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RESEARCH

When government's economic ideology shapes income redistribution. Empirical evidence from the OECD

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Abstract
This paper studies the relationship between Government´s economic ideology and income redistribution, using a panel of OECD countries spanning the years 2004–2020. Our results point to the existence of a partisan effect, showing that taxes and transfer policies implemented by parties on the left reduce income inequality more than those of parties on the right. Other political and electoral factors (the proximity of the elections, the number of years for which the chief executive has been in office, and the presence of coalitional and minority governments) do not seem to be as relevant. We also analyze the role that the Great Recession and the globalization process have played in the relationship between Government´s economic ideology and income redistribution, finding that they have significantly altered it.

Keywords Income redistribution · Inequality · Taxes and transfers · Austerity · Political factors

JEL Classification C23 · H23 · H30 · H50

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1 Introduction

Given the relevant role played by taxes and transfers on income redistribution, one may argue whether the economic ideology of governments play a role in the income inequality gap through the design of these tools of fiscal policy. The classical hypothesis assumes that left-wing parties endorse more ambitious redistributive policies, since their ideological background seeks for equality, in contrast to right-wing governments and their preference for efficiency. However, this hypothesis has been questioned on the basis that some factors, like international tax competition for mobile assets (Swank and Steinmo 2002; Swank 2006) or the cost of international bonds in globalized capital markets (Lierse and Seelkopf 2016), put pressure on governments and influence the design of tax policies. Besides this, we cannot ignore the fact that left-wing parties have substantially modified their convictions about the proper size of public intervention in the economy (new laborism).[1]

The available literature on the effect of ideology on tax structure is prolific. Persson and Tabellini (1992; 1994), Haufler (1997), and Lockwood and Makris (2006) found that left-wing cabinets show a bias towards capital income taxes, with respect to labor income taxes. This is not surprising, since their theoretical economic principles are aligned with those of whom obtain their rents from labor, instead of those of whom obtain them from capital. Profeta and Scabrosetti (2017) found a positive relationship between being ruled by the left and the share of income taxes over GDP, corporate income tax in particular. However, other papers do not present conclusive results. Volkerink and De Haan (1999) detected a significant increase in direct and indirect tax rates when left-wing parties are in office during periods of political instability, but the preference for direct taxation is not demonstrated. Chernick (2005) proposed a model in which tax progressivity (calculated with the Suits Index) in the US is evaluated on the basis of political and geographical factors, and determined that states dominated by Republicans present a more regressive tax structure.

Counter-intuitive results can also be found in the literature. The seminal work by Pommerehne and Schneider (1983) established that left-wing parties give more emphasis on consumption taxes, and Aidt and Jensen (2009) ascertained that the number of seats held by left-wing parties is negatively related to taxation.[2] Tavares (2004) approached the ideological issue from the perspective of fiscal adjustments, indicating that left-wing cabinets tend to increase taxes, while right-wing ones are more willing to implement cutbacks in public budgets. In addition, the paper analyzed the modification of political conduct from a negative economic context. The author stated that left-wing cabinets are more likely to adjust their behavior during a period of fiscal distress (high debt and deficits), the success of the adjustment being conditioned by the presence of a majority or a coalition.[3]

A different study focused on the role played by the electoral system when studying the partisan effect on redistribution. Becher (2016) established the incentives of left-wing parties to move to the right in a scenario of growing income inequality in the presence of a majoritarian system but not under proportional representation. Iversen and Soskice (2006) argued that the electoral system plays a key role in redistribution by shaping the nature of political parties and conditioning coalitions. They stated that proportional systems are dominated by center-left governments, while majoritarian systems are controlled by center-right governments, and that proportional systems are more prone to redistribution.

[1] See Mudge (2018) for a comprehensive analysis.

[2] This surprising finding was probably conditioned by the period selected (1860–1938).

[3] For further discussion about the effect of fiscal distress in policy, see Perotti (1999).

We also need to pay attention to the concept of the median voter, which can modulate the economic ideology of political parties. The seminal contribution of Meltzer and Richard (1981) underlined that tax policies are induced by the position of the median voter regarding income distribution, suggesting that politicians are influenced by a specific profile of a citizen. Similarly, Austen-Smith (2000) concluded that, in countries under proportional representation, political choices on the equilibrium tax rates are strongly affected by the representative voter with average employee income. For these investigations, the median voter´s preferences are the keystone in the design of fiscal policies.

Discussing the role of political parties, Levy (2004) stated that, when the political space is multidimensional, parties turn out to be a decisive factor in achieving political outcomes, and the concept of the median voter loses its relevance. In this sense, Sobel (1998) discussed the different effects that fiscal policies have on the probability of re-election of US legislators, suggesting that conservatives are more likely to be affected by tax increases and liberals by public expenditure reductions. In such a way, voter preferences and ideologies may influence the design of fiscal policies. Roemer (2011) pointed out that left-wing cabinets tend to increase taxes on rich voters to reduce income inequality. Similarly, Potrafke (2017) held that, when the left is in power, there are higher tax rates and larger governments in OECD countries. A recent contribution to this field was that of Dorn and Schinke (2018), who showed that those in the top 1% of income share benefitted under right-wing governments in some OECD countries. Swank (2015; 2016) acknowledged the role of external pressures on tax reforms, such as the tax competition for mobile assets, but also found interesting conclusions about the role of ideological orientation. Swank (2015) stated that social democratic governments support progressive systems and social protection mechanisms if employers and labor remain highly organized, while Swank (2016) pointed out that left-wing voters, and other domestic factors, constrain neoliberal fiscal reforms. It should be noted that there are relevant discrepancies in the extent of the impact that ideology has on the design of fiscal policies.

In this research, we contribute to the literature by studying the relationship between economic ideology and other political and electoral factors, and income redistribution, through the design and application of fiscal policies for taxes and transfers. We also contribute by considering the effect that two major events have had on the relationship between ideology and redistribution: the globalization process and the Great Recession. To the best of our knowledge, nobody has previously studied this effect. With this purpose, we use a selection of OECD countries, which implies working with a homogeneous sample formed by countries with highly developed institutions and high levels of political rights. As stated by Gründler and Köllner (2017), OECD nations tend to redistribute substantially more than non-OECD countries.

Our empirical findings indicate that left-wing cabinets contribute more to reducing income inequality via taxes and transfers. Other political and electoral factors, such as the presence of a coalition government, the proximity to elections, and the existence of a minority government, do not present such a relevant role, but the longer the period for which the chief executive has been in office, the lower the income redistribution due to fiscal policies based on taxes and transfers, only in the pre-Great Recession period. Regarding the relationship between economic ideology and income redistribution, we find that the difference between left-wing and right-wing cabinets remains during the austerity period following the Great Recession, although the magnitude of the partisan effect is reduced. The globalization process also affects the ideology/redistribution relationship, again moderating the magnitude of the partisan effect as globalization increases.

The rest of the paper is organized as follows: Section 2 presents the data and describes the methodology. Section 3 displays the baseline regression, and shows the sensibility analysis and the impact of the globalization process and the Great Recession. Section 4 concludes the paper.

2 Data and methodology

2.1 Data

Data on income redistribution were gathered from the Income Distribution Database of the OECD. To build the sample, we implemented some adjustments. As our study period run from 2004–2020, information about Colombia (who only joined as a member in 2020), Costa Rica (2021), Latvia (2016), and Lithuania (2018) was ignored.[4] We only consider those countries belonging to the organization during most of the period analyzed.

We contemplate how to measure the capacity of fiscal policies to abate income inequality. To this end, we first considered the data on tax systems, starting with the public revenues by category (income, corporate profits, consumption, labor, and property), displayed as a ratio to the GDP and to the total tax revenues. However, income redistribution requires other factors to be considered.[5] Among the alternatives, we evaluated the possibility of using the effective tax rates proposed in Martínez-Mongay (2000), but their use prevented us to test the effect of political factors during the austerity period since the period studied ended in 2000, apart from not including all OECD countries.

In the literature, several contributions estimate the degree of progressivity using the Lorenz Curve.[6] Nevertheless, the available databases do not cover the period nor the countries in our sample. Analogous shortcomings take place with the *Commitment to reducing inequality index,* published by Development Finance International and Oxfam. Castañeda-Rodríguez (2018) proposed the difference between the tax revenues from income, profits and capital gains, and from goods and services. Nevertheless, all these measures are somehow intended to describe the tax structure, rather than to assess the efficiency of fiscal policies in the task of improving income redistribution.

After all these considerations, we decided to use the information published by the OECD on the Gini Index before and after taxes and transfers, and created the percentage of the reduction due to the application of these fiscal policies, which gives a measure of the income redistribution and represents our main dependent variable (*Gini reduction*).[7] On average, sample countries reduced the Gini Index 35.2% annually in the period 2004–2020, after applying taxes and transfers, but with notable

[4] Prior to 2004 information on the Gini Index before and after taxes and transfers is only available for 3 countries (Canada, Finland, and United Kingdom), which determines the starting point of our sample.

[5] In Sect. 3.5 the ratio of revenues from direct taxes to revenues from indirect taxes is used as the dependent variable.

[6] For further discussion, see Stroup and Hubbard (2013).

[7] Literature considering how to measure redistribution is prolific (see Milanovic 2000, as example). It is relevant the decision to consider the relative Gini change instead of the absolute Gini variation due to taxes and transfers (e.g. two governments reducing the Gini coefficient two hundredths may be considered to equally perform, but it is not the case if the Gini coefficients were 0.6 and 0.2, respectively, before their political decisions). We revisit this issue in the Subsection 3.4.

cross-country differences. For instance, several European members were able to lower inequality by applying taxes and transfers by more than 40%, while Chile and Mexico are clearly below 10%. We study whether the economic ideology of governments plays a role in this divergence.

Concerning political and electoral variables, data were collected from the DPI Database of Political Institutions (DPI2020), released by Scartascini et al. (2021). We start by showing the index used to define the economic ideological orientation of governments:

$$Ideology\ Index_{i,t} = \frac{\sum_{k=1}^{3}\left(S_{k,i,t}^{R,g} * 1 + * 3 + s_{k.i.t}^{L,g} * 5\right)}{\sum_{k=1}^{3} S_{k,i,t}^{g}} \quad (1)$$

where $i = 1, \ldots, 34$ refers to the country, and $t = 2004, \ldots, 2020$ refers to the year. The variable *Ideology Index* captures the economic ideology of the incumbent government. S_k^g represents the number of seats held by party k in the cabinet, $S_k^{R,g}$, $S_k^{C,g}$ and $S_k^{L,g}$ being the seats held by right-wing, center and left-wing parties' members in the government. To designate the economic ideology of each party, we followed the criteria established in the DPI2020. If the government is composed only of right-wing parties, *ideology* takes a value of one; if they are center parties, a value of three; and, finally, if parties belong to the left-wing, it takes a value of five. Coalitions of parties with different ideological orientations take intermediate values. The seats held by parties that cannot be classified from an economic point of view (religious, rural…) are ignored. This index was calculated in a similar manner to others proposed in previous contributions (Potrafke 2010, and others) but has a remarkable advantage, since it is a continuous variable, which gathers all the ideological orientations (Bellido et al. 2019; 2021). We anticipate that this Ideology Index is positively correlated with income redistribution, since left-wing governments are expected to promote expansionary policies with the aim of reducing income inequality (Alesina 1987; Chappell and Keech 1986).

We present in Table 1 the countries included in our sample, the years for which the required information is available, and the country-specific average of the dependent variable and the main interest variable.

The same database provided information on the proximity of elections, that we used to capture the opportunistic behavior of governments:

$$Elections_{i,t} = Y_{i,t} + \frac{M_{i,t}}{12} \quad (2)$$

where $Y_{i,t}$ are the remaining years of the current term for country i and year t, and $M_{i,t}$ is the month when elections are held. A negative estimated coefficient would indicate that the income redistribution increases when elections are closer, thereby confirming the opportunistic behavior.

Other political variable included in our estimations is *coalition,* a dummy that takes a value of one if the government is made up of more than one party. Alesina and Drazen (1991), and Spolaore (1993) showed that coalitions find more difficulties implementing restrictive fiscal policies, mainly due to the political competition among the different parties. We also incorporate the variable *Years in Office* to evaluate the impact of the number of years for which the chief executive has been in office. The longer a prime minister has been in office, the more time they have to implement fiscal policies according to their party´s ideology. We complete the set of political factors by incorporating the variable *Minority*, that takes a value of one if the parties in the government hold less than 50% of

Table 1 Summary Statistics by country

Country	Sample years	Average Gini Reduction	Average Ideology Index
Australia	2012; 2014; 2016; 2018	29.47	2
Austria	2007–2020	43.41	2.72
Belgium	2018–2020	47.75	2.53
Canada	2004–2020	27.93	2.88
Chile	2009; 2011; 2013	6.41	3.67
Czech Republic	2004–2013; 2015–2020	43.02	3.63
Denmark	2011–2019	41.59	2.78
Estonia	2013–2020	31.32	1.66
Finland	2004–2020	46.45	2.74
France	2012–2019	42.78	4
Germany	2008; 2011–2019	41.95	2.12
Greece	2006–2020	37.42	2.96
Hungary	2006–2020	44.45	2.32
Iceland	2004–2017	31.49	2.60
Ireland	2004–2020	43.44	2.34
Israel	2011–2019	21.82	1.43
Italy	2006–2018	35.85	3.15
Japan	2018	33.33	1
Korea	2011–2017	9.27	1
Luxembourg	2015–2020	35.40	3.97
Mexico	2012; 2014; 2016; 2018	3.33	2.5
Netherlands	2011–2020	33.36	1.32
New Zealand	2018–2020	28.23	4.71
Norway	2004; 2008–2020	38.35	2.54
Poland	2005–2020	36.35	3.25
Portugal	2006–2020	35.83	1.53
Slovak Republic	2007–2019	38.85	4.77
Slovenia	2005–2014; 2019–2020	45.09	3.37
Spain	2007–2020	33.39	2.99
Sweden	2013–2020	35.96	4.07
Switzerland	2006–2019	20.93	3.04
Turkey	2019	17.33	1
United Kingdom	2004–2020	30.31	2.65
United States	2013–2020	23.20	3

Note: These figures are based on the observations of our main regression (Column (3) in Table 3)

total seats in the lower house of parliament, which affects its ability to apply the desired fiscal policies.

As non-political explanatory factors, we include several demographic and social variables.[8] First, we include the variable *Voice and Accountability*, defined as "the

[8] Every variable included in the analysis is properly defined in Appendix A.

Table 2 Summary Statistics

Variable	Mean	SD	Min	Max
Gini Reduction	35.23	9.32	2.79	51.70
Ideology Index	2.78	1.65	1	5
Elections	1.75	1.17	0	4
Coalition	0.75	0.44	0	1
Years in Office	3.75	2.53	1	12
Minority	0.23	0.42	0	1
Voice and accountability	7.39	0.69	3.33	8.57
Older to Working Age	25.17	5.45	9.99	49.10
Fertility Rate	1.62	0.33	1.05	3.11
Migrant Population	12.40	8.05	0.8	47.6
Urban Population	75.36	11.57	51.53	98.08
Social Spending	21.29	5.17	7.1	32.3
Inflation Rate	1.79	1.84	-4.5	15.2
Unemployment Rate	7.86	4.56	2.1	28
GDP (ppp, thousands)	42.52	14.92	17.69	110.41

Note: These figures are based on the observations of our main regression (Column (3) in Table 3)

perception on the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media".[9] As stated by Gründler and Köllner (2017), higher democratic standards ensure that demands for redistribution become real political actions. We also include the percentage of population over 65 on the working-age population (*older to working age*), to capture the impact of intergenerational income redistribution. The premise, exposed in Roser and Ortiz-Ospina (2013), holds that inequality reduction is not only based on income redistribution between individuals at a specific time, but also between generations due to the pension systems. Empirically, the work of Gründler and Köllner (2017) included the dependency ratio of the population over 64, but the authors did not obtain robust results. In this sense, we also consider the variable *Fertility Rate*. As suggested by Wyplosz (2012), the aging process of developed economies comprises two main elements: the increase in life duration and the reduction of fertility rates. Gründler and Köllner (2017) suggested that higher fertility rates imply a greater demand for social transfers via parental leave programs and/or child allowance.

According to Alesina et al. (2023), immigrants are perceived to be economically weaker and to be more benefited by a more redistributive system, which lowers the population's support for more redistribution and may affect the design of fiscal policies for reasons independent of the economic ideology of cabinets. Following this idea, our estimates include the percentage of international migrant stock (*migrant population*).

Finally, our estimates incorporate the percentage of population living in urban areas (*urban population*). In previous literature, Alesina and Wacziarg (1998) stated that a more concentrated population favors economies of scale and reduces the need for public spending and taxes which, according to our initial hypothesis, would imply a negative effect on

[9] Original data provided the country's score on the aggregate indicator, in units of a standard normal distribution, i.e. ranging from -2.5 to 2.5. We rescaled this variable, that finally ranged from 0 (less democratic development) to 10 (more democratic development).

redistribution. By contrast, Andersson (2018) and Wan et al. (2022) found positive evidence for the relationship between urbanization and redistribution.

Economic variables also play a role in determining the redistributive power of fiscal policies. Social spending has been found to positively affect redistribution in OECD countries (Ulu 2018) and in developing countries (Bucheli et al. 2014; Lustig and Pessino 2014). This measure, defined as the percentage of all social public expenditures (on old-age and survivors', incapacity related, health, family, etc.) on the GDP, is included.

When prior literature analyzed the relationship between inflation and fiscal policy, it normally considered that the latter was an explanatory factor of the former (Rother 2004; Perotti 2005). However, some contributions dealt with this relationship by proposing the presence of reverse causality (Heller 1980; Hernández de Cos et al. 2016), finding that the effect differs according to the level of inflation. The latter contribution added that the impact depends on the cause (internal or external) of the inflationary process. Finally, we include the unemployment rate and the per capita GDP (in thousands, purchasing power parity) to control for labor market performance and economic development.

Table 2 provides the descriptive statistics for these variables. At first glance, the mean of the dependent variable *Gini reduction* is above 35%, which implies that the after taxes and transfers Gini coefficient of income is reduced by more than a third compared to that before taxes and transfers. Turning our attention to the main political variable of interest, the average value of the *Ideology Index* is lower than the middle value of the range defined for this variable, which implies a greater presence of right-wing parties in governments. We can also underline that 75% of governments are composed of multiple parties and 23% are in the minority in the lower house of parliament. The average period that the chief executive has been in office is shorter than four years, and the mean period until the next election is one year and nine months.

The preliminary study of the data is complemented by Fig. 1, which consists of four panels revealing the average percentage of Gini reduction due to taxes and transfers, by the economic ideology of the government. Panel 1 includes mostly left-wing governments; Panel 2 includes left-wing governments; Panel 3 includes mostly right-wing governments; and Panel 4 includes right-wing governments. It can be seen that, for left-wing governments, the percentage of Gini reduction increases during the sample time while, for right-wing governments, a decrease is observed, especially for governments formed only by parties with that ideology. However, a more detailed analysis is required to draw proper conclusions.

2.2 Methodology

Our main objective is to estimate the relationship between the economic ideology of governments and the income redistribution of 34 OECD countries over the period 2004–2020 via taxes and transfers. The estimated model is represented as follows:

$$Gini\ reduction_{i,t} = \beta_0 + \beta_1 Ideology\ index_{i,t} + \delta PF'_{i,t} + \varphi X'_{i,t} + \lambda_i + \gamma_t + \epsilon_{i,t} \quad (3)$$

where $Gini\ reduction_{i,t}$ is the percentage reduction in the Gini coefficient after taxes and transfers, compared to that before them, in country i and year t. $Ideology\ index_{i,t}$ is the main political variable of interest and captures the economic ideology of the party (parties) in the government. A positive value of the coefficient β_1 implies that left-wing parties reach a greater percentage of reduction in the Gini coefficient via taxes and transfers than right-wing parties. $PF'_{i,t}$ is the vector of the remaining political variables, including the

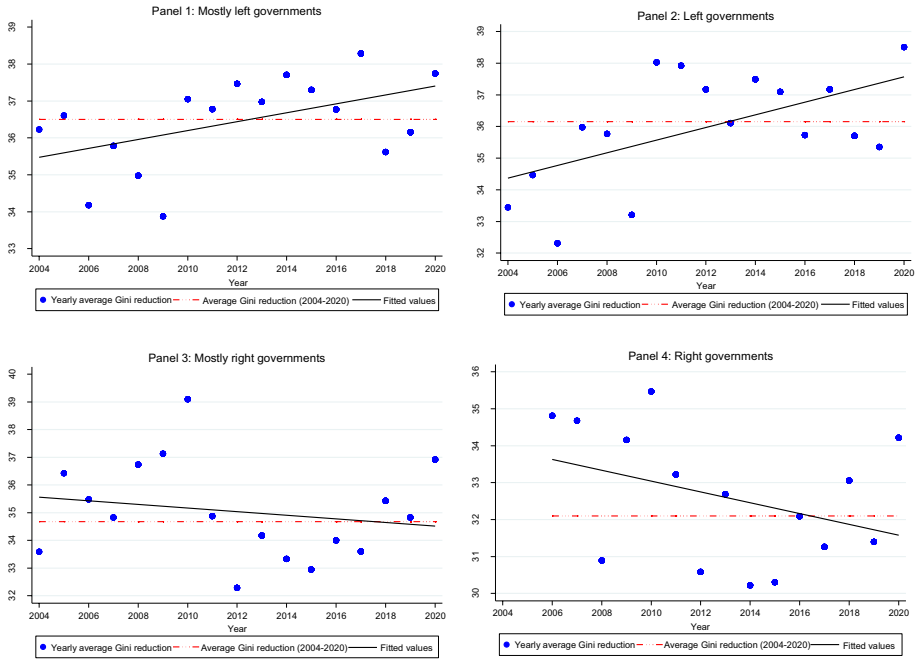

Fig. 1 Average Gini Reduction (Panels by Government Composition). Note: Panel 1 includes mostly left governments (Ideology Index value higher than 3); Panel 2 includes left governments (Ideology Index value equals to 5); Panel 3 includes mostly right governments (Ideology Index value lower than 3); Panel 4 includes right governments (Ideology Index value equals to 1)

years until the next election, the years that the chief executive has been in office, and the dummies for the presence of a coalition and the governance in minority. $X'_{i,t}$ includes a set of potential socio-economic and demographic determinants of the income redistribution beyond political and electoral factors, such as an index for the degree of democratization, the percentage of population over 65 on the working-age population, the fertility rate, the percentage of migrant and urban population, the social spending of governments, the inflation rate, the unemployment rate, and the per capita GDP.

By revisiting some previous studies (Angelopoulos et al. 2012, among others), and according to the Hausman test, we propose the use of fixed effects to estimate our model. The vector λ_i represents the country-specific effects and captures the impact of the time-invariant political and institutional factors. The vector γ_t represents the year-specific effects, given that we have a highly homogenous sample, being EU countries subject to a common framework that may shape the redistribution across countries for reasons independent to the current government´s economic ideology. The error term $\epsilon_{i,t}$ is assumed to be normally distributed.

We present three different models, by including the explanatory variables by category. Firstly, we include only political and electoral factors; secondly, we incorporate the set of social and demographic control variables; then we consider the remaining set of economic variables. Our main conclusions on the relationship between the economic ideology of governments and redistribution are maintained.

Table 3 Main Results (Dep. Variable: Percentage in Gini Reduction)

	(1)	(2)	(3)
Ideology Index	0.356***	0.319***	0.236***
	(0.078)	(0.080)	(0.073)
Elections	-0.042	-0.013	0.029
	(0.103)	(0.100)	(0.090)
Coalition	0.767*	0.828*	0.342
	(0.418)	(0.432)	(0.396)
Years in Office	-0.170***	-0.138**	-0.054
	(0.054)	(0.054)	(0.049)
Minority	0.122	0.066	-0.112
	(0.365)	(0.371)	(0.344)
Voice and accountability		1.181	1.532**
		(0.764)	(0.734)
Older to Working Age		0.156	0.040
		(0.154)	(0.143)
Fertility Rate		-4.798***	-2.071
		(1.308)	(1.259)
Migrant Population		-0.146	-0.158
		(0.189)	(0.170)
Urban Population		-0.188	-0.020
		(0.173)	(0.171)
Social Spending			0.696***
			(0.118)
Inflation Rate			-0.240**
			(0.096)
Unemployment Rate			0.167***
			(0.063)
GDP (ppp)			0.158***
			(0.055)
Constant	31.738***	42.201***	5.118
	(0.987)	(15.449)	(16.124)
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Observations	355	355	355
R-squared	0.270	0.316	0.472
Number of id	34	34	34

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively

3 Results

3.1 Main results

The results are displayed in Table 3. Column (1) reports the estimated results of Eq. (3), including only political and electoral factors; Column (2) incorporates social and demographic variables; and Column (3) includes our preferred estimation, adding economic control variables.

The index measuring the economic ideology of governments shows a positive and statistically significant coefficient, confirming our main hypothesis that left-wing governments are related to a greater percentage reduction in the Gini Index via taxes and transfers than right-wing governments. Column (3) shows that a government formed only by left-wing parties reaches a percentage reduction in income redistribution that is 0.944 points greater than that achieved by others formed only by right-wing parties. Given that the average Gini reduction for the sample is 35.2, this result implies that the income redistribution under left-wing governments is 2.68 percentage points greater. The remaining set of political and electoral variables do not show statistical significance.[10]

Among the social and demographic factors, we find that the greater the perception of developed democracy, the greater the income redistribution. The percentage of people older than 65 years old on the working age population does not impact the reduction in the Gini Index due to taxes and transfers. Although the result can seem counterintuitive, previous research suggests that, under democratic voting, increases in the dependency ratio can lead to more restricted social transfers and lower public incomes via taxes (Razin et al. 2002).

The relationship between the migrant population and income redistribution is not clear from a theoretical point of view. According to Razin et al. (2002), their presence does not necessarily favor a more intense taxation and redistribution, since native-born citizens can turn against high tax positions when they perceive that migrants benefit the most from them. According to our results, the stock of migrant population does not affect income redistribution.

The same result is observed for the percentage of urban population. This result is in line with that presented by Liddle (2017), who concluded that the degree of urbanization is "either unrelated to inequality indicators (…), or had a nonlinear effect". The *fertility rate* does not play a role in determining income redistribution either, as concluded by Gründler and Köllner (2017).

Regarding the economic variables, we find that *social spending* and *unemployment rate* have a positive and statistically significant impact on Gini reduction. This is not surprising, since they are connected to a fraction of people who benefit from the incomes derived from taxes and transfers. In addition, the results show that richer economies tend to reduce income inequality via taxes and transfers more than poorer economies. On the contrary, the variable *Inflation* shows a negative impact on Gini reduction, which is not a striking result. Sintos (2023) finds a positive small-to-moderate impact of inflation on income inequality.

3.2 The relevance of the globalization process

In this section, we investigate whether the globalization process has had an influence on the ideology/redistribution relationship. One may argue that the growing between-country factor mobility, and the increasing risk of capital flight, which encompasses more intense competition, might reduce the room to maneuver of the elected governments, mainly if they are formed by left-wing parties, hindering the adoption of fiscal policies aligned with

[10] Dummies for the presence of a proportional or majoritarian electoral system are not included since there is no within-country variability. We re-run our main estimates only for those countries with plurality systems and with proportional representation, and the main conclusions are maintained in the case of proportional representation, while the Ideology Index lacks statistical significance in the case of plurality. However, this result must be taken with caution due to the scarcity of the data (only 72 observations and 10 countries).

their theoretical principles. In this sense, Potrafke (2009) studied the connection between partisan politics and the development of globalization, finding that left-wing governments increase their social expenditure under rapidly growing globalization. Gottschalk and Peters (2003) focused on the effect that the globalization process has on voting for redistribution policies, concluding that the former reduces the scope of redistribution. Using the KOF Index of Globalization, Bergh and Nilsson (2010) determined that freedom to trade internationally, social globalization, and deregulation are linked to inequality. Gozgor and Ranjan (2017) showed that not only inequality but also redistribution have been increasing with globalization.

With the purpose of studying the role of globalization in our model, we include in Table 4 the KOF Index of Globalization (Gygli et al. 2019), developed and first used by Dreher (2006), and its iteration with the economic government´s ideology. Following this strategy, the effect of the Ideology Index depends on the level of globalization. We can still observe that left-wing parties reduce income inequality more via taxes and transfers, but, as anticipated, globalization reduces the partisan differences. Specifically, each additional point of globalization, according to the KOF Index, reduces the percentage of Gini reduction due to taxes and transfers by 0.040 points. If we consider that the KOF Globalization Index takes its highest value (91) for the Netherlands (2015–2019) and Switzerland (2016–2020), in these cases, the coefficient of the Ideology Index turns negative. The conclusion is clear: partisan political differences become narrow when globalization proceeds rapidly.

3.3 Robustness checks: alternative empirical strategies

Given that the redistribution power of taxes and transfers may be related to certain features of the political system, and to enhance the robustness of our results, we follow two alternative empirical strategies that are commonly found in the literature. Firstly, we introduce the lagged dependent variable into the explanatory variables to capture any potential dynamic effects present in the process (Column (1)). We then, in Column (2), employ the Generalized Method of Moments (GMM), a technique proposed by Arellano and Bond (1991), but in its two-step estimator version, which outperforms the classical method, as suggested by Windmeijer (2005).[11] The results are shown in Table 5 and confirm the greater redistributive power of taxes and transfers under left-wing governments, although the magnitude of the impact is smaller.

3.4 Robustness checks: alternative samples and covariates

To reinforce our findings on the influence of the economic ideology of governments on income redistribution, we conduct several robustness checks, as summarized in Table 6.

(i) The generosity of the welfare system and public policies in European countries, compared to other countries such as the US (Alesina and Glaeser 2004), may influence the redistributive power of taxes and transfers for reasons independent of the economic ideology. We propose an estimation by excluding non-European countries, in an attempt

[11] The Sargan (1958) test of overidentifying restrictions does not show any drawbacks to the estimation. To reduce the number of instruments, we exclude the year-dummy variables and restrict the maximum number of lags to one.

Table 4 The relevance of the Globalization Process (Dep. Variable: Percentage in Gini Reduction)

	(1)	(2)	(3)
Ideology Index	3.118**	3.346**	3.544**
	(1.580)	(1.573)	(1.392)
Ideology Index * Globalization Index	-0.033*	-0.037*	-0.040**
	(0.019)	(0.019)	(0.017)
Globalization Index	0.225	0.282*	0.163
	(0.160)	(0.170)	(0.155)
Elections	-0.027	0.006	0.046
	(0.103)	(0.100)	(0.090)
Coalition	0.572	0.642	0.195
	(0.429)	(0.439)	(0.398)
Years in Office	-0.168***	-0.131**	-0.053
	(0.054)	(0.054)	(0.049)
Minority	0.057	0.030	-0.165
	(0.367)	(0.371)	(0.342)
Voice and accountability		0.851	1.348*
		(0.796)	(0.768)
Older to Working Age		0.177	0.073
		(0.155)	(0.144)
Fertility Rate		-5.109***	-2.162*
		(1.336)	(1.297)
Migrant Population		-0.104	-0.157
		(0.194)	(0.175)
Urban Population		-0.254	-0.061
		(0.175)	(0.171)
Social Spending			0.710***
			(0.117)
Inflation Rate			-0.240**
			(0.097)
Unemployment Rate			0.160**
			(0.064)
GDP (ppp)			0.161***
			(0.055)
Constant	13.585	26.414	-4.576
	(12.875)	(18.061)	(18.017)
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Observations	355	355	355
R-squared	0.279	0.327	0.482
Number of id	34	34	34

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively

Table 5 Robustness Checks: Alternative empirical strategies (Dep. Variable: Percentage in Gini Reduction)

	(1)	(2)
Percentage reduction Gini (t-1)	0.660***	0.751***
	(0.043)	(0.071)
Ideology Index	0.147**	0.120**
	(0.059)	(0.057)
Elections	0.093	0.067
	(0.071)	(0.056)
Coalition	0.196	0.465*
	(0.330)	(0.248)
Years in Office	-0.004	0.032
	(0.040)	(0.030)
Minority	0.229	0.982***
	(0.274)	(0.357)
Voice and accountability	0.279	0.252
	(0.606)	(0.268)
Older to Working Age	-0.136	-0.130**
	(0.119)	(0.065)
Fertility Rate	-0.577	-0.749
	(1.025)	(1.090)
Migrant Population	-0.326**	-0.103
	(0.145)	(0.124)
Urban Population	-0.159	-0.061
	(0.139)	(0.121)
Social Spending	0.470***	0.646***
	(0.095)	(0.065)
Inflation Rate	0.030	0.014
	(0.077)	(0.024)
Unemployment Rate	0.045	-0.007
	(0.054)	(0.037)
GDP (ppp)	0.094**	0.163***
	(0.044)	(0.043)
Constant	14.037	-4.222
	(13.133)	(11.382)
Year FE	YES	NO
Country FE	YES	YES
Observations	314	282
R-squared	0.713	
Number of id	30	29

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Column (1) shows the results of a FE Model introducing a lag of the dependent variable. Column (2) shows the results of a GMM Model

to test whether the outcome is substantially modified. Looking at the coefficients in Column (i), we find that the coefficient of the economic ideology remains positive and statistically significant, reinforcing the idea that ideology plays a relevant role.

Table 6 Robustness Checks: Alternative samples and covariates (Dep. Variable: Percentage in Gini Reduction in Columns (1) – (9); Absolute Gini Reduction in Column (10))

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
Ideology Index	0.233***	0.237***	0.199**	0.211***	0.353***	0.289***	0.236***	0.245***	0.191***	0.001**
	(0.083)	(0.073)	(0.081)	(0.078)	(0.102)	(0.094)	(0.065)	(0.072)	(0.057)	(0.000)
Elections	0.062	0.031	0.094	0.028	0.063	0.094	0.029	0.030	-0.034	0.000
	(0.102)	(0.090)	(0.098)	(0.095)	(0.134)	(0.098)	(0.061)	(0.089)	(0.070)	(0.000)
Coalition	0.218	0.334	0.021	0.192	-0.478		0.342	0.399	-0.100	0.001
	(0.450)	(0.397)	(0.439)	(0.426)	(0.616)		(0.270)	(0.394)	(0.311)	(0.002)
Years in Office	-0.038	-0.054	-0.011	-0.067	-0.106	-0.034	-0.054	-0.052	-0.033	-0.000
	(0.055)	(0.049)	(0.054)	(0.052)	(0.069)	(0.055)	(0.051)	(0.049)	(0.038)	(0.000)
Minority	-0.533	-0.135	-0.408	0.112	-0.126	-0.075	-0.112	-0.075	-0.318	-0.001
	(0.424)	(0.349)	(0.406)	(0.372)	(0.531)	(0.429)	(0.339)	(0.342)	(0.269)	(0.002)
Voice and accountability	2.055**	1.529**	1.111	2.708***	2.341**	-1.409	1.532*	1.491**	0.923	0.009**
	(0.821)	(0.736)	(0.908)	(0.834)	(0.949)	(1.102)	(0.896)	(0.729)	(0.574)	(0.004)
Older to Working Age	-0.048	0.044	0.157	0.252	-0.205	-0.137	0.040	-0.021	0.125	0.001
	(0.166)	(0.143)	(0.181)	(0.169)	(0.199)	(0.142)	(0.179)	(0.145)	(0.114)	(0.001)
Fertility Rate	-1.850	-2.048	-2.479	-1.078	-0.096	-0.407	-2.071*	-1.829	0.580	-0.015**
	(1.410)	(1.264)	(1.568)	(1.445)	(1.719)	(1.287)	(1.049)	(1.256)	(1.002)	(0.006)
Migrant Population	-0.272	-0.156	0.173	-0.018	-0.288	-0.069	-0.158	-0.261	0.249*	0.000
	(0.220)	(0.171)	(0.206)	(0.182)	(0.301)	(0.177)	(0.232)	(0.175)	(0.143)	(0.001)
Urban Population	0.079	-0.017	0.064	-0.281	0.124	0.488***	-0.020	-0.062	-0.271**	0.001
	(0.184)	(0.171)	(0.212)	(0.181)	(0.215)	(0.178)	(0.128)	(0.171)	(0.135)	(0.001)
Social Spending	0.701***	0.697***	0.613***		0.710***	0.267**	0.696***	0.634***	0.179*	0.005***
	(0.136)	(0.118)	(0.159)		(0.158)	(0.134)	(0.111)	(0.121)	(0.100)	(0.001)
Inflation Rate	-0.283***	-0.243**	-0.314***	-0.211**	-0.281**	-0.430***	-0.240***	-0.234**	-0.175**	-0.001**
	(0.104)	(0.096)	(0.102)	(0.102)	(0.118)	(0.100)	(0.082)	(0.095)	(0.075)	(0.000)
Unemployment Rate	0.152**	0.170***	0.106	0.279***	0.217***	0.149*	0.167**	0.094	0.217***	0.002***
	(0.069)	(0.064)	(0.084)	(0.072)	(0.081)	(0.081)	(0.064)	(0.071)	(0.057)	(0.000)

Table 6 (continued)

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)
GDP (ppp)	0.162***	0.159***	0.130	-0.011	0.168**	0.011	0.158***	0.156***	0.057	0.001***
	(0.060)	(0.055)	(0.080)	(0.057)	(0.067)	(0.063)	(0.052)	(0.055)	(0.044)	(0.000)
Tertiary Education			0.086***							
			(0.024)							
Pension spending				0.356						
				(0.268)						
Gini Index								22.886**	66.917***	
								(10.542)	(8.890)	
Ratio 90/10									-6.795***	
									(0.503)	
Constant	-2.229	4.853	-5.171	24.339	-7.877	5.244	5.118	1.520	28.391**	
	(17.355)	(16.196)	(20.648)	(17.695)	(19.851)	(17.825)	(10.452)	(16.107)	(12.792)	
Year and Country FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	298	352	291	339	215	265	355	355	355	355
R-squared	0.462	0.472	0.480	0.423	0.556	0.496		0.480	0.681	0.637
Number of id	24	33	31	34	14	31	34	34	34	34

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Column (i) includes European countries. Column (ii) excludes Chile. Column (iii) includes the education variable. Column (iv) incorporates pension spending. Column (v) includes countries for which there are, at least, 14 observations for the dependent variable. Column (vi) includes coalition governments. Column (vii) shows results using Driscoll-Kraay standard errors. Columns (viii) and (ix) include the Gini coefficient, and the Gini Coefficient with the 90/10 ratio, respectively. Column (x) includes the absolute variation in Gini Coefficient as dependent variable

(ii) An analysis of the OECD database shows that Chile presents noticeable differences with respect to the rest of the countries, probably linked to its past as a testing ground for monetarist economic theory. To homogenize the sample, we replicate the estimation by eliminating its observations. The empirical estimation denotes that our findings are unaffected.

(iii) The relationship between higher education expansion and income inequality has been previously analyzed (Carnoy 2011; Qazi et al. 2018). Following this piece of research, we incorporate the gross enrolment rate in tertiary education, regardless of age, defined as the percentage of the total population of the five-year age group following on from leaving secondary school. We incorporate this variable in Column (iii) instead of in our main estimates due to the scarcity of data (for example, this variable is not available for the years 2019 and 2020). Our main conclusions do not change.

(iv) Social spending includes all public spending and incorporates items related to old-age and survivors, incapacity, and health, but also related to family or unemployment. To avoid correlation concerns, we substitute this explanatory variable with P*ension Spending,* that only includes spending in old-age and survivors.[12] The relationship between the economic ideology of the government and the Gini reduction remains unchanged.

(v) In the main estimate, there are some countries for which the number of observations is very scarce. To avoid the problems that this can generate, we replicate our results by limiting the sample to those countries for which we have at least 80% of the years' data available (14 observations out of 17). The results confirm the effect of the economic ideology on income redistribution.

(vi) Coalitional governments include different parties that may have different interests. This fact might affect the fiscal policies implemented, with the ruling parties forced to negotiate or renounce some principles. To provide more convincing empirical evidence, we replicate our analysis by limiting the sample to coalition governments. Again, we find evidence of a greater reduction of the Gini Index due to taxes and transfers under governments formed by left-wing parties.

(vii) Cross-sectional dependence can deteriorate the outcome obtained in Table 3 and hamper the correct interpretation of the coefficients. In this context, and with extreme caution (we use a panel with large N and small T), we propose the Driscoll-Kraay estimation method (Driscoll and Kraay 1998). The main conclusions remain invariant.

(viii) Gründler and Köllner (2017) confirmed the existence of a positive and highly significant effect of income inequality on the extent of redistribution, which implies that the economic ideology of the parties in government may lose relevance under different inequality scenarios. Following this idea, we replicate our main estimates by introducing the Gini Index before taxes and transfers. Findings on the relationship between the economic ideology and the Gini reduction after taxes and transfers confirm our previous results. Besides this, the higher the Gini Index (more inequality), the greater the reduction of the index after the application of taxes and transfers, which is a sign of convergence.

(ix) As suggested by Gründler and Köllner (2017), different shapes of income distribution can result in similar Gini indices. However, the effect on the income redistribution may differ, since the political power of the different income groups can force governments to implement the fiscal policies that favor their interests over others. Then, we incorporate the ratio of the upper bound value of the ninth decile (i.e. 10% of the people with the highest income) to that of the first decile, in addition to the Gini Index before taxes and

[12] We do not use the variable *Pension Spending* in the main estimates due to the scarcity of data for some years (for example, only 4 observations for the year 2020).

transfers. Again, our main conclusions do not change. More inequality is connected to a greater redistribution, and the greater the 90/10 ratio, the lower the income redistribution via taxes and transfers.

(x) Given that a specific reduction in the Gini coefficient can be interpreted differently depending on the original value, we replicated these estimates using the absolute difference before and after taxes and transfers instead of the relative variation. The results again show a greater redistributive effect of policies implemented by left-wing parties. Specifically, the coefficient of the Ideology Index, which is statistically significant at the 5% level, is 0.001. Given that the average absolute variation of the Gini Index for the sample of our estimates is 0.167, a government formed by one or more left-wing parties reduces inequality by 2.4 percentage points more than others formed by one or more right-wing parties.

The robustness checks developed in this section confirm the consistency of our results, with governments formed by one (or more) left-wing parties contributing more to the reduction of the Gini Index due to the application of taxes and transfers than right-wing parties.

3.5 Alternative income redistribution measures

In our main estimates, we studied the relationship between the economic ideology and the income redistribution via the percentage reduction in the Gini coefficient after applying taxes and transfers. However, the use of this indicator has the weakness of not being available before 2004 for most of the countries included in our sample. For this reason, in this subsection we use two alternative indicators for the income redistribution.

Castañeda-Rodríguez (2018) proposed the use of the difference between the tax revenues from income, profits and capital gains, and tax revenues from goods and services, when studying tax determinants. Motivated by this idea, we first created the ratio between progressive and regressive taxes. However, determining whether a specific tax fits the conventional definition of progressive is not a simple task. As detailed in the 'Glossary of Tax Terms' published by the OECD, some taxes are, by definition, classified as progressive or regressive without regard to the approach selected. This applies to taxes on personal income, broadly accepted as being progressive, and to taxes on goods and services, broadly accepted as being regressive. Nevertheless, for other taxes this matter is less clear. Following the criteria described in Joumard et al. (2012), a tax will be denoted as progressive insofar as it promotes better income redistribution and if its tax burden increases on the basis of income. In short, taxes on corporate profits, income and social contributions are considered progressive and taxes on property, goods and services, are regressive. We are aware that this definition may better describe the tax structure rather than assess the efficiency of fiscal policies in the task of improving income redistribution, but we consider it useful to complete the study on whether left-wing parties or right-wing parties are more committed to income redistribution.

We secondly use the percentage of social spending on the GDP as a dependent variable since, according to Joumard et al. (2012), transfers represent 75% of the reduction in income inequality. Again, we acknowledge that transfers alone do not provide a complete overview of the efficiency of fiscal policy in reducing income inequality, but they are related to public commitment in this regard.

Table 7 displays the results. The estimates with the tax ratio as the dependent variable are shown in columns (1) to (3), while columns (4) to (6) contain the estimates with social

Table 7 Alternative Dependent Variables (Dep. Variables: Income from Progressive Tax divided by Income from Regressive Tax (Columns (1) – (3)) Percentage of social spending on GDP (Columns (4) to (6))

	(1)	(2)	(3)	(4)	(5)	(6)
	Tax ratio			Social spending		
Ideology Index	0.013***	0.013***	0.019***	0.113***	0.104**	0.103**
	(0.004)	(0.004)	(0.004)	(0.042)	(0.041)	(0.041)
Elections	0.003	0.004	0.008	-0.001	-0.003	-0.005
	(0.005)	(0.005)	(0.005)	(0.058)	(0.056)	(0.056)
Coalition	-0.011	-0.011	0.004	0.738***	0.906***	0.901***
	(0.021)	(0.021)	(0.021)	(0.233)	(0.228)	(0.228)
Years in Office	-0.000	0.001	0.003	-0.070***	-0.065**	-0.064**
	(0.002)	(0.003)	(0.002)	(0.026)	(0.027)	(0.027)
Minority	0.008	0.005	-0.031*	-0.270	-0.111	-0.118
	(0.017)	(0.017)	(0.017)	(0.188)	(0.186)	(0.186)
Voice and accountability		0.031	-0.003		0.152	0.237
		(0.037)	(0.036)		(0.396)	(0.399)
Older to Working Age		-0.013**	-0.018***		0.333***	0.341***
		(0.005)	(0.005)		(0.057)	(0.057)
Fertility Rate		0.105	0.177***		-1.471**	-1.381**
		(0.065)	(0.063)		(0.692)	(0.693)
Migrant Population		0.008	0.016***		0.035	0.043
		(0.005)	(0.005)		(0.053)	(0.053)
Urban Population		-0.005	0.019***		-0.223***	-0.217***
		(0.007)	(0.007)		(0.073)	(0.073)
Social Spending			0.021***			
			(0.006)			
Inflation Rate			-0.008*			-0.094*
			(0.005)			(0.057)
Unemployment Rate			-0.000			
			(0.003)			
GDP (ppp)			0.026***			
			(0.003)			
Constant	1.600***	1.757***	-1.348*	18.656***	29.283***	27.925***
	(0.037)	(0.638)	(0.717)	(0.403)	(6.846)	(6.882)
Year FE	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES
Observations	535	535	535	535	535	535
R-squared	0.086	0.119	0.247	0.464	0.507	0.510
Number of id	34	34	34	34	34	34

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. Progressive Tax includes tax on corporate profits, social contributions and tax on incomes. Regressive Tax includes tax on properties and tax on goods and services. Columns (5) and (6) do not include GDP and Unemployment Rate to avoid endogeneity concerns

spending as the dependent variable. Our main conclusions on the role of economic ideology remain unchanged: left-wing parties in government increase the proportion of revenue from progressive taxes compared with regressive taxes, and social spending as a percentage of the GDP increases.

3.6 Changes after the Great Recession

The period following the Great Recession witnessed serious economic problems at different levels for all the world's economies. Although the extent and depth of these complications varied notably between countries, they contributed to reducing the room to maneuver of governments significantly, especially in the case of those with politics that were monitored by supranational organizations. The mechanisms of control in public expenditure, implemented from 2008 onward, correspond to the unfavorable economic environment originating in the Great Recession. As argued by Tavares (2004), under adverse circumstances, governments are expected to implement fiscal adjustments. Similarly, Joumard et al. (2012) held that financial crises force governments to reduce public expenditure or increase tax rates to contain the hefty fiscal deficit. In contrast, Limberg (2019; 2022) asserted that, historically, financial crises have caused increases in progressive taxation.

In any case, the budget constraints derived from that crisis period led to a great debate around the role that fiscal policies should play on the road to recovery. Alesina (2012) provided an overview of those controversial issues and discussed the preference for spending-based adjustments rather than tax-based ones. Gunzinger and Sturm (2016) studied the impact of political constraints on the magnitude of fiscal stimuli aimed at reacting to the Great Recession, concluding that political reality curtails the implementation of fiscal policies intended to overcome economic shocks. This fact may increase the concern that, given the new economic reality after the Great Recession, the weight of economic ideology on the design of fiscal policies could have been at least reduced, if not eliminated.

At this point, we create a dummy variable (*crisis08*) that takes the value of 1 after the start of the Great Recession and 0 otherwise. We interact this variable with every political and electoral factor included in our estimates, taking 2008 as the breaking point due to the fact that it represents the start of the restrictive policies commonly known as "austerity".[13]

Table 8 presents the results, following the same structure as our main results in Table 3. When analyzing Column (3), it is apparent that the beginning of the Great Recession caused a change in the relationship between some political variables and income redistribution: the Ideology Index and the number of years for which the chief executive has been in office show a clearly different impact on the Gini reduction via taxes and transfers depending on the period under consideration. The same applies to the *coalition* variable, which only favors redistribution in the adverse economic environment caused by the Great Recession.

However, in this model, as stated by Friedrich (1982), the coefficients do not show the impact of each independent variable, but the impact of each independent variable on

[13] The use of 2009 (when the Great Recession had spread globally) or 2010 (when the first European country was bailed out by international organizations) does not change our main conclusions. Restricting the period affected by austerity to the decade following the Great Recession also does not change our main conclusions.

Table 8 Considering the Great Recession impac. (Dep. Variable: Percentage in Gini Reduction)

	(1)	(2)	(3)
Ideology Index	0.857***	0.921***	0.756***
	(0.228)	(0.228)	(0.200)
Ideology Index * Crisis08	-0.561**	-0.682***	-0.602***
	(0.244)	(0.249)	(0.218)
Elections	0.407	0.308	0.228
	(0.252)	(0.247)	(0.217)
Elections * Crisis08	-0.501*	-0.351	-0.218
	(0.274)	(0.270)	(0.236)
Coalition	-0.457	0.061	-0.934
	(0.803)	(0.828)	(0.746)
Coalition * Crisis08	1.371*	0.960	1.482**
	(0.816)	(0.818)	(0.726)
Years in Office	-0.480***	-0.504***	-0.472***
	(0.117)	(0.119)	(0.106)
Years in Office * Crisis08	0.358***	0.431***	0.492***
	(0.131)	(0.134)	(0.119)
Minority	-1.307	-0.979	-1.171
	(0.960)	(0.950)	(0.832)
Minority * Crisis08	1.553	1.262	1.380
	(0.993)	(1.004)	(0.883)
Voice and accountability		1.354*	1.705**
		(0.770)	(0.729)
Older to Working Age		0.302*	0.203
		(0.157)	(0.144)
Fertility Rate		-3.879***	-1.452
		(1.294)	(1.221)
Migrant Population		-0.195	-0.226
		(0.185)	(0.165)
Urban Population		-0.236	-0.128
		(0.172)	(0.168)
Social Spending			0.641***
			(0.114)
Inflation Rate			-0.224**
			(0.092)
Unemployment Rate			0.171***
			(0.061)
GDP (ppp)			0.102*
			(0.054)
Constant	31.301***	39.551**	11.468
	(1.631)	(15.460)	(15.940)
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Observations	355	355	355
R-squared	0.320	0.364	0.522
Number of id	34	34	34

Note: Standard errors in parenthesis. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively

Table 9 Marginal Effects: set of political variables. (Dep. Variable: Percentage in GINI Reduction)

	(1)	(2)	(3)
Ideology Index			
Pre-Crisis	0.857***	0.921***	0.756***
	(0.228)	(0.228)	(0.200)
Post-Crisis	0.296***	0.239***	0.154**
	[12.68]	[7.74]	[4.04]
Elections			
Pre-Crisis	0.407	0.308	0.228
	(0.252)	(0.247)	(0.217)
Post-Crisis	-0.094	-0.043	0.010
	[0.75]	[0.16]	[0.01]
Coalition			
Pre-Crisis	-0.457	0.061	-0.934
	(0.803)	(0.828)	(0.746)
Post-Crisis	0.914**	1.021**	0.548
	[4.57]	[5.48]	[1.95]
Years in Office			
Pre-Crisis	-0.480***	-0.504***	-0.472***
	(0.117)	(0.119)	(0.106)
Post-Crisis	-0.122**	-0.073	0.020
	[4.09]	[1.48]	[0.13]
Minority			
Pre-Crisis	-1.307	-0.979	-1.171
	(0.960)	(0.950)	(0.832)
Post-Crisis	0.246	0.283	0.209
	[0.44]	[0.54]	[0.35]
Year FE	YES	YES	YES
Country FE	YES	YES	YES
Observations	355	355	355
R-squared	0.320	0.364	0.522
Number of id	34	34	34

This table shows the marginal effects of the set of political variables included in the analysis. Pre-crisis period corresponds to years 2004-2007 and post-crisis period to years 2008–2020. Standard errors in parenthesis. In brackets, the *F* statistic for the null hypothesis of no statistical significance. ***, **, * statistical significance at 1%, 5%, and 10% levels.

the percentage of Gini reduction conditioned on the value of the other independent variable (*crisis08*). Consequently, to obtain the coefficient of the economic ideology (and the remaining political and electoral factors) after the Great Recession, we needed to add the estimated coefficient of its interaction with the *crisis08* dummy. We conducted a test of statistical significance, to evaluate the impact of these marginal effects, which are shown in Table 9.

It can be seen that the positive relationship between the Ideology Index and the percentage reduction in the Gini Index via taxes and transfers is maintained during the entire sample period. However, the magnitude of this effect is clearly softened after the Great

Recession. This result is not groundbreaking: the budget constraints imposed during the austerity period reduced the capacity of governments to apply the desired fiscal policies, reducing (but not eliminating) the differences between left-wing and right-wing parties.

We also find differences in the variable showing the number of years for which the chief executive has been in office. We observe a negative impact on the Gini reduction before the Great Recession, but this effect disappears when austerity is imposed. It is important to note that, in the years after the outbreak of the Great Recession, incumbent parties suffered sizable losses in terms of popular support (Hernández and Kriesi 2016), which resulted in changes of government, on many occasions. We also find differences in the *coalition* variable, but they disappear when we incorporate the economic variables into the model. The *minority* and *elections* variables do not show any dissimilarity, pointing to the irrelevance of holding fewer than 50% of the seats in the lower house and to the absence of opportunistic behavior on the part of incumbent parties, when studying income redistribution.

4 Concluding remarks

Over recent decades, income inequality has increased among developed countries, according to the report presented by the OECD (2011). In this paper, we are interested in the role played by the economic ideology of governments in the Gini reduction after applying taxes and transfers. Conventionally, left-wing parties are expected to be more inclined toward social justice. In terms of fiscal policy, this hypothesis implies that, when the left is in power, taxes and transfers should respond to a scheme that affords a more intense reduction in income inequality. To prove this hypothesis, an analysis of a sample of 34 OECD countries was conducted over the period 2004–2020. Moreover, we explored the role played by the globalization process and the Great Recession in the economic ideology/redistribution relationship.

Our dependent variable is the percentage of income inequality abatement, measured through the Gini coefficient before and after taxes and transfers. Our findings reveal that left-wing cabinets are more prone to achieve a greater Gini reduction, this effect being robust to the consideration of alternative empirical strategies, to changes in the sample, and to the inclusion of new covariates. Nonetheless, this partisan effect softens as globalization expands, and, during the austerity period, is conditioned by the implementation of restrictive policies that began after the Great Recession. With respect to the remaining set of political and electoral factors, only the number of years for which the chief executive has been in office decreases the redistribution of income in the years prior to the Great Recession.

Concerning non-political factors, our main estimates show positive impacts of the unemployment rate, per capita GDP, social spending, and voice and accountability, while the inflation rate has a negative impact on Gini reduction.

In view of the results obtained, governments have the opportunity to act on income redistribution through fiscal policy instruments. It can be observed that both taxes and transfers provide the possibility of reducing the existing income gap but, also, that there are ideological differences when applying these instruments. It will be the citizens who decide, via their votes, which path their political leaders will follow.

Appendix

Table 10 Brief description of every variable included in the analysis

Variable	Category	Source	Description
Gini reduction	Dependent variable	OECD Income Distribution Database	Percentage reduction in the Gini coefficient of income when measured after taxes and benefits, as compared to before taxes and benefits
Ideology Index	Political factor	Database of Political institutions (Scartascini et al. 2021)	Prepared by the authors on the basis of data supplied by the Database of Political institutions (Scartascini et al. 2001). It ranges from 1 (right governments) to 5 (left governments)
Elections	Political factor	Database of Political institutions (Scartascini et al. 2021)	This variable measures the period of time until the next elections. It ranges from 0 (the year in which elections are held) to 5
Years in office	Political factor	Database of Political institutions (Scartascini et al. 2021)	This variable measures the number of years for which the chief executive has been in office
Coalition	Political factor	Database of Political institutions (Scartascini et al. 2021)	Dummy variable that takes value 1 if the government is formed by more than one party, and 0 otherwise
Minority	Political factor	Database of Political institutions (Scartascini et al. 2021)	Dummy variable that takes value 1 if the number of seats held by all government parties in the legislative chamber is equal or lower to 50%, and 0 otherwise
Voice and accountability	Explanatory variable	Kaufmann and Kraay (2023) Worldwide Governance Indicators	Extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. We rescaled this variable, from 0 (less democratic development) to 10 (more democratic development)
Older to working age	Explanatory variable	OECD	Population over 65 years old on the total population in working age
Fertility rate	Explanatory variable	World Data Bank	Number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with age-specific fertility rates of the specified year
Tertiary education	Explanatory variable	World Data Bank	Total enrolment in tertiary education (ISCED 5 to 8), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving

Table 10 (continued)

Variable	Category	Source	Description
Migrant population	Explanatory variable	World Data Bank	Number of people born in a country other than that in which they live, including refugees, as a percentage of total population
Urban population (%)	Explanatory variable	The United Nations; Population Divisions; World Urbanization Prospects	Percentage of people living in urban areas over the total people in the country
Social spending	Explanatory variable	OECD	Percentage of all public expenditures on old-age and survivors' pensions, incapacity related, health, family, active labour market programmes, unemployment, housing and other social policy areas, on the GDP
Pension spending	Explanatory variable	OECD	Percentage of all public expenditures (including lump-sum payments) on old-age and survivors' pensions on the GDP
Inflation rate	Explanatory variable	OECD	Annual increase in the prices of goods and services
Unemployment rate	Explanatory variable	OECD	Unemployed people as a percentage of the total labour force
GDP (ppp)	Explanatory variable	OECD	GDP Per Head, US$ at constant prices, output approach. Constat PPPs reference year 2010
Gini Index	Explanatory variable	OECD	The Gini coefficient for market income refers to income before taxes and transfers. However, data for Hungary, Mexico and Turkey as well as data for Greece from the Household Budget Survey refer to the income after taxes and before transfers
Ratio 90/10	Explanatory variable	OECD	Ratio of the upper bound value of the ninth decile (i.e. the 10% of people with highest income) to that of the upper bound value of the first decile
Crisis08	Explanatory variable	Created by the authors	Dummy variable that takes values 1 since the ongoing of the Great Recession (2008), and 0 otherwise
Gini reduction (t-1)	Explanatory variable	OECD Income Distribution Database	Percentage reduction in the Gini coefficient of income when measured after taxes and benefits, as compared to before taxes and benefits, in the previous year
Globalization index	Explanatory variable	First created and used by Dreher (2006); Gygli et al. (2019)	Measure of the economic, social and political dimensions of globalisation

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References

Aidt, T., Jensen, P.: Tax structure, size of government, and the extension of the voting franchise in Western Europe 1860–1938. Int. Tax Public Financ. **16**, 362–394 (2009)
Alesina, A.: Macroeconomic policy in a two-party system as a repeated game. Quart. J. Econ. **102**(3), 651–678 (1987)
Alesina, A.: Fiscal policy after the great recession. Atl. Econ. J. **40**, 429–435 (2012)
Alesina, A., Drazen, A.: Why are fiscal stabilizations delayed? American Economic Review **81**, 1170–1180 (1991)
Alesina, A., Glaeser, E.L.: Fighting poverty in the US and Europe: A world of difference. Oxford University Press, USA (2004)
Alesina, A., Wacziarg, R.: Openness, country size and government. J. Public Econ. **69**, 305–321 (1998)
Alesina, A., Miano, A., Stantcheva, S.: Immigration and redistribution. Rev. Econ. Stud. **90**(1), 1–39 (2023)
Andersson, P.F.: Democracy, urbanization, and tax revenue. Stud. Comp. Int. Dev. **53**(1), 111–150 (2018)
Angelopoulos, K., Economides, G., Kammas, P.: Does cabinet ideology matter for the structure of tax policies? Eur. J. Polit. Econ. **28**(4), 620–635 (2012)
Arellano, M., Bond, S.: Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. Rev. Econ. Stud. **58**, 277–297 (1991)
Austen-Smith, D.: Redistributing income under proportional representation. J. Polit. Econ. **108**(6), 1235–1269 (2000)
Becher, M.: Endogenous credible commitment and party competition over redistribution under alternative electoral institutions. Am. J. Political Sci. **60**(3), 768–782 (2016)
Bellido, H., Olmos, L., Román-Aso, J.A.: Do political factors influence public health expenditures? Evidence Pre-and Post-Great Recession. Eur. J. Health Economics **20**, 455–474 (2019)
Bellido, H., Olmos, L., Román-Aso, J.A.: The influence of government ideology on corruption: the impact of the Great Recession. Economia Politica **38**, 677–708 (2021)
Bergh, A., Nilsson, T.: Do liberalization and globalization increase income inequality? Eur. J. Polit. Econ. **26**(4), 488–505 (2010)
Bucheli, M., Lustig, N., Rossi, M., Amábile, F.: Social spending, taxes, and income redistribution in Uruguay. Public Finance Review **42**(3), 413–433 (2014)
Carnoy, M.: As higher education expands, is it contributing to greater inequality? Natl. Inst. Econ. Rev. **215**, R34–R47 (2011)
Castañeda-Rodríguez, V.M.: Tax determinants revisited. An unbalanced data panel analysis. J. Appl. Econ. **21**(1), 1–24 (2018)
Chappell, H.W., Jr., Keech, W.R.: Party differences in macroeconomic policies and outcomes. American Economic Review **76**, 71–74 (1986)

Chernick, H.: On the determinants of subnational tax progressivity in the US. Natl. Tax J. **58**(1), 93–112 (2005)
Dorn, F., Schinke, C.: Top income shares in OECD countries: The role of government ideology and globalisation. The World Economy **41**(9), 2491–2527 (2018)
Dreher, A.: Does globalization affect growth? Evidence from a New Index of Globalization. Appl. Econ. **38**(10), 1091–1110 (2006)
Driscoll, J.C., Kraay, A.C.: Consistent covariance matrix estimation with spatially dependent panel data. Rev. Econ. Stat. **80**, 549–560 (1998)
Friedrich, R.J.: In defense of multiplicative terms in multiple regression equations. Am. J. Pol. Sci. **26**(4), 797–833 (1982)
Gottschalk, S., Peters, W.: Redistributive taxation in the era of globalization. Int. Tax Public Financ. **10**, 453–468 (2003)
Gozgor, G., Ranjan, P.: Globalization, inequality and redistribution: Theory and evidence. The World Economy **40**(12), 2704–2751 (2017)
Gründler, K., Köllner, S.: Determinants of governmental redistribution: Income distribution, development levels, and the role of perceptions. J. Comp. Econ. **45**(4), 930–962 (2017)
Gunzinger, F., Sturm, J.E.: It's politics, stupid! political constraints determined governments' reactions to the great recession. Kyklos **69**(4), 584–603 (2016)
Gygli, S., Haelg, F., Potrafke, N., Sturm, J.E.: The KOF globalisation index–revisited. The Rev. Int. Org. **14**, 543–574 (2019)
Haufler, A.: Factor taxation, income distribution and capital market integration. Scand. J. Econ. **99**, 425–446 (1997)
Heller, P.S.: Impact of inflation on fiscal policy in developing countries. Staff Papers **27**(4), 712–748 (1980)
Hernández de Cos, P., Hurtado, S., Martí, F., Pérez, H.: Public Finances and Inflation: the Case of Spain, p. 1606. Documentos Ocasionales, Banco de España (2016)
Hernández, E., Kriesi, H.: The electoral consequences of the financial and economic crisis in Europe. Eur J Polit Res **55**(2), 203–224 (2016)
Iversen, T., Soskice, D.: Electoral institutions and the politics of coalitions: Why some democracies redistribute more than others. Am. Pol. Sci. Rev. **100**(2), 165–181 (2006)
Joumard, I., Pisu, M., Bloch, D.: (2012) Tackling income inequality. OECD J.: Econ. Stud. **1**, 37–70 (2012)
Kaufmann D, Kraay A.: Worldwide governance indicators. (2023). www.govindicators.org. Accessed 22 Feb 2022
Levy, G.: A model of political parties. Journal of Economic Theory **115**(2), 250–277 (2004)
Liddle, B.: Urbanization and inequality/poverty. Urban Science **1**(4), 35 (2017)
Lierse, H., Seelkopf, L.: Room to manoeuvre? International Financial Markets and the National Tax State. New Pol. Econ. **21**(1), 145–165 (2016)
Limberg, J.: 'Tax the rich'? The Financial Crisis, Fiscal Fairness, and Progressive Income Taxation. Eur. Pol. Sci. Rev. **11**(3), 319–336 (2019)
Limberg, J.: Banking crises and the modern tax state. Soc. Econ. Rev. **20**(1), 29–54 (2022)
Lockwood, B., Makris, M.: Tax incidence, majority voting and capital market integration. J. Public Econ. **90**, 1007–1025 (2006)
Lustig, N., Pessino, C.: Social spending and income redistribution in Argentina during the 2000s: The increasing role of noncontributory pensions. Public Finance Review **42**(3), 304–325 (2014)
Martinez-Mongay, C.: ECFIN's effective tax rates. Properties and comparisons with other tax indicators. Economic Paper No. 146 (October). European Commission, Directorate-General for Economic and Financial Affairs, Brussels (2000)
Meltzer, A.H., Richard, S.F.: A rational theory of the size of government. J. Polit. Econ. **89**(5), 914–927 (1981)
Milanovic, B.: The median-voter hypothesis, income inequality, and income redistribution: an empirical test with the required data. Eur. J. Polit. Econ. **16**(3), 367–410 (2000)
Mudge, S.L.: Leftism reinvented: Western parties from socialism to neoliberalism. Harvard University Press (2018)
OECD: Divided we stand: Why inequality keeps rising. OECD Publishing, Paris (2011). https://doi.org/10.1787/9789264119536-en
Perotti, R.: Fiscal policy in good times and bad. Q. J. Econ. **114**(4), 1399–1436 (1999)
Perotti, R.: Estimating the Effects of Fiscal Policy in OECD Countries, Available at SSRN 717561. (2005) https://doi.org/10.2139/ssrn.637189
Persson, T., Tabellini, G.: The politics of 1992: Fiscal policy and European integration. Rev. Econ. Stud. **59**(4), 689–701 (1992)
Persson, T., Tabellini, G.: Representative democracy and capital taxation. J. Public Econ. **55**(1), 53–70 (1994)

Pommerehne, W., Schneider, F.: Does government in a representative democracy follow a majority of voters' preferences? An empirical examination. In: Hanush, E.H. (ed.) Anatomy of government deficiencies, pp. 61–88. Springer, Berlin (1983)
Potrafke, N.: Did globalization restrict partisan politics? An Empirical Evaluation of Social Expenditures in a Panel of OECD Countries. Public Choice **140**(1–2), 105–124 (2009)
Potrafke, N.: The growth of public health expenditures in OECD countries: do government ideology and electoral motives matter? J. Health Econ. **29**, 797–810 (2010)
Potrafke, N.: Partisan politics: The empirical evidence from OECD panel studies. J. Comp. Econ. **45**, 712–750 (2017)
Profeta, P., Scabrosetti, S.: The political economy of taxation in Europe. Hacienda Pública Espanola **220**, 139 (2017)
Qazi, W., Raza, S.A., Jawaid, S.T., Karim, M.Z.A.: Does expanding higher education reduce income inequality in emerging economy? Evidence from Pakistan. Studies in Higher Education **43**(2), 338–358 (2018)
Razin, A., Sadka, E., Swagel, P.: The aging population and the size of the welfare state. J. Polit. Econ. **110**(4), 900–918 (2002)
Roemer, J.E.: A theory of income taxation where politicians focus upon core and swing voters. Soc. Choice Welfare **36**, 383–421 (2011)
Roser, M., Ortiz-Ospina, E.: Income Inequality, Published online at OurWorldInData.org. (2013). Retrieved from: 'https://ourworldindata.org/income-inequality'. Accessed 20 Jan 2022.
Rother, P.C.: Fiscal policy and inflation volatility, Available at SSRN 515081. (2004) https://doi.org/10.2139/ssrn.515081
Sargan, J.D.: The estimation of economic relationships using instrumental variables. Econometrica: J. Econometric Soc., 393–415. (1958) https://doi.org/10.2307/1907619
Scartascini, C., Cruz, C., Keefer, P.: The database of political institutions 2020 (dpi2020). Banco Interamericano de Desarrollo, Washington (2021)
Sintos, A.: Does inflation worsen income inequality? A Meta-Analysis. Econ. Syst. **47**(4), 101146 (2023)
Sobel, R.S.: The political costs of tax increases and expenditure reductions: evidence from state legislative turnover. Public Choice **96**, 61–79 (1998)
Spolaore, E.: Policy making systems and economic efficiency: coalition governments versus majority governments. Mimeo, ECARE (1993)
Stroup, M.D., Hubbard, K.E.: An improved index and estimation method for assessing tax progressivity, Mercatus Center Working Paper (No. 13-14). (2013)
Swank, D.: Tax policy in an era of internationalization: Explaining the spread of neoliberalism. Int. Organ. **60**(4), 847–882 (2006)
Swank, D.: Taxing choices: international competition, domestic institutions and the transformation of corporate tax policy. J. Eur. Publ. Policy **23**(1), 1–33 (2016)
Swank, D., Steinmo, S.: The new political economy of taxation in advance capitalism democracies. Am. J. Pol. Sci. **46**(3), 642–655 (2002)
Swank, D.: The political foundations of redistribution in post-industrial democracies. LIS Working Paper Series no. 653. (2015)
Tavares, J.: Does right or left matter? Cabinets, Credibility and Fiscal Adjustments. J. Publ. Econ. **88**, 2447–2468 (2004)
Ulu, M.I.: The effect of government social spending on income inequality in OECD: a panel data analysis. Uluslararası Ekonomi Siyaset İnsan Ve Toplum Bilimleri Dergisi **1**(3), 184–202 (2018)
Volkerink, B., de Haan, J.: Political and institutional determinants of the tax mix: an empirical investigation for OECD countries. SOM Research Report, University of Groningen, Groningen (1999)
Wan, G., Zhang, X., Zhao, M.: Urbanization can help reduce income inequality. NPJ Urban Sustainability **2**(1), 1 (2022)
Windmeijer, F.: A finite sample correction for the variance of linear efficient twostep GMM estimators. J. Econometrics **126**, 25–51 (2005)
Wyplosz, C.: Fiscal rules: Theoretical issues and historical experiences, pp. 495–525. University of Chicago Press, In Fiscal policy after the financial crisis (2012)