



The Impact of the Tax System and Social Spending in Income Redistribution and Poverty Reduction in Latin America

NORA LUSTIG

Tulane University

CLAUDINEY PEREIRA

Arizona State University

Received: November, 2015

Accepted: August, 2016

Abstract

How much redistribution and poverty reduction is being accomplished through the tax system and social spending in Latin America? This paper summarizes results from applying a comparable fiscal incidence analysis to nine countries: Bolivia, Brazil, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Peru, and Uruguay. Using the Gini coefficient as an indicator, Brazil lowers income inequality through direct taxes and transfers the most and Guatemala lowers it the least. Public spending in education and health have higher equalizing effects than other transfers. Adding the effect of indirect taxes leaves poverty higher than market income poverty in Bolivia, Brazil, and Guatemala.

Key words: fiscal incidence, inequality, poverty, social spending, Latin America

JEL Classification: D31, H22, I38, O54

1. Introduction

Although inequality has been falling since 2000, Latin America is still the most unequal region in the world and poverty rates are high for Latin America's GDP per capita¹. Given these facts, the extent to which governments use fiscal policy to reduce inequality and poverty is of great relevance. This paper summarizes the results of applying a standard benefit-tax incidence analysis to estimate the effect of taxes and social spending on inequality and poverty in nine Latin American countries: Bolivia (Paz Arauco *et al.*, 2014), Brazil (Higgins and Pereira, 2014), Costa Rica (Sauma and Trejos, 2014), Ecuador (Llerena *et al.*, 2014), El Salvador (Beneke *et al.*, 2014), Guatemala (Cabrera *et al.*, 2014), Mexico (Scott, 2014), Peru (Jaramillo, 2014), and Uruguay (Bucheli *et al.*, 2014). Depending on the country, the household surveys utilized in the incidence analysis are for 2009, 2010 2011, 2011-2012.

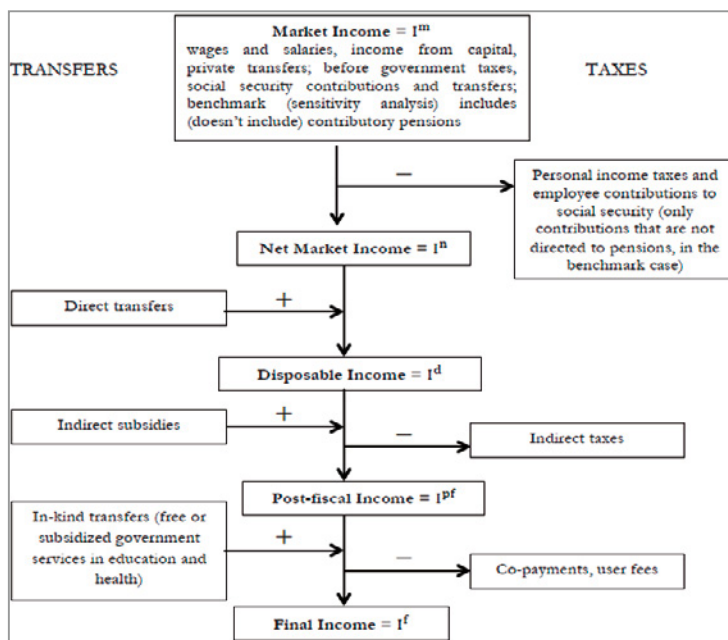
The main contribution of this paper is twofold. First, in contrast to other work, the analysis is comprehensive: it includes the effect of direct taxes, indirect taxes and subsidies, and social spending (that is, cash transfers and the monetized value of public spending on

education and health). Second, the nine studies apply a common methodology (Lustig and Higgins, 2013), so results are comparable across countries. As is common in most benefit-tax incidence analyses², the studies do not incorporate behavioral, lifecycle, or general equilibrium effects. These limitations notwithstanding, they are among the most detailed, comprehensive, and comparable tax-benefit incidence analyses available for Latin American countries to date. In addition, compared to some of the existing publications, reliance on secondary sources is kept to a minimum and it is an effective tool to help governments reviewing tax policies and expenditures programs intended to reduce income inequality and poverty (Martínez-Vázquez, 2001).

2. Concepts, Definitions, and Data

2.1. Market, Net Market, Disposable, Post-fiscal, and Final Income: Definitions and Measurement

We use five income concepts in our incidence analyses: market, net market, disposable, post-fiscal, and final income³. The categories included in each concept as shown in Diagram 1. Market income is total current income before direct taxes, equal to the sum of gross (pre-tax) wages and salaries in the formal and informal sectors (also known as earned income); income from capital (dividends, interest, profits, rents, etc.) in the formal and informal sectors (excludes capital gains and gifts); autoconsumption (except in the case of Bolivia); imputed rent for owner-occupied housing; private transfers (remittances and other private transfers such as alimony); and old-age and other pensions from the contributory social security system. Net market income equals market income minus direct personal income taxes on all income sources (included in market income) that are subject to taxation and all contributions to social security except for the portion going towards pensions⁴. Disposable income is equal to the sum of net market income plus direct government transfers (mainly cash transfers but can include food transfers). Post-fiscal income is defined as disposable income plus indirect subsidies minus indirect taxes (*e.g.*, value added tax, sales tax, etc.). Final income is defined as post-fiscal income plus government in-kind transfers in the form of free or subsidized services in education, health, and housing minus co-payments or user fees⁵.

Diagram 1. Definitions of Income Concepts

Note: In some cases we also present results for “final income” which is defined as disposable income plus in-kind transfers minus co-payments and user fees.

Source: Lustig and Higgins (2013).

In the fiscal incidence literature, pensions from contributory systems have been sometimes treated as part of market income and other times as government transfers. Arguments exist both for treating contributory pensions as part of market income because they are deferred income (Breceda, Rigolini, and Saavedra, 2008; Immervoll *et al.*, 2009) and for treating them as a government transfer, especially in systems with a large subsidized component (Goñi, López, and Servén, 2011; Immervoll *et al.*, 2009; Lindert, Skoufias, and Shapiro, 2006; Silveira *et al.*, 2011). Since this is an unresolved issue, in our study we defined a benchmark case in which contributory pensions are part of market income. We also performed a sensitivity analysis where pensions are classified under government transfers. The results presented here are for the benchmark analysis. More detailed results of this sensitivity analysis can be found in the Statistical appendix, available upon request.

More detailed definitions of the income concepts are as follows:

A) Market income is defined as:

$$I^m = W + IC + AC + IROH + PTran + SSP \text{ (benchmark)}$$

$$I^{ms} = W + IC + AC + IROH + PTran \text{ (sensitivity analysis)}$$

Where,

I^m, I^{ms} = market income in benchmark and sensitivity analysis, respectively.

W = gross (pre-tax) wages and salaries in formal and informal sector; also known as earned income.

IC = income from capital (dividends, interest, profits, rents, etc.) in formal and informal sector; excludes capital gains and gifts.

AC = autoconsumption; also known as self-production.

$IROH$ = imputed rent for owner occupied housing; also known as income from owner occupied housing.

$PTran$ = private transfers (remittances and other private transfers such as alimony).

SSP = retirement pensions from contributory social security system.

B) Net Market income is defined as:

$$I^n = I^m - DT - SSC \text{ (benchmark)}$$

$$I^{ns} = I^{ms} - DT - SSC^s \text{ (sensitivity analysis)}$$

Where,

I^n, I^{ns} = net market income in benchmark and sensitivity analysis, respectively.

DT = direct taxes on all income sources (included in market income) that are subject to taxation.

SSC, SSC^s = respectively, all contributions to social security except portion going towards pensions⁸ and all contributions to social security without exceptions.

C) Disposable income is defined as:

$$I^d = I^n + GT \text{ (benchmark)}$$

$$I^{ds} = I^{ns} + GT + SSP \text{ (sensitivity analysis)}$$

Where,

I^d, I^{ds} = disposable income in benchmark and sensitivity analysis, respectively.

GT = direct government transfers; mainly cash but can include transfers in kind such as food.

SSP = retirement pensions from contributory social security system.

D) Post-fiscal income is defined as:

$$I_{pf} = I^d + IndS - IndT \text{ (benchmark)}$$

$$I_{pfs} = I^{ds} + IndS - IndT \text{ (sensitivity analysis)}$$

Where,

Ip_f, Ip_{fs} = post-fiscal income in benchmark and sensitivity analysis, respectively.

IndS = indirect subsidies (*e.g.*, lower electricity rates for small-scale consumers).

IndT = indirect taxes (*e.g.*, value added tax or VAT, sales tax, etc.).

E) Final income is defined as:

If = Ip_f + Ink_{indT} – CoPay_m (benchmark)

If_s = Ip_{fs} + Ink_{indT} – CoPay_m (sensitivity)

Where,

If, If_s = final income in benchmark and sensitivity analysis, respectively.

Ink_{indT} = government transfers in the form of free or subsidized services in education and health; urban and housing.

CoPay_m = co-payments, user fees, etc., for government services in education and health.

When constructing the income definitions, we make the following methodological assumptions:

Definition of Household.

We adopt the definition of a household used by SEDLAC, which excludes external members of the household: boarders (*inquilinos* in Spanish and *pensionistas* in Portuguese), and domestic servants and their families are not considered part of the household, and must be dropped from the data set. This definition of household is used to calculate household income. It is important to note, however, that the poverty and inequality calculations will be in terms of individuals (for example, the incidence of poverty will equal the proportion of individuals whose income is below the poverty line), unless otherwise specified.

Adult Equivalence and Economies of Scale.

We use household per capita income, and thus does not adjust for adult equivalence or economies of scale within households. For each income concept, total household income for the respective concept is divided by the total number of members in the household.

Missing or Zero Incomes.

When a survey respondent reports receiving a certain income source but does not report the value or reports a value of zero as their income from that source, we adopt the convention used by SEDLAC: Missing and zero incomes are regarded as zero, unless the household head's primary income source is missing or zero, in which case the household is excluded from the data (CEDLAS and World Bank, 2012).

Income Underreporting (Scaling Up).

It is well-known that household income surveys tend to understate “true” income. This has several possible causes: people might underreport their own incomes (on purpose or by accident), surveys might fail to ask adequate questions to capture certain categories of income or might have too long of a recall period, and society’s richest members are usually not captured by household surveys (especially under conditions of high inequality when a large share of national income is concentrated on a small fraction of the population). For this reason, some studies scale up household survey income to match a comparable definition of income in national accounts before estimating poverty.

However, Deaton (2005) argues that the methodologies of computing income in national accounts should not be used when estimating poverty because they are upward-biased and not designed to generate poverty statistics. Thus, we do not scale up income by national accounts when estimating poverty indicators.

Notwithstanding, when calculating inequality indicators or the incidence of public transfers over the whole distribution, failing to adjust for income underreporting would necessarily overestimate the redistributive effect of in-kind transfers, as the monetary value of the transfers received by households is obtained from the budgetary cost of providing these transfers as reported in the public component of national accounts.

2.2. Tax Shifting Assumptions

Consistent with other conventional tax incidence analyses, here we assume that the economic burden of direct personal income taxes is borne by the recipient of income. The 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, in essence, they imply that labor supply is perfectly inelastic and consumers have perfectly inelastic demands for goods and services. In practice they provide a reasonable approximation.

Evasion of direct income and payroll taxes is taken into account in the analysis by assuming that individuals who do not participate in the contributory social security system do not pay income or payroll taxes (Brazil’s survey includes a question on tax payments so tax evasion is assumed to be as reported in the survey). In the case of indirect (consumption) taxes, assumptions to take evasion into account varied.

In Bolivia, it was assumed that purchases in informal sector establishments avoid indirect taxes both in urban and rural areas, but the rest of rural purchases include indirect taxes. In Brazil, Ecuador, and El Salvador the indirect tax rate for each type of good or service was obtained estimating the effective tax rates. Costa Rica estimates used a secondary source (Trejos, 2009). In Guatemala, goods sold in informal markets like unprocessed food in rural areas and in some small stores in urban areas (*e.g.*, community markets, street vendors and local groceries) and some private services (*i.e.* gardening and house repair) were excluded.

In Mexico, it was assumed that all purchases in the rural areas and in informal sector urban establishments avoid indirect taxes, but the study also includes results of a sensitivity analysis assuming no informality in indirect taxes. In Peru, it was assumed that all purchases made in villages with no more than 100 households and in informal sector establishments, both urban and rural, avoid indirect taxes. In Uruguay, the legal rate of VAT was applied to every purchase regardless of place of purchases or region (rural vs. urban).

2.3. Incidence of Public Services

The approach to estimate the incidence of public spending on education and health followed here is the so-called “benefit or expenditure incidence” or “government cost” approach. In essence, we use per beneficiary input costs obtained from administrative data as the measure of average benefits. This approach —also known as the “classic” or “nonbehavioral 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 full cost?

2.4. Allocating Taxes and Transfers at the Household Level

Information on direct and indirect taxes, transfers in cash and in-kind, and subsidies cannot always be obtained directly from household surveys. When it can be obtained, we call this the direct identification method. When the direct method is not feasible, one can use the inference, simulation, or imputation methods, or an alternate source. As a last resort, one can use secondary sources. The methods one can use to allocate taxes and transfers are described in detail in Lustig and Higgins (2013).

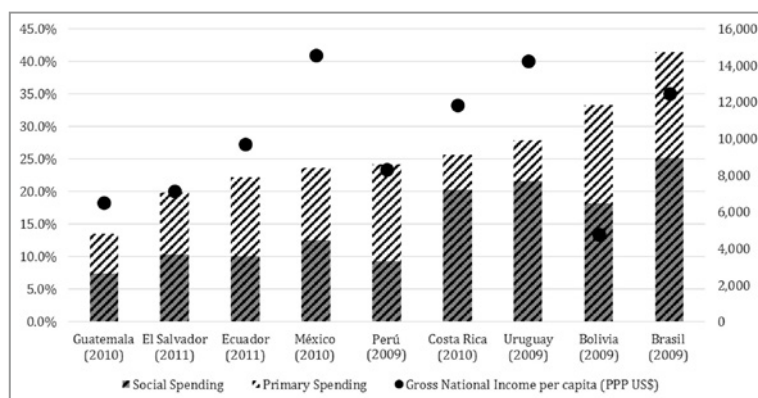
The one most frequent method was direct identification, especially for cash transfers. Direct personal income taxes and indirect consumption taxes were simulated (including assumptions for evasion) in all cases except for direct taxes in Brazil. In-kind transfers were imputed using the government cost approach.

3. Main Results

Figures 1, 2, and 3 present taxes and spending as a share of GDP and identifies which taxes and transfer programs were included in the incidence analysis. One would expect that the redistributive and poverty reductions efforts to depend on size and composition of social spending. As noted by Lustig *et al.* (2013), one cannot really speak of a “Latin American” prototype.

As one can see, the nine countries are quite heterogeneous in terms of government size as well as spending and revenue-collection patterns. Primary government spending as a share of GDP (Figure 1) in Brazil (41.4 percent), for example, is similar to that found in OECD⁶ countries while in Mexico (23 percent) and Peru (24.2 percent) the ratios are half as large and only 13.6 percent in Guatemala. The average is 25.5 percent of GDP. Thus, in the cases of Brazil —and to a lesser extent in Bolivia, Costa Rica, and Uruguay— the size of the government budget is not a constraint on redistributive and poverty-reducing interventions. In the cases of Ecuador, El Salvador, Guatemala, Mexico and Peru, raising enough revenue to increase social spending as a percentage of GDP would be a relevant option. Social spending is also heterogeneous. It varies from 7.4 percent in Guatemala to 25.3 percent in Brazil. Direct transfers account for 1.6 percent of GDP, on average, and Brazil is the country that spends more, 4.2 percent, compared to just 0.4 percent of GDP in Peru (Figure 2). Contributive pensions varies from 9.1 percent in Brazil to 0.5 percent of GDP in Guatemala. On education, Bolivia is the country that spends more as proportion of its GDP (8.3 percent) and Guatemala is on the lower bound with just 2.6 percent of GDP. Finally, on health spending, countries spend 3.8 percent on average with Brazil spending more (5.8 percent) and again Guatemala is spending less (2.4 percent) than any other country in our study.

Figure 1. Primary and Social Spending (ordered by primary spending/GDP)



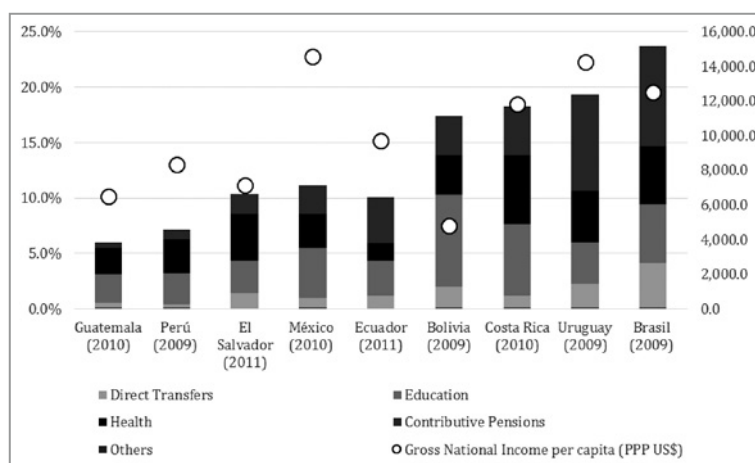
Notes:

1. Household survey year in parenthesis.
2. Primary spending is equal to the total spending minus internal and external service debt. Social Spending includes all direct transfers, education and health expenditures based on administrative data.
3. Gross National Income per capita (2011 PPP US\$), World Development Indicators, World Bank. Searched on June 29, 2015, World Bank. <http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>

Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

In Figure 3, we present revenue collect patterns. On average, direct taxes, social security contributions, indirect taxes and other sources represent respectively 5.8, 26.6, 13 and 4.9 percent of GDP. Indirect taxes and other sources are the most important source of revenue, except in Ecuador and Mexico that have most of their revenues from other sources.

Figure 2. Composition of Social Spending (ordered by primary spending/GDP)

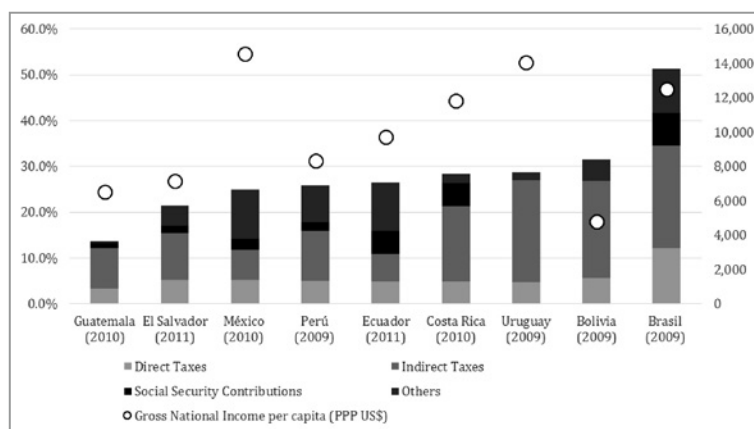


Notes:

1. Household survey year in parenthesis.
2. Primary spending is equal to the total spending minus internal and external service debt. Social Spending includes all direct transfers, education and health expenditures based on administrative data.
3. Gross National Income per capita (2011 PPP US\$), World Development Indicators, World Bank. Searched on June 29, 2015, World Bank. <http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>

Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

Brazil, Costa Rica and Uruguay have more resources to implement redistributive policies and their social spending is more than 20 percent of GDP. On the other extreme, Guatemala has social spending of 6 percent of GDP. The remaining countries are on an intermediary position with social spending around 10 percent of GDP. However, as it is showed below, income redistribution and poverty reduction varies even in countries with similar amount of resources.

Figure 3. Tax Composition (ordered by revenues/GDP)

Notes:

1. Household survey year in parenthesis.
2. Taxes revenues from administrative data.
3. Gross National Income per capita (2011 PPP US\$), World Development Indicators, World Bank. Searched on June 29, 2015, World Bank. <http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD>

Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

How much redistribution and poverty reduction is being accomplished in each country through social spending, subsidies, and taxes? The results are shown in Table 1 and Figures 4 and 5.

3.1. Inequality

Of all nine countries and using the Gini coefficient as an indicator, Brazil and Uruguay lower more income inequality through direct taxes and transfers (disposable income vs. market income) (Table 1). They are followed by Mexico, Ecuador, Costa Rica, Bolivia, Peru, and El Salvador. Guatemala lowers income inequality the least; this in spite of the fact that it is the fourth most unequal country of the group. When compared with disposable income inequality, net (of indirect subsidies) indirect taxes are slightly unequalizing in Bolivia, Brazil, Guatemala and Uruguay (Figure 4). In Costa Rica, El Salvador, Mexico and Peru, they are slightly equalizing, but significantly equalizing in Ecuador. Adding the monetized value of public education and health spending lowers the Gini the most, especially in Brazil, Costa Rica and Uruguay. Once again, Guatemala stands out as the least redistributive. In general, the most unequal countries are redistributing more but they also have higher social spending as proportion of their GDP.

Table 1
REDUCTION IN INEQUALITY AND POVERTY

	Change in Disposable Income wrt Market Income	Change in Post-Fiscal Income wrt Market Income	Change in Final Income wrt Market Income
Bolivia (2009)			
Gini	-1,00%	0,0%	-5,7%
Headcount Ratio	-2,0%	0,6%	not applicable
Brazil (2009)			
Gini	-3,5%	-3,3%	-14,0%
Headcount Ratio	-3,9%	1,2%	not applicable
Costa Rica (2010)			
Gini	-1,9%	-2,2%	-10,6%
Headcount Ratio	-1,5%	-1,2%	not applicable
Ecuador (2011-2012)			
Gini	-2,1%	3,3%	-7,40%
Headcount Ratio	-3,1%	-3,9%	not applicable
El Salvador (2011)			
Gini	-1,0%	-1,1%	-3,6%
Headcount Ratio	-1,8%	-0,3%	not applicable
Guatemala (2010)			
Gini	-0,5%	0,0%	-2,8%
Headcount Ratio	-1,3%	0,6%	not applicable
Mexico (2010)			
Gini	-2,3%	-3,0%	-8,2%
Headcount Ratio	-1,9%	-1,9%	not applicable
Peru (2009)			
Gini	-1,0%	-1,2%	-3,8%
Headcount Ratio	-1,2%	-0,7%	not applicable
Uruguay (2009)			
Gini	-3,5%	-3,3%	-9,9%
Headcount Ratio	-3,6%	-2,8%	not applicable

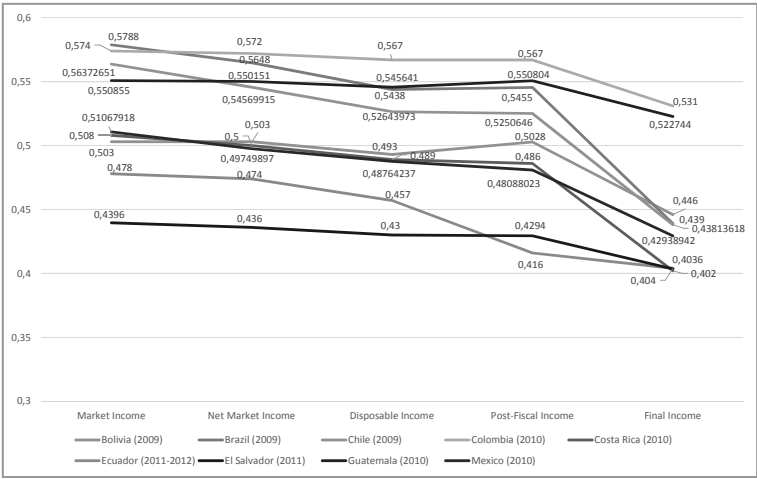
Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

3.2. Poverty

The headcount ratio (with the international extreme poverty line of US\$2.50/day in ppp) is used to estimate the impact of taxes and transfers on poverty. In Table 1 and Figure 5, one can observe that net (of direct taxes) direct transfers lower poverty the most in Brazil and the least in Peru. However, when one adds the effect of net indirect taxes, the headcount ratio in Brazil is *higher* than the market income headcount ratio. That is, overall, the Brazilian tax and transfers system (excluding public services) increases poverty. The same happens in

Bolivia and Guatemala. The country that lowers poverty the most after direct and indirect taxes, cash transfers and indirect subsidies are taken into account, is Ecuador. Again, Guatemala stands out because, although it as the highest poverty rate in the group, fiscal policy slightly increases poverty by 0.6 percent.

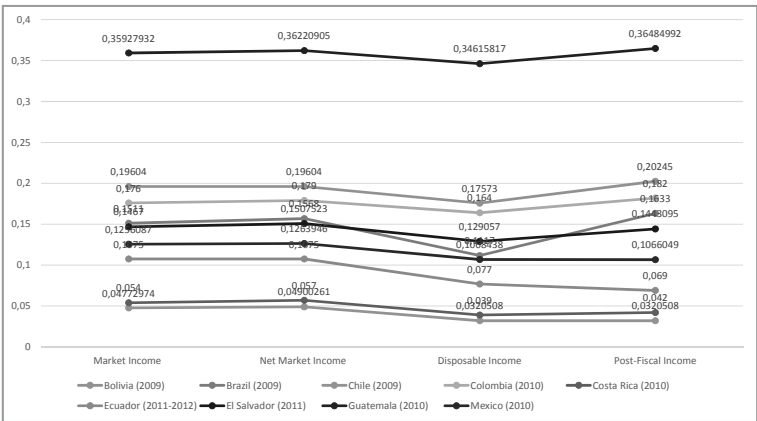
Figure 4. Gini Coefficient by Income Concept



Note: Household survey year in parenthesis.

Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

Figure 5. Extreme Poverty Headcount Ratio for Each Income Concept (US\$2.50 PPP)



Source: Elaboration based on: Bolivia: Paz-Arauco *et al.* (2014); Brasil: Higgins and Pereira (2014); Costa Rica: Sauma and Trejos (2014); Ecuador: Llerena *et al.* (2015); El Salvador: Beneke *et al.* (2014); Guatemala: Cabrera *et al.* (2014); México: Scott (2014); Perú: Jaramillo (2013); Uruguay: Bucheli *et al.* (2014).

4. Conclusions

The comparative analysis of the redistributive effects of the fiscal system presented here reveals more variations than a common Latin American welfare state. The nine Latin American states represented here vary significantly in size: total primary government spending ranges from 13.6 to 41.4 percent of GDP (25.8 percent on average). And social spending ranges from 7.4 percent in Guatemala to 25.3 percent of GDP in Brazil.

The nine countries vary in terms of the redistributive impact of their fiscal policy and this variation is not always correlated with size. The nine fiscal systems analyzed can be divided into two groups in terms of their total redistributive effect. The first (Brazil, Costa Rica, and Uruguay) achieves a higher reduction of final income—that is, including the effect of in-kind transfers—inequality between 9.9 and 14.4 percent points, while a second group (Bolivia, Ecuador, El Salvador, Guatemala, Peru and Mexico) reduces final income inequality by 2.8 to 8.2 percent. The less redistributive states are so either because they spend significantly less (Guatemala and Peru) or because their spending is not targeted to the poor (Bolivia). There are differences within as well as between these groups. Perhaps the most interesting finding is that equity may matter more than size. For example, Ecuador is a country that spends relatively less (third lowest), but it is ranked fifth reducing income inequality.

When one includes the in-kind transfers in education and health, valued at government costs, they reduce inequality in all countries by considerably more than cash transfers. This result is not surprising given the much larger share of public spending devoted to education and health spending compared to cash transfers. Care should be taken, however, to read too much into the redistribution through transfers in-kind since the valuation using government costs may not reflect the actual valuation by the beneficiaries, and the method used to monetize the transfers in-kind does not take into account variations in quality. Furthermore, the progressiveness of the education and health systems could be due to an undesirable underlying phenomenon: that is, the middle-classes and the rich opting-out of the public education and public health systems because of quality concerns.

Fiscal policy reduces extreme poverty in six countries: Costa Rica, Ecuador, El Salvador, Mexico, Peru, and Uruguay. More dramatically, the net effect of all taxes and cash transfers is to increase poverty in Bolivia, Brazil, and Guatemala. In the case of Brazil (Higgins and Pereira, 2014), 27 percent of the moderate poor are pushed down into extreme poverty and 4.5 percent of the extreme poor are pushed into ultra-poverty when comparing post-fiscal income poverty rates with respect to market income poverty rates. Also, consumption taxes more than offset the poverty-reducing effect of direct cash transfers (Figure 5).

To put the results for these nine Latin American countries in perspective, the average reduction in the disposable income Gini coefficient for advanced OECD countries (OECD, 2011) was 11.2 percentage points (OECD, 2011, chapter 7) while the average for our nine countries is less than 2 percentage points. Thus, in spite of the progress witnessed in terms of inequality and poverty reduction in the 2000s, Latin America still lags behind significantly in terms of redistribution achieved through taxation and social spending.

Notes

1. Lustig, López-Calva and Ortiz-Juarez (2013); Inter-American Development Bank (2011), p. 43.
2. For a description, applications and limitations of standard incidence analysis see, for example, Musgrave and Musgrave (1985) and Shah and Whalley (1991).
3. For more details on concepts and definitions, see Lustig and Higgins (2013).
4. Since here we are treating contributory pensions as part of market income, the portion of the contributions to social security going towards pensions is treated as “saving”.
5. One may also include participation costs such as transportation costs or foregone incomes because of use of time in obtaining benefits. In our study, they were not included.
6. OECD Social Expenditure Database (SOCX). The OECD SOCX definition for public social expenditure is as follows: social spending with financial flows controlled by General Government (different levels of government and social security funds), as social insurance and social assistance payments. Social benefits include cash benefits (e.g., pensions, income support during maternity leave and social assistance payments) and social services (e.g., childcare, care for the elderly and disabled). It therefore excludes education spending. <http://www.oecd.org/social/expenditure.htm>

References

- Beneke, M., Lustig, N. and Oliva, J. A. (2014), “El impacto de los impuestos y el gasto social en la desigualdad y la pobreza en El Salvador”, *CEQ Working Paper* 26, Center for Inter-American Policy, Research and Department of Economics, Tulane University and Inter-American Dialogue and CEQ Master Workbook: El Salvador, June 26.
- Breceda, K., Rigolini, J. and Saavedra, J. (2008), “Latin America and the Social Contract: Patterns of Social Spending and Taxation”, *Policy Research Working Paper* 4604, World Bank Latin American and Caribbean Region Poverty Department Poverty Reduction and Economic Management Division, Washington DC: World Bank. Available online <http://go.worldbank.org/BWBRP91A50>
- Bucheli, M., Lustig, N., Rossi, M. and Amábile, F. (2014), “Social Spending, Taxes and Income Redistribution in Uruguay”. In Lustig, Nora, C. Pessino and J. Scott. 2014. (Eds.), “The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue”, *Public Finance Review*, 42(3): 413-433, and CEQ Master Workbook: Uruguay, August 18, 2014.
- Cabrera, M., Lustig, N. and Morán, H. (2014), “Fiscal Policy, Inequality and the Ethnic Divide in Guatemala”, *CEQ Working Paper* 20, Center for Inter-American Policy and Research and Department of Economics, Tulane University and Inter-American Dialogue. October and CEQ Master Workbook: Guatemala, August 27, 2014.
- CEDLAS (Centro de Estudios Distributivos, Laborales y Sociales) and World Bank (2012), “A Guide to the SEDLAC Socio-Economic Database for Latin America and the Caribbean”, http://sedlac.econo.unlp.edu.ar/download.php?file=archivos_upload_items_metodologia/Guide_14_english.pdf
- Deaton, A. (2005), “Measuring Poverty in a Growing World (or Measuring Growth in a Poor World)”, *The Review of Economics and Statistics*, 87(1): 1-19.

- Goñi, E., López, J. H. and Servén, L. (2011), “Fiscal Redistribution and Income Inequality in Latin America”, *World Development* 39(9): 1558-1569.
- Higgins, S. and Pereira, C. (2014), “The Effects of Brazil’s Taxation and Social Spending on the Distribution of Household Income”, in Lustig, Nora, Carola Pessino and John Scott. (Eds.), “The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue”, *Public Finance Review*, 42(3) and CEQ Master Workbook: Brazil, November 4.
- Immervoll, H., Levy, H., Nogueira, J. R., O’Donoghue, C. and Bezerra de Siqueira, R. (2009), “The Impact of Brazil’s Tax-Benefit System on Inequality and Poverty”, *Poverty, Inequality, and Policy in Latin America*. Stephan Klasen, and Felicitas Nowak-Lehmann, Cambridge: Mass.: MIT Press. 271-302.
- Jaramillo, M. (2014), “The Incidence of Social Spending and Taxes in Peru”, in Lustig, Nora; Pessino, Carola, and Scott, John. (Eds.), “The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue”, *Public Finance Review*, May, 43(3): 391-412, and CEQ Master Workbook: Peru, June 21, 2013.
- Lindert, K., Skoufias, E. and Shapiro, J. (2006), “Redistributing Income to the Poor and Rich: Public Transfers in Latin America and the Caribbean”, *Social Protection Discussion Paper* 0605, Washington, D. C.: The World Bank.
- Llerena Pinto, F. P., Llerena Pinto, M. C., Saá Daza, R. C. and Llerena Pinto, M. A. (2015), “Social Spending, Taxes and Income Redistribution in Ecuador”, *CEQ Working Paper* 28, Center for Inter-American Policy, Research Department of Economics, Tulane University and Inter-American Dialogue, February, CEQ Master Workbook: Ecuador, November 7, 2014.
- Lustig, N., López-Calva, L. F. and Ortiz-Juárez, E. (2013), “Declining Inequality in Latin America in the 2000s: The Cases of Argentina, Brazil and Mexico”, *World Development*, 44: 129-141.
- Lustig, N. and Higgins, S. (2013), “Commitment to Equity Assessment (CEQ): Estimating the Incidence of Social Spending, Subsidies and Taxes. Handbook”, *CEQ Working Paper* 1, July 2011, revised January 2013, New Orleans, LA.
- Martínez-Vázquez, J. (2001), “The Impact of Budgets on the Poor: Tax and Benefit Incidence”, *International Studies Program, Working Paper* 01-10, Andrew Young School of Policy Studies, Georgia State University.
- Musgrave, R. A. and Musgrave, P. B. (1989), *Public Finance in Theory and Practice*, McGraw-Hill.
- OECD (2011), “Divided We Stand. Why Inequality Keeps Rising”, *OECD Publishing*. <http://dx.doi.org/10.1787/9789264119536-en>
- Paz Arauco, V., Gray Molina, G., Jiménez Pozo, W. and Yáñez Aguilar, E. (2014), “Explaining Low Redistributive Impact in Bolivia”, in Lustig, Nora, Pessino, Carola and Scott, John. (Eds.), “The Redistributive Impact of Taxes and Social Spending in Latin America. Special Issue”, *Public Finance Review*, May, 42(3): 326-345, CEQ Master Workbook: Bolivia, August 8, 2013.
- Sauma, J. and Trejos, J. D. (2014), “Gasto público social, impuestos, redistribución del ingreso y pobreza en Costa Rica”. *CEQ Working Paper* 18, Center for Inter-American Policy and Research and

- Department of Economics, Tulane University and Inter-American Dialogue, January, CEQ Master Workbook: Costa Rica, September, 2014.
- Scott, J. (2014), “Redistributive Impact and Efficiency of Mexico’s Fiscal System”, in Lustig, Nora, Carola Pessino and John Scott. (Eds.), “The Redistributive Impact of Taxes and Social Spending in Latin America, Special Issue”, *Public Finance Review*, May, 42(3): 368-390.
- Shah, A. and Whalley, J. (1991), “Tax Incidence Analysis of Developing Countries: An Alternative View”, *The World Bank Economic Review*, 5(3): 535-552.
- Silveira, F. G., Ferreira, J. J. and Ribeiro, J. A. C. (2011), “Qual o Impacto da Tributação e dos Gastos Públicos Sociais na Distribuição de Renda do Brasil? Observando os Dois Lados da Moeda”, in *Progressividade da Tributação e Desoneração da Folha de Pagamentos Elementos para Reflexão*, José Aparecido Carlos Ribeiro, Álvaro Luchiezi Jr. and Sérgio Eduardo Arbulu Mendonça, eds., Brasília: IPEA, 25-63.
- Trejos, J. D. (2009), “La equidad de la política fiscal en Costa Rica”, in Alberto Barreix, Martín Bes y Jerónimo Roca, *Equidad Fiscal en Centroamérica, Panamá y República Dominicana*, Washington D. C., EEUU: Banco Interamericano de Desarrollo y EUROsocial, sector fiscalidad.

Resumen

¿Cuánta redistribución y reducción de la pobreza se logra en Latinoamérica a través del sistema fiscal y del gasto público? Este trabajo realiza un análisis de incidencia fiscal comparable con nueve países: Bolivia, Brasil, Costa Rica, Ecuador, El Salvador, Guatemala, México, Perú y Uruguay. A partir de la selección como indicador del coeficiente de Gini, Brasil es el país que más reduce su desigualdad en renta a través de su sistema fiscal y de transferencias, mientras que Guatemala se sitúa en el polo opuesto. El gasto público en Educación y Sanidad tiene un mayor efecto igualitario que otras transferencias. Si se añade el efecto de los impuestos indirectos, los niveles de pobreza son mayores que los generados por las rentas obtenidas en el mercado para Bolivia, Brasil y Guatemala.

Palabras clave: incidencia fiscal, desigualdad, pobreza, gasto social, Latinoamérica

Clasificación JEL: D31, H22, I38, O54