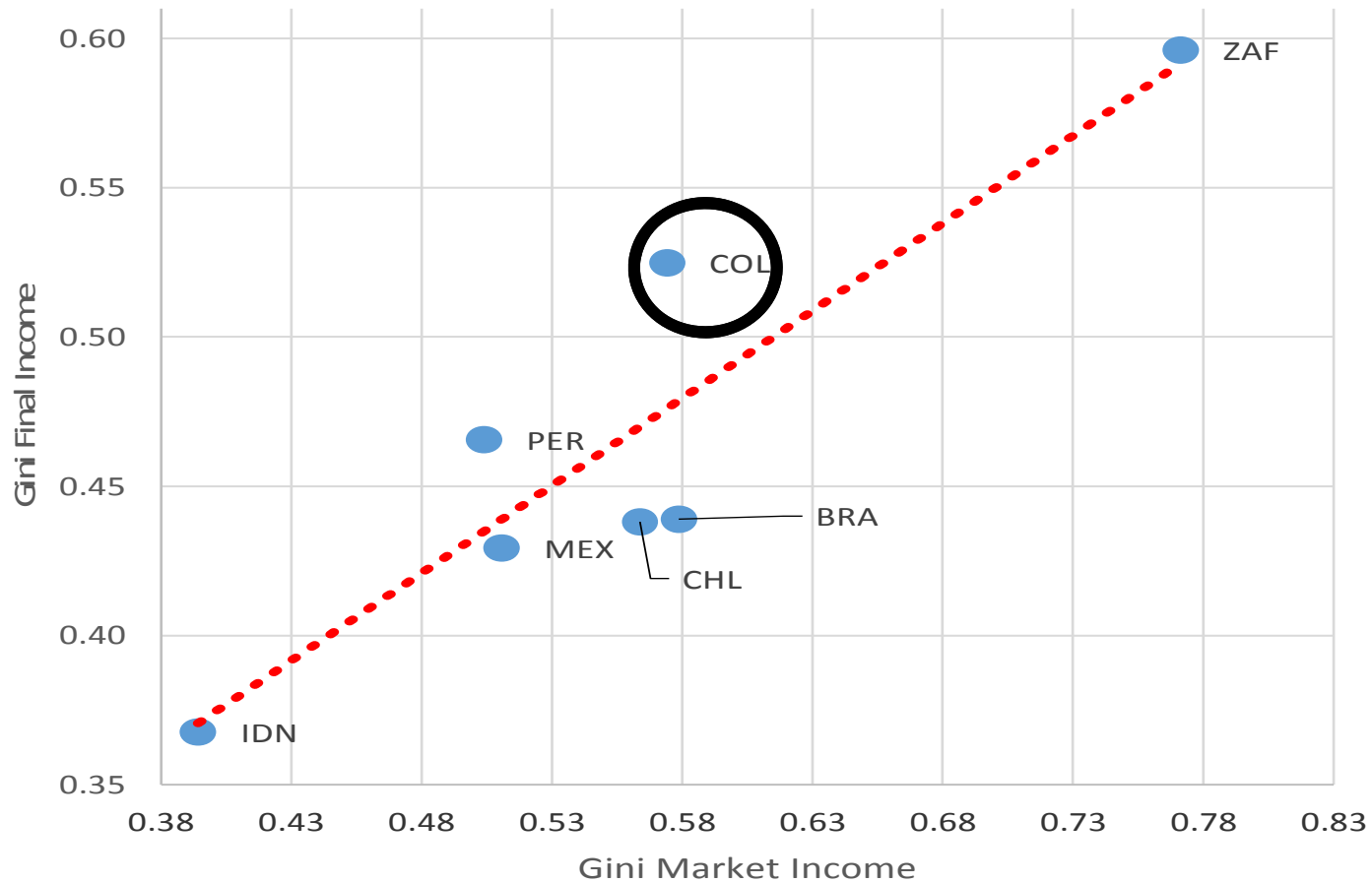
Robin Hood is With Us!

## A. Redistribution and market income inequality



Source: Lustig (2015b)

## B. Final income inequality and market income inequality



Source: Lustig (2015b)

# References

- Duclos, Jean-Yves and Abdelkrim Araar. 2007. *Poverty and Equity: Measurement, Policy and Estimation with DAD* (Vol. 2). Springer. Chapters 7 and 8. (available online)
- Higgins, Sean and Nora Lustig. 2015. [Can a poverty-reducing and progressive tax and transfer system hurt the poor?](#) ECINEQ Working Paper No. 363, April.
- Lambert, Peter J. (2001). *The Distribution and Redistribution of Income: A Mathematical Analysis*. Manchester University Press. Third Edition. Chapter 11. (not available online)
- Lindert, Peter (2004). *Growing Public*, Cmbridge University Press
- Lustig, Nora, Ali Enami and Rodrigo Aranda. “The Analytics of Fiscal Redistribution.” Chapter in Lustig, Nora, editor, Commitment to Equity Handbook: Estimating the Redistributive Impact of Fiscal Policy. , Tulane University and the World Bank (Forthcoming)
- 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.
- Lustig, Nora. 2015b. 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.
- Lustig, Nora. 2015c. “El impacto del sistema tributario y el gasto social en la distribución del ingreso y la pobreza en América Latina: Bolivia, Brasil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, México, Perú y Uruguay.” Informe para la División de Administración Fiscal y Municipal del Banco Interamericano de Desarrollo.
- Lustig, Nora, editor. 2016. Commitment to Equity Handbook: Estimating the Redistributive Impact of Fiscal Policy. (Forthcoming)
- World Bank. 2014. Ethiopia. Poverty Assessment, Chapter 5. (Based on CEQ Assessment for Ethiopia)

**Thank you!**