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# Market income inequality, left-wing political parties, and redistribution in Latin America

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## **Market income inequality, left-wing political parties, and redistribution in Latin America**

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### **Abstract**

The paper uses household-level data from more than 200 household income surveys from 20 Latin American and Caribbean countries to explore the (revised) median voter hypothesis and the political determinants of the recent decrease of Latin American inequality. We find that more unequal market-income countries, and greater market-income inequality within a given country, are associated with greater pro-poor redistribution, although such redistribution is rather weak in Latin America compared to the economically advanced countries. We also find that more pro-left political orientation of national legislatures has been associated with greater redistribution. We thus argue that there are political roots to the recent decrease of inequality in Latin America.

**Keywords:** Latin America, inequality, political orientation, median voter

**JEL Classification:** D31, E62

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## Introduction

The objective of this paper is to bring together two strands of literature in order to explore the factors behind the decrease of inequality in Latin America in the last decade of the 20<sup>th</sup> and the first decade of the 21<sup>st</sup> century. The first strand of literature deals with the median voter hypothesis that is supposed to explain why in more unequal democratic societies voters tend to favor redistribution. The second strand of literature explains the reasons behind Latin American decline in inequality emphasizing its left-wing political swing. Our objective is to test whether the median voter hypothesis in its revised form, the so-called “redistribution hypothesis”, combined with the information about democracy and political partisanship (left- vs. right-wing political parties in power) can shed additional light on the decrease of inequality in Latin American and Caribbean (LAC) countries.

The paper is organized as follows. In section 1, we briefly discuss the empirical misspecification of the original median voter hypothesis and its revised, or alternative, formulation the “redistribution hypothesis”. The novelty of the approach is that it fully exploits the available micro data from household surveys; or to put it differently, the correct approach, whether testing the median voter hypothesis or the redistribution hypothesis, is impossible without access to micro data. This is what we call “non-anonymous” approach: micro data allow us to look directly at households that are winners or losers in the process of redistribution. Section 2 explains how the variables that we use in the analysis are constructed using household surveys from Luxembourg Income Survey (LIS) and SEDLAC (Social and Economic Database for Latin America and the Caribbean). Section 3 presents the redistribution results using the standard anonymous analysis with Gini coefficients. Section 4 shows how the anonymous analysis can be improved and enriched through a more focused use of micro data (yielding the non-anonymous analysis) and discusses the redistribution results obtained for Latin American countries. The last section concludes the paper.

### I. How to correctly study redistribution

The by-now venerable median voter hypothesis was proposed by Allan H. Meltzer and Scott F. Richard (1981, 1983) as a way to explain redistribution of income through taxes and transfers. The idea is that people vote on redistribution packages based on their expectation of how much they will have to pay in direct taxes vs. how much they expect to gain from social transfers. If they are likely to gain (lose) in net terms they vote in favor of (against) greater redistribution. If market-generated income distribution is very unequal then more people have to gain from transfers, which in the simplest formulation are supposed to be equal per capita, than to lose from taxes. In such a way highly unequal market income distribution is self-corrective: it leads to more people favoring redistribution and thus ultimately to a reduction in inequality.

The early studies of the hypothesis (Perotti 1993; Perotti 1996; Persson and Tabellini 1992; Alesina and Rodrik 1994; Alesina and Perotti 1994) were done by looking at redistribution as a function of, not market, but disposable income Gini. The hypothesis was thus tested as if people

voted on tax-and-transfer combinations based on their ranks in *post-redistribution* income. This is of course logically wrong, since disposable income is the outcome of the redistributive process and people vote based on their *pre-redistribution* positions.<sup>†</sup> This was done probably because very few household surveys with micro data that are needed to retrieve pre-tax-and-transfer income distributions were then available. It is also possible that the authors were unfamiliar with household surveys that did exist (including LIS) or may not have realized that a given (say, first or third) pre- and post-redistribution income decile may be composed of entirely different people.

The first correct testing of the Meltzer-Richard hypostasis was done by Milanovic (2000). The paper used for the first time household-level data obtained from household surveys to test the hypothesis, and in the process reformulated the hypothesis itself.<sup>‡</sup> Milanovic tested the median-voter hypothesis by calculating the gain realized by different deciles of income distribution when people are ranked by their pre-fisc (market) income. Of the two prediction of the median voter hypothesis, namely (1) that the redistribution should rise with pre-fisc inequality, and that (2) the effect should be the greatest for the median voter, or at least, that the median voter should be a net beneficiary of redistribution, Milanovic finds a strong support for the first claim, but not the second. The greater the inequality in market incomes, the greater is redistribution and the gain monotonically decreases as we move toward the richer deciles (in pre-fisc terms). But the middle deciles (fifth or sixth) gain almost nothing or very little.

This has led Milanovic (2000) to formulate the “redistribution hypothesis” arguing that the gains are greater the lower is the market-income share of a decile but that we cannot *ex hypothesi* assert what would be the effect on the median voter. The key new variable named *sharegain* measures the difference in the share of income received by people in a given market income decile as the redistribution proceeds: first we look at their share in gross income (market income plus government transfers) and then their share in disposable income (gross income minus direct taxes). We thus observe how income shares of the *same* people change through the redistribution process: that is, whether they are “winners” or “losers”. This can obviously be done only if we have micro (household level) information. To clarify, if the bottom decile by market (pre-fisc) income share is, say 2 percent of total market income, and the share of the same people, after taxes and transfers, is 5 percent of disposable income, the *sharegain* for this decile is 3 percentage points. Similar approach was later adopted by Tanninen and Tuomala (2001), Scervini (2009, 2012), Iversen and Soskice (2006), Shayo (2009), Borge and Rattso (2004), Wong (2017) all using household survey, mostly LIS, data. In this paper, we apply the same approach to test the hypothesis on Latin American data.

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<sup>†</sup> Market income *minus* direct taxes *plus* government cash transfers equals disposable income.

<sup>‡</sup> In addition to the papers that do the usual cross-country testing of the median voter hypothesis and often find a rather weak support for it (Dalgaard, Hansen and Larsen 2005, Kenworthy and McCall 2008, Lind 2005, Moene and Wallerstein 2001, Nel 2007, Creedy and Moslehi 2009), a number of other papers redefine, perhaps precisely because of the weak empirical support for the straightforward application of the hypothesis, either the “identity” of the median voter, turnout, or the domain of the voters (Arawati 2009; Berenboim and Karabourbanis 2008; Bussett, Burkett and Putterman, 1999; Mahler 2006, Corneo and Neher 2015),

But in order to motivate it further and situate it in its political context, we look at redistribution together with political variables: level of democracy, and left-wing or right-wing political orientation (“partisanship”) of governments and legislatures. Not only is this a more realistic approach to redistribution, but it has been widely argued that the key impetus to Latin American inequality reduction (and greater redistribution) came from the left-wing governments that, approximately at the same time, came to power in Argentina, Bolivia, Brazil, Chile, Ecuador and Venezuela<sup>§</sup>.

Now, the argument regarding the link between redistribution and political orientation of governments or legislatures is an old one. For the recent review of the evidence and the mechanism whereby it takes place, see Keefer and Milanovic (2010), where the key channels of influence and the caveats are presented. The main argument has generally been that the left-wing parties in governments and parliaments tend to be more redistributive (tax more and/or increase government social transfers) because their electoral base is composed of poorer social classes. Such a behavior of the left would be consistent with the median voter hypothesis. Putting together the fact that Latin America was the only region in the world that witnessed a sustained recent decline in inequality and, at the same time, registered a strong left-wing swing in governments, would seem to support the hypothesis. In this paper, for the partisanship variable, we use information on Latin American political systems, government parties and their political orientation from the World Bank Database of Political Institutions<sup>\*\*</sup>.

## **II. How are (non-anonymous) distributional data constructed**

To proceed to a correct specification of the median voter or redistribution hypothesis one has to look at income gains while holding individuals constant, that is to look at the gains or losses of the actual people ranked according to their pre-fisc income levels. This is possible to do using harmonized survey data from Luxembourg Income Study (LIS). They allow researchers to calculate market incomes (before taxes and transfers) across households, and to measure redistributive impact of government policies as the difference between market income and disposable (post-taxes and transfers) or gross income (post-transfers only) for each individual household. LIS however covers a relatively small number of Latin American and Caribbean (LAC) countries and we expand the data by using similar household surveys from the SEDLAC data base. We have in total 239 surveys (country-years) from 20 Latin American and Caribbean countries. LIS supplies 49 surveys and SEDLAC 190 surveys.

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<sup>§</sup> Hugo Chavez become the president of Venezuela in 1999, Lula da Silva (Workers’ Party) and Nestor Kirchner (Peronist) became presidents of respectively Brazil and Argentina in 2003, Michelle Bachelet (Socialist Party) and Evo Morales (Movement for Socialism) become presidents of respectively Chile and Bolivia in 2006, Rafael Correa (Social Democratic Alliance) became president of Ecuador in 2007. Thus the political landscape of Latin America changed radically within less than a decade.

<sup>\*\*</sup> World Bank Database of Political Institutions is discussed in greater detail in Keefer and Milanovic (2010).

We use these data to calculate market, gross, and disposable income. To measure redistribution, we first sort households into ten deciles according to their *market* income. To calculate *gross* incomes of the households in each *market* decile, government transfers are added to the market income of each decile. Finally, we calculate *disposable* incomes of the households in each *market* decile by deducting direct taxes. The difference between a decile's share of total disposable (or gross) income and the same decile's share of total market income is, as mentioned above, called the *sharegain*. Ideally, we would use the *sharegain* expressing the difference between disposable and market income. This is almost always possible for rich countries, but not for other countries. In most of Latin America, direct taxes take the form of wage or payroll taxes that are withdrawn at source; survey respondents thus report their wages and income net of wage taxes and do not indicate how high these taxes are. Other direct taxes are negligible. This means that disposable and gross incomes reported in Latin America are often the same and we are unable to account for the effect of direct taxes separately. This is the case throughout with SEDLAC data. We therefore measure redistribution simply by examining the difference between market income and gross income, i.e. accounting for the effect of transfers only.<sup>††</sup>

When redistribution is significant, we expect the market-income poor deciles to have positive (and large) *sharegain*; the *sharegain* should monotonically decrease for higher market income deciles, eventually turning negative.<sup>‡‡</sup> A positive *sharegain* simply means that a given decile gains through the process of redistribution; a negative, that it loses. We shall focus on the share of the bottom four deciles in market income. When we use *sharegain*, the analysis is not anonymous: we look at whether the individuals who are market-income poor are benefitting and how much.

The next issue is how to take into account the often large fraction of government transfers that are pension payments (social retirement benefits). To the extent that state-provided pensions reflect actuarially fair contributions made by beneficiaries and their employers and have no redistributive component, state pensions should be considered as part of market income. The larger the redistributive component, the greater the justification for including pension payments as part of redistributive transfers and not as part of market incomes. However even if we are agnostic about the redistributive nature of Latin American pension schemes, the treatment of state pensions as redistributive transfers tends to exaggerate the calculated extent of redistribution, since many pensioners have no other sources of income, and are almost invariably classified as market-income poor and thus included among the bottom deciles. They would

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<sup>††</sup> LIS definitions are as follows: Market income (MI), *brutto* market income = *brutto* earnings (inclusive of wage taxes) + income from self-employment + cash property income + occupational pensions. Gross income = *brutto* market income + all social transfers + regular private transfers (state mandated alimony and others private transfers). Disposable income = Gross income - mandatory payroll tax – direct income taxes. For SEDLAC data, the definitions are as follows: Market income (MI), *net* market income = net earnings + income from self-employment + cash property income. Gross income = *net* market income + non-retirement social transfers + private transfers. Disposable income = gross income. (We use the term "brutto" here to differentiate between the situation when wage taxes are included as part of wages from the term of "gross" income that is used by LIS and more generally in work on household surveys.)

<sup>‡‡</sup> Negative *sharegain* means that a given decile's share in disposable income is less than in market income. This would typically be the case for top market income deciles.

therefore appear, just on the strength of pensions, to be great beneficiaries of redistribution. To avoid this, we assume that pensions are part of market income, in other words we treat them as deferred wages. Market income that includes state pensions (specifically in the LIS nomenclature, state old age and survivors' benefits) is called *market1* income. This is the concept we shall use throughout.

We can write the *sharegain* ( $sg_i$ ) for the  $i$ -th decile of market income as

$$sg_i = d_{i,m} - m_{i,m}$$

where  $d_{i,m}$ =the share of the  $i$ -th market income decile (hence the subscript  $m$ ) in total disposable income, and  $m_{i,m}$ =the share of  $i$ -th market income decile in total market income. Our variable of interest which is the cumulative *sharegain* of the bottom four deciles can then be written as (1)

$$CSG = \sum_{i=1}^4 sg_i \quad (1)$$

In all cases we work with household-per-capita definitions where deciles are composed of 10 percent of individuals whose income is their household per capita income.

A short note on the political variables used in the analysis is in order now. As mentioned, they are drawn from the Database of Political Institutions, DPI (Beck, et al. 2001). The variables that we use are democracy and political alignment. For democracy, we use two specifications: a binary specification such that democracy takes the value of 1 only if the underlying DPI variables estimating the level of electoral competitiveness for the executive office (EIEC) and electoral competitiveness for legislature (LIEC) both take the highest value if 7 (otherwise democracy=0); and a quasi-continuous variable (EICE or LIEC) which runs from 1 to 7. §§ For political alignment we use the variable that proxies the political tendencies (right, center, left) of the executive and the legislature. \*\*\*

### III. Inequality and redistribution in Latin America (anonymous analysis)

While both market and disposable income inequality are high in Latin America, they have recently, and uniquely among regions of the world, been on the decline. This is a fact which is well-known and much discussed (Alvaredo and Gasparini 2013; Gasparini, Cruces and Tornarolli 2011; Ferreira, Leita and Litchfield 2007; Tornarolli, Ciaschi and Galeano 2018). It is illustrated in Figure 1 by comparing LIS countries from various regions: Chile, USA, United Kingdom and Germany, and Taiwan. Chile, which by Latin American standards has about average inequality, displays throughout the period considered here the highest market income inequality. This

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§§ The most democratic situation is when both electoral competitiveness are at the maximum, that is both take the value of 7.

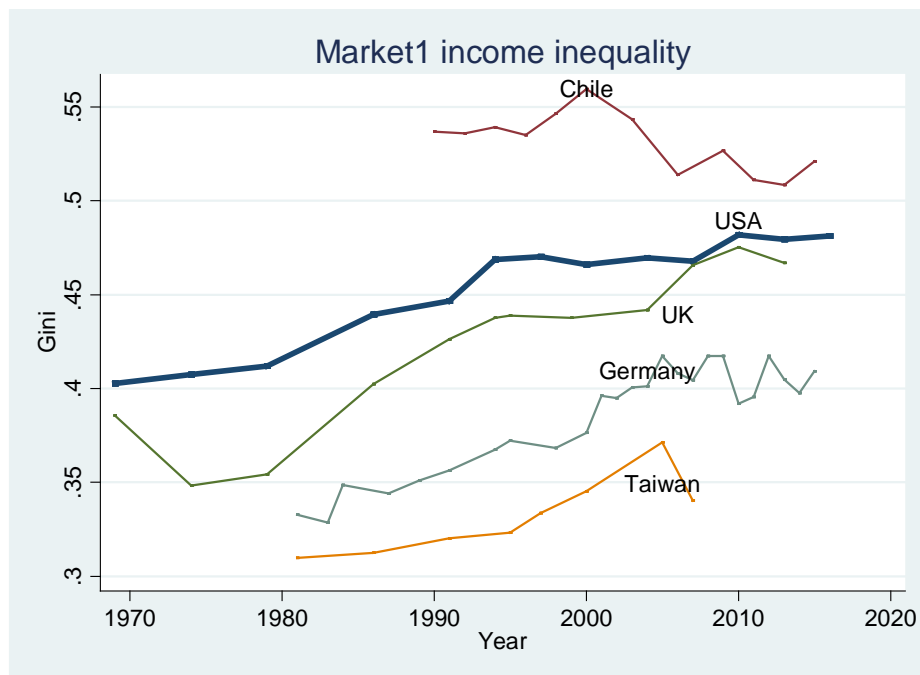
\*\*\* The variables are gov1rlc = political orientation of the largest party in legislature, and execrlc = chief executive political party's orientation.



despite the fact that Chile's inequality has gone significantly down in the first decade of the 21st century—in contrast to what happened in other countries.

The Chilean examples illustrates also that the major force driving inequality reduction in Latin America need not have been redistribution as such but other measures that to lower market income inequality such as higher minimum wage, increased public employment, “formalization” of informal labor, and over the longer-run better access to education for the poor. Our paper however focuses more narrowly on government direct measures to affect poverty through redistributive transfers.

**Figure 1. Market1 income inequality in selected countries**



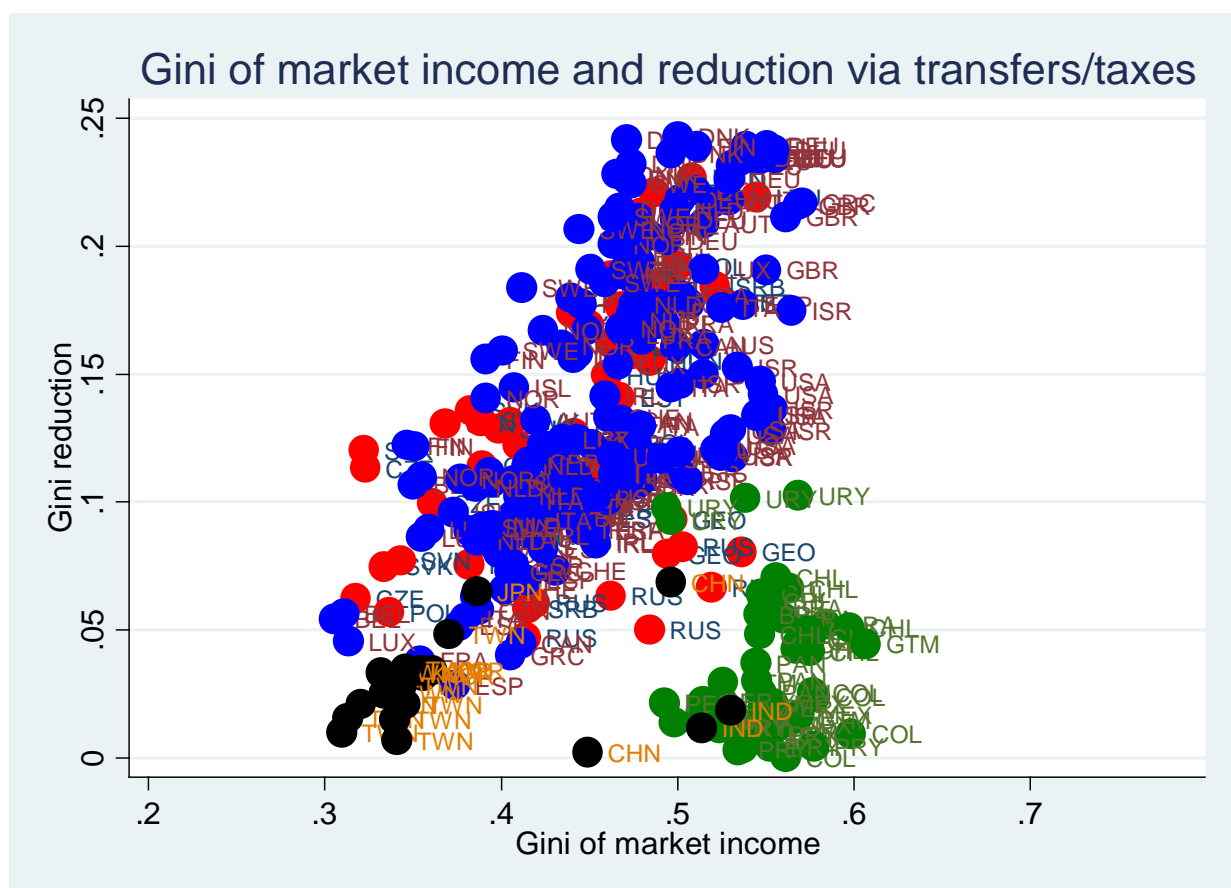
*Source: Calculated from LIS data. All income measures are on household per capita basis.*

But would not high market income inequality stimulate, as the Meltzer-Richard hypothesis implies, democratic countries like Chile, and Latin American countries in general, to redistribute more? This, however, is not the case to the same extent everywhere. Figure 2 shows, using all LIS surveys available as of December 2018, the extent of market income inequality on the horizontal axis, and the reduction of Gini-measured inequality due to social transfers and taxes. We expect a positive relation between the two. This is the case when we look at countries colored blue that are in Western Europe, North America and Oceania (most of LIS dataset). When we run a regression between market Gini and extent of redistribution (Gini reduction) on these countries the coefficient linking the two ( $\beta$ ) is positive (0.66) and highly statistically significant. It means that on average for each additional Gini point of market income inequality, redistribution is 0.66 Gini points greater. (If  $\beta$  were equal to 1, all increases in market income inequality would be fully offset through greater redistribution.) The relation is also positive for East European countries (denoted red) although the coefficient is smaller (0.37). The Asian countries (denoted black)

available in LIS are few in numbers but they fit (especially so Taiwan) the overall pattern very well: they have low market income inequality and low redistribution.

Latin American countries (in green) stand out: their market income inequality is high and their redistribution is low:  $\beta$  is only 0.04 and not statistically significantly different from zero. LAC countries' market income Ginis are between 0.5 and 0.6 and redistribution shaves off on average only about 2-3 Gini points from that inequality (that is, reduces Gini by 0.02 to 0.03). If Western countries had Latin American levels of market income inequality (and some indeed do), the redistribution would equal some 20 to 25 Gini points. Thus, the origin of high disposable income inequality in Latin America lies not only in a high level of market income inequality, but is also due to the very low level of redistribution. Latin America is indeed, in those respects, different from other regions for which we have similar data.

**Figure 2. Gini of market income and reduction of Gini through redistribution**



*Source: Calculated from LIS data. All income measures are on household per capita basis.*

#### IV. Non-anonymous redistribution and the role of politics

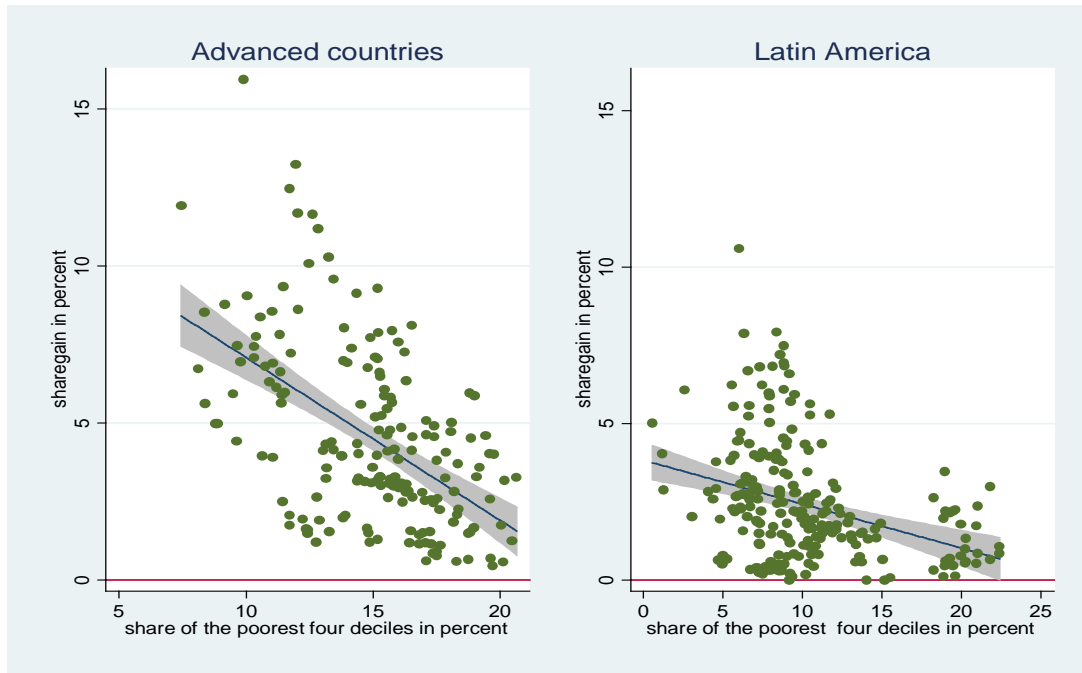
We now move to non-anonymous analysis of redistribution where we look at how the share of the bottom four deciles (according to market1 income), called “the poor”, changes through the process of redistribution. Figure 3 contrasts the results for advanced economies (Western Europe, North America, and Oceania) and Latin American countries. Each dot represents a value from one survey that shows market1 share of the poor on the horizontal axis, and the gain in income share of the same people at gross income stage, that is, through government social transfers, on the vertical axis.<sup>10</sup> The regression line with the five-percent confidence interval is shown in both panels. The results indicate that in both sets of countries, redistribution is stronger if market1 share of the poor is lower. Redistribution reacts positively to the poverty of the bottom deciles. We therefore note that the redistribution hypothesis (higher initial inequality => greater the *sharegain*) holds in both regions. But the *reaction* to rising inequality is much weaker in Latin America where the regression line is much flatter. The *level* of reaction is also lower as shown by the fact that the height of the line is less in Latin American than in advanced economies. In other words, based on non-anonymous data, we conclude that Latin American redistribution (for a given level of market1 income inequality) is less than in rich countries and that the system reacts more weakly—that is, compensates less—when market1 income inequality increases. In advanced economies, each percentage point loss in market income of the poor is “compensated” by 0.52 percentage *sharegain* through transfers. We call this elasticity  $\gamma$ . In Latin America  $\gamma$  is only 0.14. These are of course “crude” elasticities, not controlled for other factors. Note that  $\gamma$  can be interpreted as a reaction to an unanticipated negative income shock that affects the poor. The higher the elasticity, the more are government transfers able to compensate for sudden income losses. We look next at the elasticity after introducing a number of political and economic controls.<sup>11</sup>

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<sup>10</sup> Because we want to make our sample as large as possible for LAC countries we include data from SEDLAC as well which, as mentioned above, do not provide information on disposable income inequality. This is the reason why we focus only on redistribution via social transfers.

<sup>11</sup>  $\gamma$  is based on the relationship between the *sharegain* of the poor and their initial share in market income,  $\beta$  is based on the relationship between redistribution (measured by the reduction in Gini points inequality) and the initial Gini of market income.  $\gamma$  is thus obtained from non-anonymous and  $\beta$  from anonymous analysis.

**Figure 3. Cumulative *sharegain* of the four poorest deciles against their original share in market1 income**



*Introducing political controls*

We do this by running regressions where the sharegain is the dependent variable which does not just depend on the initial market1 share of the poor but also on a number of other, mostly political, variables that might influence government redistribution. The 239 household surveys from LIS and SEDLAC from 20 Latin American and Caribbean countries cover the period 1981-2016. The information about the surveys is displayed in Table 1.

**Table 1. Household surveys used in the analysis**

Country	Years	Number of surveys	Sources of data	Share of the bottom 40% (the poor) in market income (in %)	Sharegain of the poor (in %)
Argentina	1986-2016	18	SEDLAC	11.2	1.8
Belize	1993-1999	5	SEDLAC	5.0	0.6
Bolivia	1993-2005	8	SEDLAC	7.0	2.6
Brazil	1981-2013	26	SEDLAC, LIS	8.2	0.5
Chile	1987-2015	21	SEDLAC, LIS	18.0	1.2
Colombia	1992-2013	11	SEDLAC/LIS	7.9	2.1
Costa Rica	1990-2006	10	SEDLAC	11.0	2.7
Dominican R	1986-2013	10	SEDLAC/LIS	9.4	5.0
Ecuador	1994-2007	10	SEDLAC	7.5	1.9
El Salvador	1991-2005	11	SEDLAC	6.6	5.7

Guatemala	2000-2014	7	SEDLAC/LIS	7.9	2.1
Honduras	1997-2006	7	SEDLAC	7.2	4.7
Jamaica	1990-2002	5	SEDLAC	4.6	1.4
Mexico	1984-2012	18	SEDLAC/LIS	14.8	2.0
Nicaragua	1993-2005	4	SEDLAC	8.9	3.4
Panama	1989-2013	14	SEDLAC/LIS	6.7	2.4
Peru	1993-2013	14	SEDLAC/LIS	8.7	4.8
Paraguay	1995-2016	15	SEDLAC/LIS	10.5	1.9
Uruguay	1989-2016	18	SEDLAC/LIS	13.1	1.9
Venezuela	1989-2006	12	SEDLAC	11.7	2.4
<i>All</i>	<i>1981-2016</i>	<i>239</i>	<i>SEDLAC=190</i>	<i>10.1</i>	<i>2.4</i>
			<i>LIS=49</i>		

We use two specifications of the regression: one where *sharegain* is regressed against democracy and partisan variables that reflect the political situation at the legislative level (parliaments); GDP per capita as a proxy of development; and the original (market1) share of the poor; another specification includes the same variables except that the political variables reflect democracy and partisanship at the level of the executive branch. The country fixed-effect regressions are shown in (2).

$$CSG_{jt} = \beta_0 + \beta_1 D_{jt} + \beta_2 P_{jt} + \beta_3 Y_{jt} + \gamma(\sum_{i=1}^4 m_{ijt}) + d_j + \varepsilon_j \quad (2)$$

Where  $CSG_{jt}$  = cumulative *sharegain* of the bottom four deciles ranked by market1 income for country  $j$  and time  $t$ ,  $D_{jt}$  are democracy variables,  $P_{jt}$  = political alignment or partisanship variables (whether at the legislative or executive level),  $Y_{jt}$  = GDP per capita in international (PPP) dollars,  $\sum_{i=1}^4 m_{ijt}$  = cumulative share of the bottom four deciles in market1 income,  $d_j$ =country dummy representing country idiosyncratic effects, and  $\varepsilon_j$ =country specific random error term with all conventional properties. We also add a survey dummy to distinguish between the data that come from LIS and SEDLAC. Note that  $\gamma$  gives the estimated redistribution elasticity, i.e. the *sharegain* associated with inequality of the underlying (market) income. We also use two specifications (executive and legislative level democracy) for the anonymous version of the regression where the non-anonymous market inequality variable (the share of the four bottom deciles) is replaced by the Gini coefficient of market1 income.

Table 2 gives the descriptive statistics. We shall comment them briefly. The unweighted average share of the bottom four deciles in LAC countries is around 10 percent of market1 income. The average gain through social transfers is 2.4 percentage points, so the implicit average  $\gamma$  is around 0.24. The two democracy variables (electoral competitiveness), whether at the level of the

legislature or the executive are very high and close to the maximum value of 7. In other words, since most of LAC was fully democratic throughout the period of the study, we are unlikely to get much in terms of identification from the democracy variable since it varies very little. In effect, most countries have a perfect score of 7 throughout.

**Table 2. Descriptive statistics for LAC counties (239 household surveys)**

	Mean	Standard deviation
<b><u>Inequality and redistribution</u></b>		
Share of the poor (4 bottom deciles according to market1 income)	10.2	4.4
<i>Sharegain</i> of the poor	2.41	1.89
<b><u>Democracy and partisanship</u></b>		
Competitiveness for the executive office (ranges from 1 to 7)	6.89	0.66
Competitiveness for the legislature (ranges from 1 to 7)	6.93	0.43
Political alignment of the executive (1=right, 2=center, 3=left)	1.74	0.88
Political alignment of the legislature (1=right, 2=center, 3=left)	1.67	0.81
<b><u>Economics</u></b>		
GDP per capita (in 2011 PPPs)	9940	3787

Both legislative and executive political alignment tended toward the right; note that if they were centrist, the average value of the variable would be 2, and thus a value lower than 2 indicates a preponderance of right-wing presidents and parties. There is however more variability (compare the standard deviations) in the case of political alignment than in the case of democracy. The country with an exclusive pro-left political alignment of both the executive and the legislature throughout the period is Jamaica, while countries with the exclusive pro-rightist alignments at both levels are more numerous: Belize, Honduras, El Salvador, and Panama (although for Panama the partisanship data are not available for all the survey years). LAC countries included here, with the exceptions of Jamaica and Belize, are presidential republics so a divided government, in the sense of the chief executive (president) being from one party, and the majority of the legislature being from another is quite common. In parliamentary systems,

however, a divided government is excluded by definition since the executive (the prime minister) issues from the legislative majority.

Finally, the GDP per capita shows Latin America and the Caribbean to be in the middle-income range, although a relatively high standard deviation indicates that we are dealing with countries like Chile whose GDP per capita, at the end of the period studied here, was around \$PPP 23,000 but also Guatemala whose GDP per capita was around one-third of Chilean level (around \$PPP 8,000).

Table 3 presents the results of the regressions. Democracy, both as the dummy variable and as competitiveness for the executive office or legislature, is statistically not significant. Political alignment, whether left- or right-wing is not significant as far as the executive office is concerned. However, when it comes to legislatures, left-wing parliaments are more redistributionist. Every leftward shift (whether from the right to the center, or from the center toward the left) is associated with an increased share of the poor by about 0.3 percentage points. Given that the average *sharegain* of the poor in Latin America and the Caribbean is about 2.4 percentage points (see Table 2), it means that each pro-left swing of the legislature is responsible for about 10 percent of the poor's gain. This is an important result showing that the connection between reduction of inequality in Latin America and left-wing political change may not be accidental. GDP per capita is not influential. What also matters are the variables linked with the redistribution hypothesis: the lower the original share of the poor, the greater the redistribution. The elasticity is quite low though. It is between 0.13 and 0.16, implying –as explained—that if a sudden economic shock were to reduce the income share of the bottom 40% of the population by 1 percentage point, that would be compensated only by between 0.13 and 0.16 percentage points.

Very similar results are retrieved in the anonymous formulation of the regressions (see regressions 2 and 4 in Table 3) where instead of the initial income share of the bottom 40% we use Gini of market1 income. Higher market income inequality is strongly associated with greater redistribution: if Gini increases by 1 point (say, from 40 to 41), the *sharegain* would on average increase by around 0.08 percentage points.

**Table 3. Regression results, country fixed-effects, unbalanced panel**  
(dependent variable *sharegain*, in percentage points)

	Executive office		Legislature	
	1	2	3	4
<b><u>Democracy</u></b>				
Democracy dummy	0.10 (0.78)		-0.03 (0.94)	
Competitiveness for executive office (1 to 7)		0.05 (0.75)	-----	-----
Competitiveness for legislature (1 to 7)	----	----		0.35 (0.50)
<b><u>Partisanship</u></b>				
Political alignment of the executive office (higher value more to the left)	0.21 (0.14)	0.14 (0.33)	-----	-----
Political alignment of the legislature (higher value more to the left)	-----	-----	0.30* (0.03)	0.27* (0.05)
<b><u>Level of development</u></b>				
GDP pc (in logs; \$PPP)	0.41 (0.56)	0.62 (0.38)	-0.19 (0.78)	0.25 (0.72)
<b><u>Initial inequality</u></b>				
Share of bottom 40% in market1 income	-0.13** (0.00)		-0.16** (0.00)	
Gini of market1 income		8.3* (0.01)		8.0* (0.01)
Survey dummy (1=LIS, 0=SEDLAC)	-1.45** (0.00)	-1.27** (0.00)	-1.46** (0.00)	-1.32** (0.00)
Constant	-0.08 (0.99)	-8.04 (0.22)	5.52 (0.37)	-6.81 (0.37)
R <sup>2</sup> within	0.11	0.15	0.21	0.16
Number of observations (country-years)	202	205	207	210
Number of countries	20	20	20	20

*Note: p-values between brackets. \*\* (\*) indicate that the coefficient is significant at 5 (1) percent level. Democracy dummy takes the value of 1 if both competitiveness for the executive office and legislature takes the maximum value of 7.*

## Conclusions

The objective of the paper was to study recent decrease of income inequality in Latin America and the Caribbean while placing it within the median voter framework and actual political developments in the region. We were motivated by two questions: first, does greater market income inequality lead to greater redistribution through social transfers?; and second, are leftist political parties more redistributionist? The answer to both questions is “yes”.

Like in other regions, we find very strong evidence in Latin America that greater market inequality is associated with what may be called “automatic income stabilizers” that provide some compensation to the poor for their lower market income. These automatic income stabilizers in Latin America are much weaker and less reactive to the loss of market income among the poor than are similar stabilizers in Western countries and Eastern Europe, or to the extent that we can tell (given sparse data) in Asia. Thus we find that Latin America differs from other regions in the world because it has very high market income inequality and modest social transfers.



Regarding our second question, we find evidence that more leftist parties when they control national parliaments are associated with greater pro-poor redistribution. (We do not find however that the same effect holds for leftist presidents.) This is an important finding because it shows that the pro-left political swing in the early 2000s and the reduction of LAC inequality were unlikely to have been independent events. There might have been political roots to the recent decrease of Latin American inequality. While we obviously cannot prove causality, nor can affirm that it was the left-wing swing that led to the reduction in inequality (as opposed to say, reduction of inequality leading to the vote for more leftist parties), we believe that retrieving this result empirically, from the data covering 20 countries, 35 years, and coming from more than 200 surveys, may be relevant for policy-making not only in Latin America but elsewhere.

## References

- Alesina, Alberto and Dani Rodrik (1994), “Distributive politics and economic growth”. *Quarterly Journal of Economics*, vol. 109, 465-90.
- Alesina, Alberto and Roberto Perotti (1994), “The political economy of growth: A critical survey of the recent literature”, *The World Bank Economic Review*, vol. 8, 350-371.
- Alvaredo, Facundo and Leonardo Gasparini (2013), “Recent trends in poverty and inequality in developing countries”, Universidad Nacional de la Plata, Documento de Trabajo No. 151, November 2013. Available at [bit.ly/18URSGs](http://bit.ly/18URSGs).
- Barenboim, Igor and Lukas Karabarbounis (2008). “One dollar, one vote. JFK School of Government”, Harvard University, Working Paper. September. Available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1155064](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1155064).
- Borge, Lars-Erik and Jørn Rattsø (2004), “Income distribution and tax structure: Empirical test of the Meltzer-Richard hypothesis”. *European Economic Review*, vol. 48, 805-826.
- Bussett, William F., John Burkett and Louis Putterman, (1999), “Income distribution, government transfers, and the problem of unequal influence”, *European Journal of Political Economy*, vol. 15, 165-176.
- Corneo, Giacomo and Frank Neher (2015), “Democratic redistribution and the rule of the majority”, *European Journal of Political Economy*, vol. 40, 96-109.
- Dalgaard, Carl-Johan, Henrik Hansen and Theo Larsen (2005), “Income skewness, redistribution and growth: A reconciliation”, European Policy Research Unit, University of Copenhagen, Department of Economics Working Paper. Available at <http://www.econ.ku.dk/epru/files/wp/wp-03-14.pdf>.
- Dhami, Sanjit and Ali el-Nowaihi (2007), “Fairness and Direct Democracy”, University of Leicester Working Paper No. 06/11, November.
- Ferreira, Francisco, Philippe Leita and Julie Litchfield (2007), “The rise and fall of Brazilian inequality, 1982-2004”, *Macroeconomic Dynamics*, pp. 1-32.
- Gasparini, Leonardo, Guillermo Cruces and Leopoldo Tornarolli (2011), “Recent Trends in Income Inequality in Latin America”, including comments by Daniel Mejía and Daniel E. Ortega, *Economía: Journal of the Latin American and Caribbean Economic Association*, vol. 11 (2), Spring, 147–201
- Iversen, Torben and David Soskice (2006), “Electoral institutions and the politics of coalitions: Why some democracies redistribute more than others”, *American Political Science Review*, vol. 100, 165-182.
- Keefer, Philip and Branko Milanovic (2014), “Party age and party color : new results on the

political economy of redistribution and inequality”, World Bank Working Paper No. 7129, December.

Kenworthy, Lee and Leslie McCall, (2008), “Inequality, public opinion and redistribution”, *Socio-Economic Review*, vol. 6, 35-68.

Lind, Jo T. (2005). “Why is there so little redistribution”. *Nordic Journal of Political Economy* vol. 31, 111-125.

Mahler, Vincent (2006), “Electoral turnover and income redistribution by the state: a cross-national analysis of the developed democracies”, Luxembourg Income Study Working Paper No. 455, November.

Meltzer, Allan. H. and Richard, Scott F. (1981), “A rational theory of the size of government”, *Journal of Political Economy*, vol. 89, 914-927.

Meltzer, Allan. H. and Richard, Scott F. (1983), “Tests of a rational theory of size of government”. *Public Choice*, vol. 41, 403-437.

Milanovic, Branko (2000), “The median voter hypothesis, income inequality and income redistribution: An empirical test with the required data”, *European Journal of Political Economy*, vol. 16, 367-410.

Moene Kalle O. and Michael Wallerstein (2001), “Inequality, social insurance and redistribution”, *American Political Science Review*, vol. 95, 859-874.

Nel, Philip (2007). “When can the rabble redistribute? Democratization and income distribution in low- and middle-income countries”. In *Institutions and market economies: The political economy of growth and development*, edited by R. Garside, Basingstoke: Palgrave Macmillan, 222-249.

Perotti, Roberto (1996), “ Growth, income distribution, and democracy: What the data say?”. *Journal of Economic Growth*, vol. 1, 149-187.

Persson, Torsten and Guido Tabellini (1992). “Growth, distribution and politics”, *European Economic Review*, vol. 36, pp. 593-602.

Scervini, Francesco (2009). “The empirics of the median voter: democracy, redistribution and the role of the middle class”, Collegio Carlo Alberto Working Paper. Available at <http://files.server.carloalberto.org/id2009/scervini.pdf>.

Scervini, Francesco (2012), “Empirics of the median voter: democracy, redistribution and the role of the middle class”, *The Journal of Economic Inequality*, 2012, Vol.10, No 4, 529-550.

Shayo, Moses (2009), “A model of social identity with an application to political economy: nation, class, and redistribution”, *American Political Science Review*, vol. 103, 147-174.

Tornarolli, Leopoldo, Mattias Ciaschi and Luciana Galeano (2018), “Income distribution in Latin

America. The Evolution in the last 20 years: A global approach”, SEDLAC, Documento de Trabajo 234, September.

Tridimas, Gorge and Stanley L. Winer (2005), “The political economy of government size”. *European Journal of Political Economy*, vol. 21, 643-666.

Tanninen, Hanny and Matti Tuomala M., (2001), “Inherent inequality and the extent of redistribution in OECD countries”, Tempere Working Papers Net series Working Paper 7, December.

Wong, Mathew Y. H. (2017), “Median voter and power resources revisited: a composite model of inequality”, *European Political Science Review*, vol. 9, No. 4, 607-628.